

# 2016 Annual Report

LOOKING BACK



MARCH 15 • 2017



## **SAFE HARBOR STATEMENT**

This document may contain forward-looking statements, and it is important to note that the future results could differ materially from those discussed. A full discussion of the factors that could cause future results to differ materially can be found in Idaho Power's filings with the Securities and Exchange Commission.

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*Supplement 1: Cost-Effectiveness*

*Supplement 2: Evaluation*

NEEA Market Effects Evaluations (included on CD with Supplement 2)

## EXECUTIVE SUMMARY

In 2016, Idaho Power celebrated providing electric service to the residents of southern Idaho for 100 years. Since starting as a small company in 1916, Idaho Power has grown to serve over 500,000 customers in over 24,000 square miles in southern Idaho and eastern Oregon. In 2002, Idaho Power revitalized its energy efficiency programs and began the Idaho and Oregon Energy Efficiency Riders (Rider) to fund the pursuit of cost-effective energy efficiency. Energy efficiency and demand response provide economic and operational benefits to the company and its customers and supports the wise use of energy by Idaho Power customers.

Idaho Power's portfolio of energy efficiency program energy savings for 2016 increased to 170,792 megawatt-hours (MWh), including the estimated savings from the Northwest Energy Efficiency Alliance (NEEA), enough energy to power more than 14,000 average homes a year in Idaho Power's service area. This is a 4-percent increase from the 2015 energy savings of 163,672 MWh. In 2016, the company's energy efficiency portfolio was cost-effective from both the total resource cost (TRC) test and the utility cost (UC) test perspectives with ratios of 2.56 and 3.58, respectively. The portfolio was also cost-effective from the participant cost test ratio was 2.93. The savings from Idaho Power's energy efficiency programs alone, excluding NEEA savings, increased to 146,177 MWh in 2016 from 140,633 MWh in 2015.

Idaho Power successfully operated all three of its demand response programs in 2016. The total demand reduction achieved from the company's programs was 378 megawatts (MW) from an available capacity of 392 MW. Energy efficiency and demand response is an important aspect of Idaho Power's resource planning process. Idaho Power's 2016 achievements in energy savings exceeded the annual savings target identified in Idaho Power's *2015 Integrated Resource Plan (IRP)*.

Total expenditures from all funding sources on demand-side management (DSM) activities increased by nearly 10 percent, to \$43 million in 2016 from \$39 million in 2015. DSM program funding comes from the Idaho and Oregon Riders, Idaho Power base rates, and the annual power cost adjustment (PCA). Idaho incentives for the company's demand response programs are recovered through base rates and the annual PCA, while Oregon demand response incentives are funded through the Oregon Rider.

With a goal of using customers' funds wisely, Idaho Power employees and leaders strive to provide conscientious, prudent, and responsible action and activities that result in cost-effective energy efficiency. This report's content offers descriptions of the 2016 activities and savings.

In 2016, Idaho Power expanded the reach and frequency of its residential energy efficiency campaign, added a Smart-saver Pledge to engage and encourage customers to make an energy-saving behavior change, significantly increased the amount of energy efficiency-related social media posts, and began marketing the company's commercial and industrial energy efficiency offerings as a single program. Idaho Power's residential energy efficiency advertising campaign was awarded second place at the E Source Forum in the category of Best Ad Campaign for an Investor-owned Utility.

Idaho Power continued to use stakeholder input to enhance its programs. The company met regularly with its Energy Efficiency Advisory Group (EEAG) and individual customers seeking input on program improvement. To keep growth in the program portfolio, the company relied on its Program Planning Group (PPG), initiated in 2014, and NEEA's Regional Emerging Technology Advisory Committee (RETAC) to fill the pipeline with ideas for offerings to its energy efficiency programs. Additionally, Idaho Power continued program improvement to make it easier for its customers to participate in programs.

In 2016, Idaho Power distributed Energy-Saving Kits (ESK) at no additional cost to customers on request. By the end of the year, the company had distributed over 34,000 kits to customers in Idaho and Oregon. The ESK included light-emitting diodes (LED) lightbulbs, digital thermometers, shower timers, water flow-rate test bags, LED night lights, and educational materials. Additionally, by the end of the year, Idaho Power employees had personally delivered energy-efficiency messages and distributed nearly 25,000 lightbulbs directly to customers.

This *Demand-Side Management 2016 Annual Report* provides a review of the company's DSM activities and finances throughout 2016 and outlines Idaho Power's plans for future DSM activities. This report also satisfies the reporting requirements set out in the Idaho Public Utilities Commission's (IPUC) Order Nos. 29026 and 29419. Idaho Power will provide a copy of the report to the Public Utility Commission of Oregon (OPUC) under Oregon Docket Utility Miscellaneous (UM) No. 1710.

## INTRODUCTION

In 2016, Idaho Power celebrated its 100<sup>th</sup> anniversary. For the last sixteen years, the company has pursued cost-effective energy efficiency as a primary objective. Energy efficiency and demand response provide economic and operational benefits to the company and its customers. Idaho Power provides information and programs to ensure customers have opportunities to learn about their energy use, how to use energy, and participate in programs.

This report focuses on Idaho Power's demand-side management (DSM) activities and results for 2016 and previews planned activities for 2017. The appendices provide historical and detailed information on the company's DSM activities and detailed financial information from 2002 through 2016. The two supplements provide detailed cost-effectiveness data and copies of Idaho Power's evaluations, reports, and research conducted in 2016.

Idaho Power's main objectives for DSM programs are to achieve prudent, cost-effective energy efficiency savings and to provide an optimal amount of demand reduction from its demand response programs as determined through the Integrated Resource Plan (IRP) planning process. Idaho Power considers cost-effective energy efficiency the company's least-cost resource and pays particular attention to ensuring the best value to Idaho Power's customers. Idaho Power strives to provide customers with programs and information to help them manage their energy use wisely.

The company achieves these objectives through the implementation and careful management of programs that provide energy and demand savings and through outreach and education. For economic and administrative efficiency and to reduce customer confusion, Idaho Power endeavors to implement identical programs in its Idaho and Oregon service areas. Idaho Power has been locally operated since 1916 and serves nearly 530,000 customers throughout a 24,000-square-mile area in southern Idaho and eastern Oregon.



Figure 1. 2016 Idaho Power service area map

Idaho Power's energy efficiency programs focus on reducing energy use by identifying homes, buildings, equipment, or components for which an energy-efficient design, replacement, or repair can achieve energy savings. Energy efficiency programs sometimes include behavioral components, including the Residential Energy Efficiency Education Initiative and both the Smart-saver Pledge and the School Cohort, which began in 2016. Energy efficiency programs are available to all customer sectors in Idaho Power's service area.

Savings from these programs are measured in terms of kilowatt-hour (kWh) or megawatt-hour (MWh) savings. These programs usually supply energy savings throughout the year at different times depending on the energy-efficiency measure put in place. Idaho Power shapes these savings based on the end use to estimate energy reduction at specific times of the year and day. Idaho Power's energy efficiency offerings include programs in residential and commercial new construction (lost-opportunity savings); residential and commercial retrofit applications; and irrigation and industrial system improvement or replacement. Custom programs under the irrigation and industrial sectors offer a wide range of opportunities for Idaho Power and its customers to design and execute energy-saving projects.

Energy efficiency program and demand response funding comes from the Idaho and Oregon Energy Efficiency Riders (Rider), Idaho Power base rates, and the annual power cost adjustment (PCA). Idaho incentives for the company's demand response programs are recovered through base rates and the annual PCA, while Oregon demand response incentives are funded through the Oregon Rider. Total expenditures from all funding sources on DSM-related activities increased by about 10 percent, from \$39 million in 2015 to \$43 million in 2016.

Idaho Power started its modern demand response programs in 2002, and now has over 10 percent of its all-time peak load available under demand response programs. The goal of demand response at Idaho Power is to minimize or delay the need to build new supply-side peaking resources. The company estimates future capacity needs through the IRP planning process and plans resources to mitigate any system peak deficits that exist. Demand response programs are measured by the amount of demand reduction, in megawatts (MW), available to the company during system peak periods.

## DSM Programs Performance

The 2016 savings consisted of 42,269 MWh from the residential sector, 88,161 MWh from the commercial/industrial sector, and 15,747 MWh from the irrigation sector. This represents a 4-percent increase from 2015 program savings. The industrial Custom Projects (formerly Custom Efficiency) program in the Commercial and Industrial Energy Efficiency Program contributed 33 percent of Idaho Power's direct program savings, while the residential sector Energy Efficient Lighting and Educational Distributions programs contributed 86 percent of the residential savings.

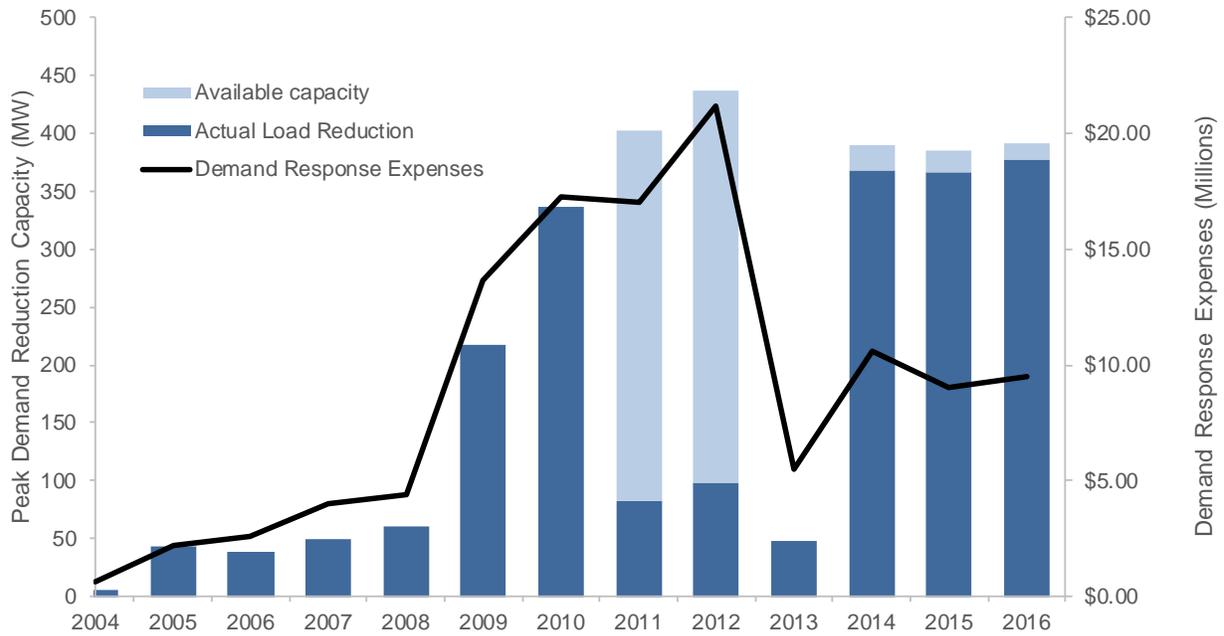


Figure 2. Peak demand-reduction capacity and demand response expenses, 2004–2016 (MW and millions [\$])

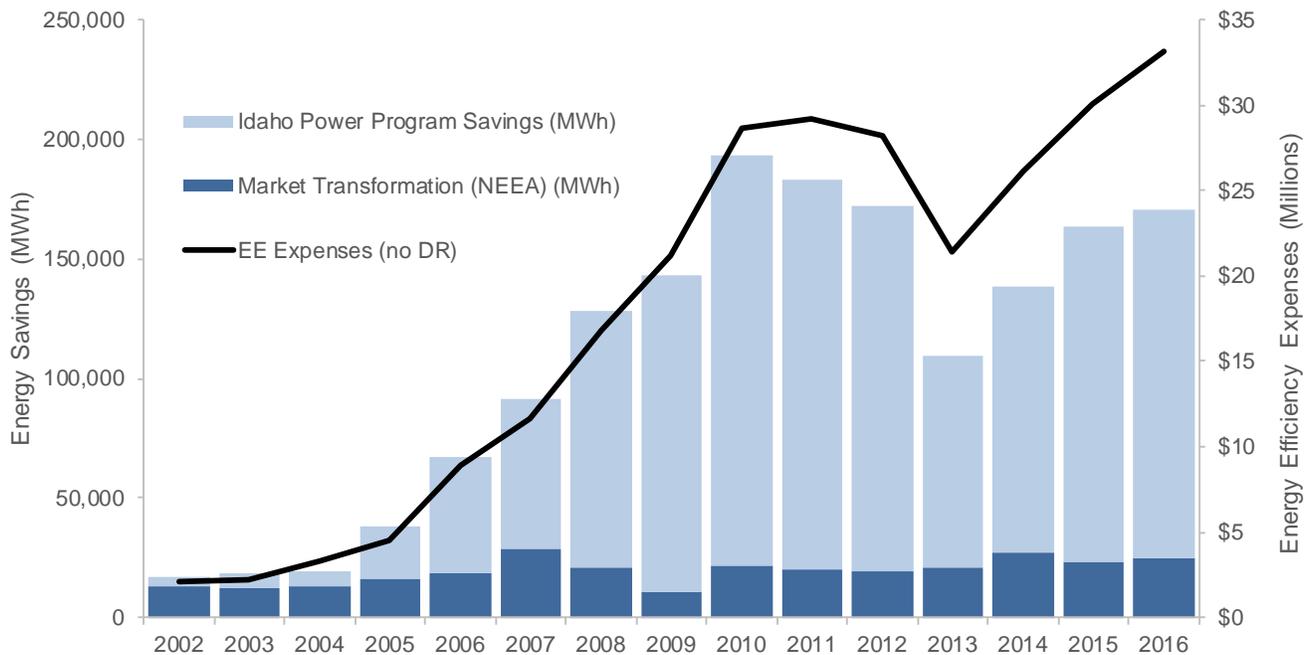


Figure 3. Annual energy savings and energy efficiency program expenses, 2002–2016 (MWh and millions [\$])

Figure 3 demonstrates that as Idaho Powers energy-efficiency portfolio matures, and some savings become more difficult and costly to achieve, the expense per incremental savings increases.

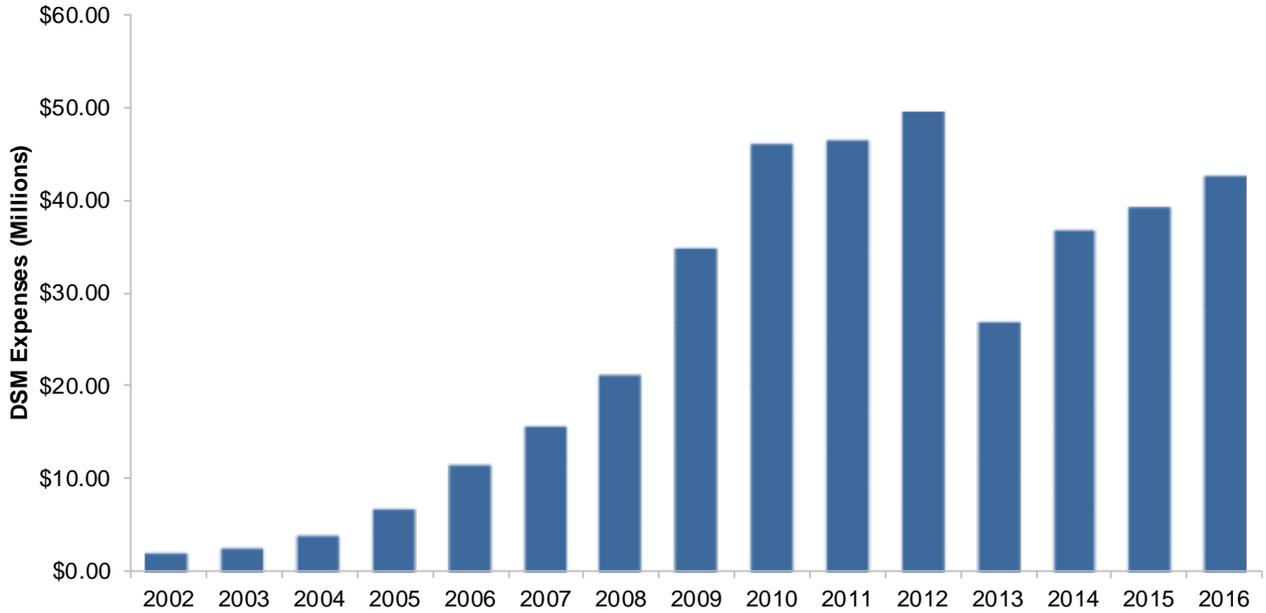


Figure 4. Total DSM expense history, including energy efficiency, demand response, and NEEA expenses, 2002–2016 (millions [\$])

Energy efficiency and demand response is an important aspect of Idaho Power’s resource planning process. Idaho Power’s 2016 achievements in energy savings exceeded the annual savings target identified in Idaho Power’s *2015 Integrated Resource Plan*. On a cumulative basis, the company’s energy savings have exceeded the IRP targets every year since 2002.

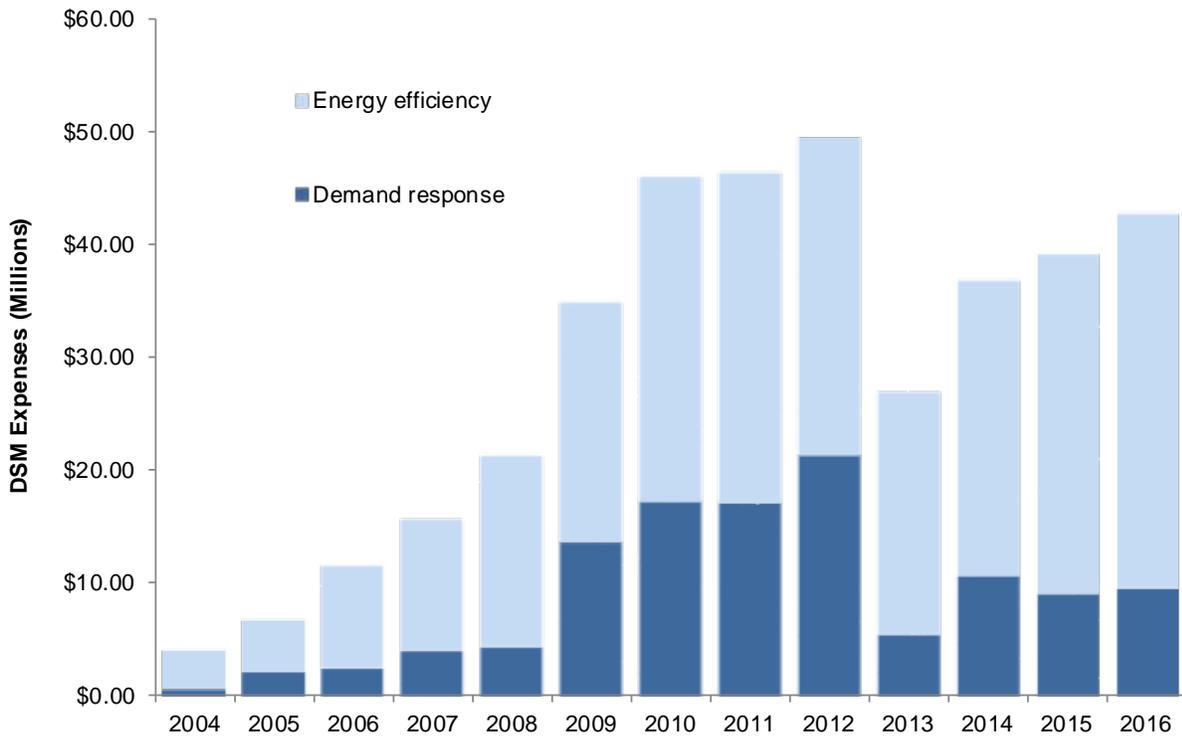


Figure 5. DSM expense history by program type, 2004–2016 (millions [\$])

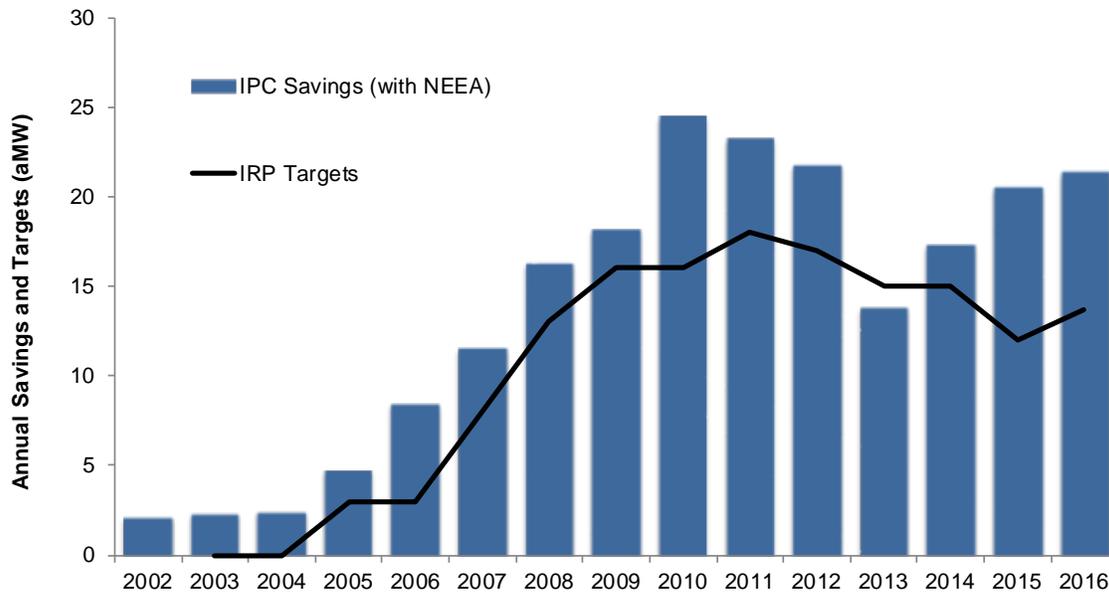


Figure 6. Annual incremental energy efficiency savings (aMW) compared with IRP targets, 2002–2016

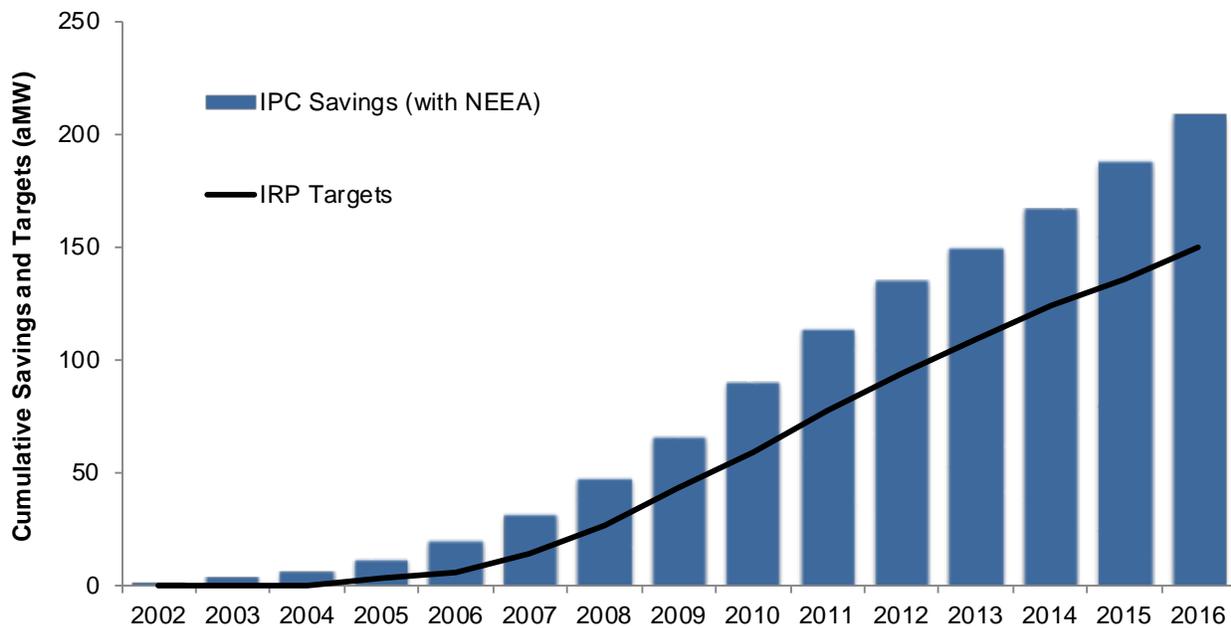


Figure 7. Annual cumulative energy efficiency savings (aMW) compared with IRP targets, 2002–2016

Idaho Power further increased its energy efficiency presence in the community by providing energy efficiency and program information through 92 outreach activities, including events, presentations, trainings, and other activities. In addition, Idaho Power customer representatives delivered 189 presentations to local organizations addressing energy efficiency programs and wise energy use.

In 2016, Idaho Power’s community education representatives presented *The Power to Make a Difference* 91 times to 2,350 students and gave 53 classroom presentations of *Saving a World Full of Energy* to 1,411 students. At events and presentations, company staff distributed over 24,000 light-emitting

diodes (LED) lightbulbs in custom packaging that highlighted the advantages of energy-efficient lighting and encouraged participation in Idaho Power's myAccount online portal. The company also distributed over 34,000 Energy-Saving Kits (ESK) by request across its service area. On February 8, 2016, Idaho Power filed a request with the Public Utility Commission of Oregon (OPUC) to implement the Educational Distributions program in Oregon. The company received approval of Oregon Schedule 71 on March 9, 2016. This enabled Idaho Power to provide ESKs and LEDs to its Oregon customers.

Since 2008, commercial and industrial training activities have informed and educated commercial and industrial customers regarding energy efficiency, increased awareness of and participation in existing commercial and industrial energy efficiency and demand response programs, and enhanced customer satisfaction regarding the company's energy efficiency initiatives. Raising the knowledge level of commercial and industrial customers regarding the wise use of energy in their daily operations is important to the continued success of Idaho Power's commercial and industrial energy efficiency programs.

Idaho Power continued its internal commitment to energy efficiency in 2016. Idaho Power upgraded the company's substation buildings across its service area, renovated portions of the corporate headquarters (CHQ) in downtown Boise in 2016, and redesigned the heating, ventilation, and air conditioning (HVAC) delivery system for the Maintenance and Electrical Shop. Also in 2016, the new Twin Falls Operation Center was constructed to replace the 1951-built center used to house the operations staff. The design incorporates energy-efficient lighting, heating and cooling, daylight harvesting, and a rooftop solar array.

### ***Demand Response Programs***

In summer 2016, Idaho Power had a combined maximum actual non-coincidental load reduction from all three programs of 378 MW at the generation level. The amount of capacity available for demand response varies based on weather, the time of year, and how programs are used and managed. The 2016 capacity of demand response programs was 392 MW. The demand response capacity is calculated using total enrolled MW from participants with an expected maximum realization rate for those participants. This maximum realization rate is not always achieved for every program in any given event. This realization rate is expected to be approximately 73 percent of billing demand for Irrigation Peak Rewards and 100 percent of actual non-coincidental load reduction for A/C Cool Credit and the Flex Peak Program.

On Wednesday, June 29, 2016, the company used the Irrigation Peak Rewards program and reached a system peak of 3,085 MW. Had the program not been used, the company estimates the load would have been approximately 3,327 MW. Idaho Power's 2016 summer peak occurred on June 28 with a peak of 3,299 MW while the all-time summer peak was 3,407 MW on July 2, 2013.

### ***Energy Efficiency Programs***

Idaho Power's portfolio of energy efficiency program energy savings for 2016 increased to 170,792 MWh, including the estimated Northwest Energy Efficiency Alliance (NEEA) savings. This is a 4-percent increase from the 2015 energy savings of 163,672 MWh and enough to power over

14,000 average-sized homes a year in Idaho Power’s service area. In 2016, the company’s energy efficiency portfolio is cost effective from both the total resource cost (TRC) test and the utility cost (UC) test perspectives with ratios of 2.56 and 3.58, respectively. The savings from Idaho Power’s energy efficiency programs alone (excluding NEEA savings) increased to 146,177 MWh in 2016 from 140,633 MWh in 2015.

Table 1. 2016 DSM programs by sector, operational type, location, and energy savings/demand reduction

Program by Sector	Operational Type	State	Savings/Demand Reduction
<b>Residential</b>			
A/C Cool Credit.....	Demand Response	ID/OR	34 MW
Easy Savings.....	Energy Efficiency	ID	403 MWh
Educational Distributions.....	Energy Efficiency	ID/OR	15,150 MWh
Energy Efficient Lighting.....	Energy Efficiency	ID/OR	21,094 MWh
Energy House Calls.....	Energy Efficiency	ID/OR	510 MWh
ENERGY STAR® Homes Northwest.....	Energy Efficiency	ID/OR	150 MWh
Fridge and Freezer Recycling Program (See ya later, refrigerator®).....	Energy Efficiency	ID/OR	632 MWh
Heating & Cooling Efficiency Program.....	Energy Efficiency	ID/OR	1,114 MWh
Home Energy Audit.....	Energy Efficiency	ID	207 MWh
Home Improvement Program.....	Energy Efficiency	ID	500 MWh
Multifamily Energy Savings Program.....	Energy Efficiency	ID/OR	150 MWh
Oregon Residential Weatherization.....	Energy Efficiency	OR	3 MWh
Rebate Advantage.....	Energy Efficiency	ID/OR	411 MWh
Shade Tree Project.....	Other Programs and Activities	ID	n/a
Simple Steps, Smart Savings™.....	Energy Efficiency	ID/OR	577 MWh
Weatherization Assistance for Qualified Customers.....	Energy Efficiency	ID/OR	746 MWh
Weatherization Solutions for Eligible Customers.....	Energy Efficiency	ID	622 MWh
<b>Commercial/Industrial</b>			
Commercial and Industrial Efficiency Program			
Custom Projects (Custom Efficiency).....	Energy Efficiency	ID/OR	47,519 MWh
New Construction (Building Efficiency).....	Energy Efficiency	ID/OR	12,393 MWh
Retrofits (Easy Upgrades).....	Energy Efficiency	ID/OR	28,125 MWh
Flex Peak Program.....	Demand Response	ID/OR	42 MW
Green Motors—Industrial.....	Energy Efficiency	ID/OR	124 MWh
Oregon Commercial Audits.....	Energy Efficiency	OR	n/a
<b>Irrigation</b>			
Green Motors—Irrigation.....	Energy Efficiency	ID/OR	74 MWh
Irrigation Efficiency Rewards.....	Energy Efficiency	ID/OR	15,674 MWh
Irrigation Peak Rewards.....	Demand Response	ID/OR	303 MW
<b>All Sectors</b>			
Northwest Energy Efficiency Alliance.....	Market Transformation	ID/OR	24,616 MWh

Table 2. 2016 program sector summary and energy usage/savings/demand reduction

	Energy Efficiency Program Impacts <sup>a</sup>				Idaho Power System Sales		
	Program Expenses	Energy Savings (kWh)	Average Energy (aMW)	Peak-Load Reduction (MW) <sup>b</sup>	Sector Total (MWh)	Percentage of Energy Usage	Number of Customers
Residential .....	\$10,724,671	42,268,823	4.8		4,907,730	34.92%	444,431
Commercial/Industrial .....	\$14,961,753	88,160,599	10.1		7,198,357	51.22%	69,462
Irrigation .....	\$2,372,352	15,747,130	1.8		1,948,079	13.86%	20,638
Market Transformation .....	\$2,676,387	24,615,600	2.8				
Demand Response .....	\$9,471,367	n/a	n/a	378			
Direct Overhead .....	\$293,039	n/a	n/a				
<b>Total Direct Program Expenses .....</b>	<b>\$40,499,570</b>	<b>170,792,152</b>	<b>19.5</b>	<b>378</b>	<b>14,054,166</b>	<b>100.0%</b>	<b>534,531</b>

<sup>a</sup> Energy, average energy, and expense data have been rounded to the nearest whole unit, which may result in minor rounding differences.

<sup>b</sup> Includes peak-load reduction from both demand response and energy efficiency programs. Includes 9.7% peak line loss assumptions.

## Program Evaluation Strategy

Idaho Power considers program evaluation an essential component of its DSM operational activities. The company uses third-party contractors to conduct impact, process, and other evaluations on a scheduled and as required basis.

Third-party contracts are generally awarded using a competitive bid process managed by Idaho Power's Strategic Sourcing department. In some cases, research and analysis is conducted internally and managed by Idaho Power's Research and Analysis team within the Customer Relations and Energy Efficiency (CR&EE) department. Third-party evaluations are specifically managed by the company's energy efficiency evaluator.

Idaho Power uses industry standard protocols for its internal and external evaluation efforts, including the National Action Plan for Energy Efficiency—Model Energy Efficiency Program Impact Evaluation Guide, the California Evaluation Framework, the International Performance Measurement and Verification Protocol (IPMVP), the Database for Energy Efficiency Resources, and the Regional Technical Forum's (RTF) evaluation protocols.

The company also supports regional and national studies to promote the ongoing cost-effectiveness of programs, the validation of energy savings and demand reduction, and the efficient management of its programs. Idaho Power considers primary and secondary research, cost-effectiveness analyses, potential assessments, impact and process evaluations, and customer surveys to be important resources in providing accurate and transparent program-savings estimates. Recommendations and findings from evaluations research and industry best practices are used to continuously refine Idaho Power's DSM programs. Historical evaluation plans, plans for 2017, and copies of 2016 evaluations and research can be found in *Supplement 2: Evaluation*.

## Cost-Effectiveness

Idaho Power considers cost-effectiveness of primary importance in the design, implementation,

and tracking of energy efficiency and demand response programs. Idaho Power's energy efficiency and demand response opportunities are preliminarily identified through the IRP process. Idaho Power uses third-party energy efficiency potential studies to identify achievable cost-effective energy efficiency potential that is added to the resources included in the IRP. Because of Idaho Power's diversified portfolio of programs, most of the new potential for energy efficiency in Idaho Power's service area is based on additional measures to be added to existing programs rather than developing new programs.

Prior to the actual implementation of energy efficiency or demand response programs, Idaho Power performs a cost-effectiveness analysis to assess whether a potential program design or measure will be cost-effective from the perspective of Idaho Power and its customers. Incorporated in these models are inputs from various sources that use the most current and reliable information available.

Additionally, Idaho Power relies on the results of program impact evaluations and recommendations from consultants. In 2016, Idaho Power contracted with ADM Associates, Inc. (ADM); Applied Energy Group (AEG); CLEAResult Consulting, Inc. (CLEAResult); and Tetra Tech, MA for program evaluations and research.

Idaho Power's goal is for all programs to have benefit/cost (B/C) ratios greater than one for the TRC test, UC test, and participant cost test (PCT) at the program and measure level where appropriate. Each cost-effectiveness test provides a different perspective, and Idaho Power believes each test provides value when evaluating program performance. If a particular measure or program is pursued even though it will not be cost-effective from each of the three tests, Idaho Power works with the Energy Efficiency Advisory Group (EEAG) to get input. The company believes this aligns with the expectations of the Idaho Public Utilities Commission (IPUC) and OPUC.

Details on the cost-effectiveness assumptions and data are included in *Supplement 1: Cost-Effectiveness*.

## Future Plans

Idaho Power will continue to pursue all prudent cost-effective energy efficiency as identified by third-party potential studies, and an appropriate amount of demand response based on the demand response settlement agreement approved in IPUC Order No. 32923 and OPUC Order No. 13-482. The forecast level of energy efficiency and the needed level of demand response are included in Idaho Power's biennial IRP planning process. Idaho Power includes all achievable cost-effective energy savings as identified in its potential studies in each IRP. Idaho Power considers this achievable potential a reasonable 20-year planning estimate. However, the company does not consider the achievable potential as a ceiling limiting energy efficiency acquisition. The IRP is developed in a public process that details Idaho Power's strategy for economically maintaining the adequacy of its power system into the future. The IRP process balances reliability, cost, risk, environmental concerns, and efficiency to develop a preferred portfolio of future resources to meet the specific energy needs of Idaho Power's customers.

Planning activities conducted in 2016 identified an opportunity for Idaho Power to increase its focus on small and medium business customers to build relationships and promote participation in energy

efficiency programs. A new position titled customer solutions advisor has been developed as a result of this effort. Eight customer solutions advisor positions have been developed and are scheduled to be in place and performing their assigned duties by May 1, 2017. The customer solutions advisors will focus on customer outreach by phone to “on-board” new business customers and support existing business customers by familiarizing them with Idaho Power’s rates, billing and payment options, and energy-usage information available through myAccount and by answering any questions they may have about services and programs offered by Idaho Power. A primary function of the customer solutions advisor role will be promoting and educating business customers on energy efficiency and demand response programs.

The company will continue to explore new energy savings potential through third-party resources, conferences, and regional organizations, and will continue to assess and develop new program offerings through its Program Planning Group (PPG). Idaho Power will work in consultation with the EEAG to expand or modify its energy efficiency portfolio. Future plans for individual programs are included under each program’s *2017 Program and Marketing Strategies*.

In 2017, Idaho Power will continue to enhance its marketing and outreach efforts as described in the Marketing section of this report and within each program section. Idaho Power will continue to work with NEEA on its market transformation activities during the 2015 to 2019 funding cycle.

The company will complete its research and evaluation, measurement, and verification (EM&V) projects included in the evaluation plan in *Supplement 2: Evaluation*.

Idaho Power will incorporate energy efficiency equipment and practices into its own facilities. In 2017, the company will continue renovations at the CHQ in downtown Boise. Idaho Power plans to remodel the ninth floor of the CHQ, exchanging the old T-12 parabolic lighting fixtures with T-8 lighting, and incorporating energy efficiency measures, such as lower partitions, lighting retrofits, and automated lighting controls.

In 2016, Idaho Power redesigned the HVAC delivery system for the Maintenance and Electrical Shops; construction on these projects is planned for 2018. Idaho Power estimates that with these improvements the shops may reduce their usage by 300,000 kWh in coming years.

## DSM Annual Report Structure

The *Demand-Side Management 2016 Annual Report* consists of the main document and two supplements. *Supplement 1: Cost Effectiveness* shows the standard cost effectiveness tests for Idaho Power programs and includes a table that reports expenses by funding source and cost category. In 2016, the company continued its commitment to third party evaluation activities. Included in *Supplement 2: Evaluation* are copies of all of Idaho Power’s 2016 evaluations, evaluations conducted by its regional partners, customer surveys and reports, Idaho Power’s evaluation plans, general energy efficiency research, and demand response research. Additionally, the report and supplements will be provided under Oregon Docket UM 1710 to provide the OPUC and its staff information on the company’s DSM programs and expenses.

This main *Demand-Side Management 2016 Annual Report* is organized primarily by the customer sectors residential, commercial/industrial, and irrigation. Each sector has a description, which is followed by information regarding programs in that sector. Each program description includes a table containing 2016 and 2015 program metrics, followed by a general description, 2016 activities, cost-effectiveness, customer satisfaction/evaluation, and 2017 plans. Each program section contains detailed information relating to program changes and the reasoning behind those changes, including information on cost-effectiveness and evaluation. Following the sector and program sections of the report are descriptions of Idaho Power's activities in other programs and activities, including market transformation, and Idaho Power's regulatory initiatives. Appendices 1 through 5 follow the written sections and contain a table on 2016 expenses and savings and historic information for all energy efficiency programs and demand response activities at Idaho Power.

In 2016, Idaho Power's commercial and industrial energy efficiency programs were combined in one umbrella program, the Commercial and Industrial Energy Efficiency Program, with options named to describe their purpose: New Construction (formerly Building Efficiency), Retrofits (formerly Easy Upgrades), and Custom Projects (formerly Custom Efficiency). The specific expenses and savings data are reported in the appendices separately for comparative purposes.

Also in 2016, Idaho Power filed with the IPUC to combine the Weatherization Assistance for Qualified Customers (WAQC) report, formerly filed with the IPUC annually on April 1, with Idaho Power's *Demand-Side Management 2016 Annual Report*. This change was approved by the IPUC in January 23, 2017, Order No. 33702 IPC-E-16-30, and the information formerly included in the WAQC annual report is now included in this report.

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## 2016 PROGRAM ACTIVITY

### DSM Expenditures

Funding for DSM programs in 2016 came from several sources. The Idaho and Oregon Rider funds are collected directly from customers on their monthly bills. For 2016, the Idaho Rider was 4 percent of base rate revenues; the 2016 Oregon Rider was 3 percent of base rate revenues. Additionally, Idaho demand response program incentives were paid through base rates and the annual PCA mechanism. Energy efficiency and demand response related expenses not funded through the Rider are included as part of Idaho Power's ongoing operation and maintenance (O&M) costs.

Total DSM expenses funded from all sources were \$43 million in 2016. At the beginning of 2016, the Idaho Rider balance was approximately \$6.6 million, and by December 31, 2016, the positive balance was \$10.7 million. At the beginning of the year, the Oregon Rider negative balance was approximately \$4.5 million, and by year-end, the negative balance was \$5.6 million.

Table 3 shows the total expenditures funded by the Idaho Rider, \$31,291,579; the Oregon Rider, \$2,168,868; and non-rider funding, \$9,303,017, resulting in Idaho Power's total DSM expenditures of \$42,763,464. The non-rider funding category includes Idaho Power demand response incentives, WAQC expenses, and O&M costs.

Table 3. 2016 funding source and energy savings

Funding Source	Expenses	kWh Savings
Idaho Rider .....	\$ 31,291,579	162,765,429
Oregon Rider.....	2,168,868	7,280,560
Non-Rider Funding.....	9,303,017	746,162
<b>Total .....</b>	<b>\$ 42,763,464</b>	<b>170,792,152</b>

Table 4 and Figure 8 indicate 2016 DSM program expenditures by category. The Materials & Equipment category includes items that directly benefit customers: ESKs and LED lightbulbs distributed at customer events (\$2,105,557), and direct-install weatherization measures (\$125,000). The expenses in the Other Expense category include marketing (\$1,208,731), program evaluation (\$198,210), program training (\$455,117), and program audits (\$174,861). The Purchased Services category includes payments made to NEEA and third-party contractors who help deliver Idaho Power's programs.

Table 4. 2016 DSM program expenditures by category

	Total	% of Total
Incentive Expense.....	\$23,676,667	55%
Labor/Administrative Expense.....	3,580,600	8%
Materials & Equipment.....	2,417,071	6%
Other Expense.....	2,111,683	5%
Purchased Services.....	10,977,442	26%
<b>Total 2016 DSM Expenditures, by Category</b> .....	<b>\$42,763,464</b>	<b>100%</b>

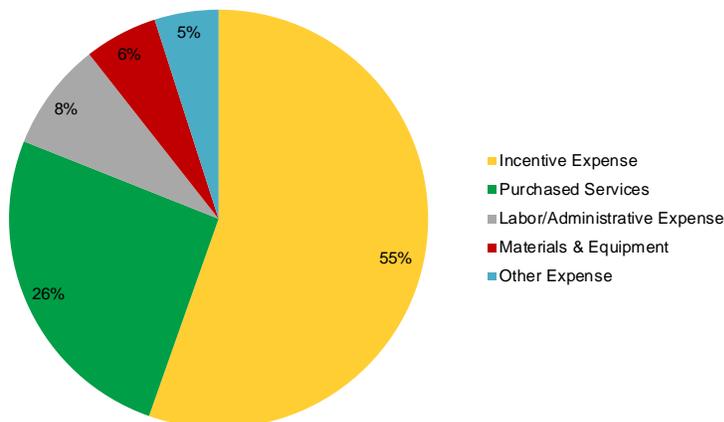


Figure 8. 2016 DSM program expenditures by category

Table 5 and Figure 9 describe the amount and percentage of incentives paid by segment and sector. There are two incentive segments (demand response and energy efficiency) and three sectors (residential, commercial/industrial, and irrigation). The incentives are funded by three mechanisms: the Idaho Rider, the Oregon Rider, and Idaho Power base rates. Market transformation related payments made to NEEA and payments made to third-party community action partners under the WAQC and Weatherization Solutions for Eligible Customers programs are not included in the incentive amounts.

Table 5. 2016 DSM program incentives totals by program type and sector

Program Type—Sector	Total	% of Total
DR <sup>a</sup> —Residential.....	\$ 424,565	2%
DR—Commercial/Industrial.....	639,611	3%
DR—Irrigation.....	6,406,340	27%
EE <sup>b</sup> —Irrigation.....	2,007,311	8%
EE—Residential.....	2,680,473	11%
EE—Commercial/Industrial.....	11,518,366	49%
<b>Total Incentive Expense</b> .....	<b>\$ 23,676,667</b>	<b>100%</b>

<sup>a</sup> DR = demand response

<sup>b</sup> EE = energy efficiency

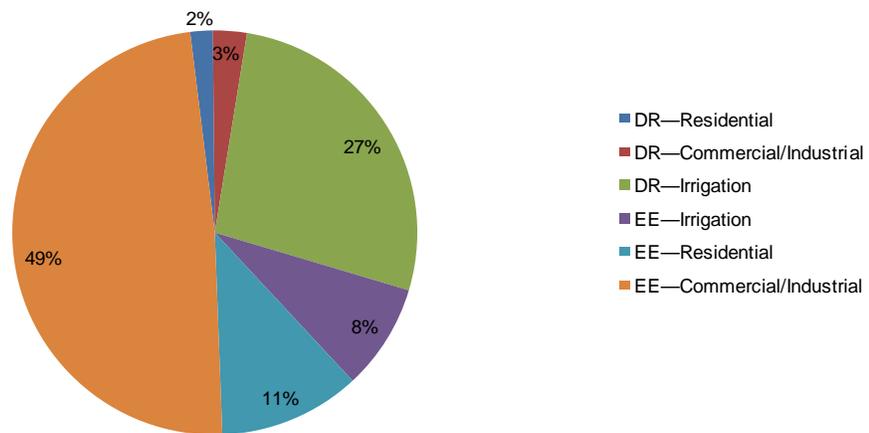


Figure 9. 2016 DSM program incentives by segment and sector

## Marketing

Idaho Power used a variety of marketing, public relations, and research in 2016 to improve communication with its customers. Idaho Power takes advantage of all types of media and marketing. Owned media (social, website, newsletters) and paid media (advertising, sponsorships) allow Idaho Power to control content. Earned unpaid media (news outlets, Idaho Power's *News Briefs* sent to reporters, third-party publications, and television news appearances) gives Idaho Power access to an audience through other channels. Though Idaho Power has less control of the content with earned unpaid media, the value is established from the third-party endorsement.

The following describes a selection of the methods, approaches, and tactics used by Idaho Power to engage with customers regarding energy efficiency, along with their results.

### All Sectors

#### Social Media

Approximately 17 percent of the company's total social media content promoted energy efficiency in 2016, a significant increase from 8 percent in 2015. Idaho Power distributed more than 200 messages about energy efficiency throughout the year via Facebook, Twitter, LinkedIn, and Instagram. Idaho Power also enjoyed the benefit from many energy efficiency-related organic posts on social media outlets. An organic post is one that originates from the customer.

In 2016, Idaho Power continued its *#TipTuesday* posts on Facebook and Twitter, a tactic launched in late 2015. *#TipTuesday* posts provide Idaho Power's Facebook and Twitter followers with a new energy efficiency tip or program information every Tuesday of the year. The posts use photos, when applicable, and include the hashtag *#TipTuesday* so the tips can be categorized together and easily searched by social media users. The company also posted information about several energy efficiency programs, sponsorships, and events on its social media pages.

## Website

Idaho Power tracked the number of page views to the main energy efficiency pages—also known as landing pages—on the company’s website. In 2016, the company’s energy efficiency homepage received 34,938 page views; 74,984 page views on the residential landing page; 7,748 page views on the business landing page; and 1,829 page views on the irrigation landing page. The company uses Google Analytics to analyze web activity. Google’s definition of page views is the total number of pages viewed, with repeated views of a single page being counted.

## Bill Inserts

A January bill insert was sent to 371,600 customers with winter energy-saving tips. In February, 373,189 customers received a bill insert promoting Idaho Power’s **empowered** community.

Other program-specific bill inserts were also sent throughout the year. Information about those can be found in each program later in this report.

## Print

Idaho Power updated the look and content of its print collateral, including a brochure and information card that provides a description of each energy efficiency program offering.

## Public Relations

Public relations supported energy efficiency programs and activities through multiple channels: *Connections*, a monthly customer newsletter distributed in approximately 420,000 monthly bills and available online; *News Briefs*, a weekly email of interesting news items sent to all media in the company’s service area; pitching and participating in news stories; KTVB (Boise/Twin Falls) and KPVI (Pocatello/Blackfoot) monthly energy-efficiency news segments; news releases and events (such as check presentations).

In 2016, the October and April issues of *Connections* were devoted to energy efficiency. The cover story of the March issue of *Connections* highlighted a customer who applied energy efficient measures on the job, by participating in Idaho Power’s Commercial and Industrial Energy Efficiency Program, and at home. Other public relations activities are noted later in this report.

## Staff

NEEA and Idaho Power staff held regular meetings throughout 2016 to coordinate, collaborate, and facilitate marketing. Monthly meetings were held via conference call, and meetings in person occurred in July and August in Portland, and September and November in Boise. All marketing activities are reviewed each month for progress, results, and collaborative opportunities.

To build marketing networks and to learn what works in other regions, Idaho Power staff attended the Chartwell Marketing and Communications Conference in March in Atlanta, the NEEA Efficiency Exchange in April in Coeur d’Alene, and the E Source Utility Marketing Executive Council and E Source Forum held in September in Denver.

## Residential

Idaho Power ran a multi-faceted advertising campaign in the spring (March and April) and fall (September and October) to raise awareness of Idaho Power's energy efficiency programs for residential customers, and to demonstrate that saving energy doesn't have to be challenging. These campaigns included radio, television, newspaper advertisements (ads), digital ads, Facebook ads, *News Briefs* sent to the media, the *Connections* newsletter, and Idaho Power's website to reach a variety of demographics. In 2016, the company added a Smart-saver Pledge to the campaign to engage and encourage customers to make an energy-saving behavior change.

Figure 10 is an example of the campaign materials in 2016.



Figure 10. 2016 energy efficiency awareness campaign

The goals of the campaign are to raise awareness of the programs collectively rather than by individual program; use a variety of methods to reach various customer demographics; use all the methods in the same month to increase customer exposure to the message; and to let customers know they have options when it comes to saving energy. Messaging focused on many ways to create an energy-efficient home with Energy Savings Made Easy as a central theme, illustrating how easy energy efficiency can be with Idaho Power's help. The campaign was awarded second place in the category of Best Ad Campaign for an Investor-owned Utility at the E Source Utility Ad Awards.

Outside of the campaign, Idaho Power also deployed a number of marketing tactics to promote energy saving tips and the company's energy efficiency programs throughout the year. Results of the campaign and other marketing tactics are included below.

### Television

Idaho Power used network television advertising for the spring and fall campaign. The campaign focused on primetime and news programming that reaches the highest percentage of the target market, adults age 35 to 64. Results of the spots were provided for the three major markets—Boise, Pocatello, and Twin Falls.

During the spring campaign, 95 percent of customers in Idaho Power's target audience viewing network television were exposed to the commercial. Targeted customers in Boise saw the ad an average of

13 times, while targeted customers in Pocatello and Twin Falls each saw the ad an average of 12 times. During the fall campaign, 95 percent of targeted customers saw the commercial. Targeted customers in Boise saw the ad an average of 13 times, 18 times in Pocatello, and 12 times in Twin Falls.

## **Radio**

As part of its spring and fall campaign, Idaho Power ran 30-second radio spots on major commercial radio stations, Spanish speaking radio stations, and National Public Radio (NPR) stations in the service area. The commercial stations that ran the spots had a variety of station formats to obtain optimum reach, including classic rock, news/talk, country, adult alternative, adult contemporary, and classic hits. The message was targeted toward adults ages 35 to 64 throughout Idaho Power's service area.

Results of the spots were provided for the three major markets: Boise, Pocatello and Twin Falls. During the spring campaign, the spots reached 55 percent of the target audience in Boise and 60 percent of the target audience in Pocatello and Twin Falls. The target audience in Boise was exposed to the ad approximately nine times, 17 times in Pocatello, and 15 times in Twin Falls. During the fall campaign, the spots reached 60 percent of the target audience in all three major markets. The target audience was exposed to the message eight times in Boise and 16 times in both Pocatello and Twin Falls during the fall campaign.

In summary, Idaho Power ran 2,616 radio spots during the spring campaign and 2,590 spots during the fall campaign, totaling 5,206 radio spots in 2016.

In April and October, these 30-second spots also ran with accompanying visual banner ads on Pandora internet radio accessed by mobile and web-based devices. In April, records show 1,416,990 impressions and 2,427 banner clicks to the Idaho Power residential energy efficiency web page. October yielded 1,430,376 impressions and 2,058 banner clicks. Impressions are defined as the number of times the ad was displayed, regardless of the media type.

## **Print**

As part of the spring and fall campaign, print advertising ran in the major daily and weekly newspapers throughout the service area. The ads conveyed individual energy efficiency programs or tips to customers, such as using insulation to keep cool air in and hot air out in summer. The ads were scheduled for 1,902,246 impressions in the spring and 2,087,983 impressions in the fall.

## **Social Media**

Idaho Power Facebook ads reached 242,224 people and received 3,238,288 impressions and 11,399 clicks to the Idaho Power website during the spring campaign. The company also initially placed a video ad on Instagram, but discontinued the ad a few days later due to low views and click-through rates, and reallocated those funds to Facebook. During the fall campaign, the company reached 223,280 people, and the ad resulted in 1,918,264 impressions and 10,883 clicks to the Idaho Power website.

Throughout the year, Idaho Power also used Facebook boosts for various programs. A boosted post resembles a traditional Facebook post, but, for a fee, Facebook promotes the post higher in users'

News Feeds, increasing the likelihood that the targeted audience will see it. Boosting posts can help increase audience engagement and get more people interacting with the content.

**Pledge**

In 2016, Idaho Power launched a new offering, the Smart-saver Pledge (pledge), to encourage customers in Idaho to make an energy saving behavior change. Customers were asked to commit to making an energy-saving behavior change for 21 days, choosing from one of the following: turn thermostat down 1 to 3 degrees; wash full loads of laundry in cold water and hang dry when possible; register for myAccount, and review your energy use once a week; have a “no electronics” night once a week; and use the crockpot or barbeque once a week instead of the stove. In return, pledge participants were entered to win an ENERGY STAR® electric appliance. The pledge was primarily promoted through a bill insert that went to 367,221 customers, social media, *News Briefs*, the October issue of *Connections*, and television news segments on KTVB and KPVI.



Figure 11. The 2016 the Smart-saver Pledge bill insert

Idaho Power received 937 pledges throughout the pledge period and hundreds of additional pledges after the pledge ended. The company also received numerous positive notes from customers about the pledge and their energy habits. The company felt the participants were highly engaged and that the results were generally positive, providing good information for continuing the pledge in future years.

Customers were asked to complete a follow-up survey as part of the pledge. In return, participants were entered to win one \$100 cash prize. Four hundred and eight customers responded to the follow-up survey. Highlights include the following:

- Ninety-six percent of respondents fulfilled all 21 days of their pledge.
- Of respondents who answered the question regarding whether they would continue their energy-saving changes, all but one respondent plans to continue with the energy saving changes since the pledge ended.
- Fifty-four percent of respondents indicated they were “very likely” to seek out additional ways to save energy.
- After taking the pledge, just over 97 percent of respondents are “somewhat likely” or “very likely” to participate in an Idaho Power energy efficiency program.

A copy of the full survey results can be found in *Supplement 2: Evaluation*.

## Campaign Results

The response to the spring and fall Energy Savings Made Easy campaign was measured using Idaho Power’s **empowered** community, an on-line panel of over 1,000 customers asked to share perceptions and feedback on a variety of topics each month. The following 2016 spring campaign survey results were obtained from 254 community members who hadn’t participated in the 2015 campaign survey:

- Forty-four percent of respondents remember seeing or hearing one of the ads.
- Fifty percent of respondents recalled the television ads, the highest rate of recall.
- Eighty-six percent of respondents indicated they are “very likely” or “somewhat likely” to make energy-saving changes in their home after seeing the ads.
- Eighty-three percent are “very interested” or “somewhat interested” in more information about energy savings programs.
- Eighty-two percent of the respondents who recalled seeing or hearing the ads felt positive about them.

A copy of the results of the study is located in *Supplement 2: Evaluation*.

## Energy-Saving Improvements Survey

In early 2016, Idaho Power used its **empowered** community to measure customer’s planned energy-saving improvements and their motivation for making changes to their home. Key findings include the following:

- Nearly 74 percent of respondents were “somewhat” or “very likely” to make energy-saving improvements to their home in the next two to three years. The most common improvement is lighting, followed by windows, appliances, insulation, and other.
- The primary motivator for making energy-saving improvements is to save money.
- The biggest barriers to making energy-saving improvements are cost or already making improvements to the home, followed by the perception that these improvements are not needed.
- Financial incentives and free products and services are the top motivators for customers to participate in an Idaho Power energy-saving program.

A copy of the results of the study is located in *Supplement 2: Evaluation*.

## **Commercial and Industrial**

In mid-2016, Idaho Power renamed the offerings under the overall Commercial and Industrial Energy Efficiency Program to better describe that the program offers customers financial incentives for New Construction, Custom Projects, and Retrofits. The company redesigned much of the program’s marketing materials, and began marketing these offerings, along with Flex Peak, as a single entity with something for every business customer. Marketing activities were targeted toward business customers, architects, engineers, and other design professionals.

### **Airport Advertising**

Idaho Power expanded its use of airport signage in 2016. Each year, three million people travel through the Boise Airport. Fifty-nine percent of travelers have made purchasing decisions for their companies in the past year. To reach the business customer, Idaho Power placed two backlit display ads. One ad is located at the baggage claim and the other rotates throughout the airport display boards based on availability. Idaho Power also purchased digital network ads which played 10-second Idaho Power video clips on 15 television screens throughout the terminal as part of a three-minute advertising loop. The videos played an estimated 216,000 times per month.

### **Print**

Several print ads ran in 2016, promoting the Commercial and Industrial Energy Efficiency Program. Ads ran in Alaska Airline’s *Horizon Air Magazine*, Building Owners and Managers Association (BOMA) membership directory and symposium program, American Institute of Architects Idaho Chapter membership directory, Business Insider, Grow Smart Awards event program. The company also placed an ad in the *Idaho Business Review* as part of the publication’s Top Projects Awards that congratulated the 10 companies that had the most energy savings throughout the year.

Revision and updating of the Commercial and Industrial Energy Efficiency Program brochure, business card, and industry specific energy efficiency tip brochures also began in 2016.

## Bill Insert

In August, a bill insert promoting Idaho Power's Commercial and Industrial Energy Efficiency Program was included in 39,742 business customers' bills highlighting how Idaho Power's incentives can save customers money.

## Newsletters

Idaho Power promotes energy efficiency and its programs through the company's *Energy@Work* newsletter. Written for small- and medium-sized business customers, Idaho Power published this newsletter in May and September 2016. Content included customer success stories and information on training opportunities, energy efficiency programs, electric vehicles, reduced wattage T-8 lightbulbs, the water supply optimization cohort (WSOC), and more.

Idaho Power also sends an email newsletter, *Energy Insights*, quarterly to large industrial customers. Topics included how businesses use energy, Idaho Power's environmental efforts, energy efficiency success stories, LED advantages, power quality devices, and more.

## Public Relations

Idaho Power provides public relations support to commercial and industrial customers who want to publicize the work they have done to become more energy efficient. Upon request, Idaho Power creates large-format checks that are used for media events and/or board meetings. Idaho Power will continue to assist customers with public relations opportunities by creating certificates for display within the building and having an Idaho Power representative speak at press events, if requested.

## Sponsorships

Idaho Power's Commercial and Industrial Energy Efficiency Program supports a number of associations and events, including sponsoring the Grow Smart awards, Top Projects Awards, BOMA symposium, American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Technical Conference, and the Idaho Energy and Green Building Conference.

Idaho Power sponsored the BOMA Commercial Real Estate Symposium February 9, in Boise. Idaho Power Vice President of Customer Operations, Vern Porter, spoke about why energy efficiency makes good business sense, how Idaho Power's programs can help businesses save energy and money, and provided an example of a recent energy efficiency project and a reminder about the importance of putting down your phone in the car to Just Drive.

Idaho Power and NEEA were also major sponsors of the Idaho Energy and Green Building Conference, and had two members on the planning committee. The conference, held November 1 and 2 at The Wyndham Garden Boise Airport Hotel, provided four training tracks on energy efficiency and green building, and attracted over 100 participants. The conference targeted policy makers, developers, architects, code officials, engineers, energy professionals, and industrial plant managers and operators.

## Irrigation

See the Irrigation Efficiency Rewards section for 2016 irrigation-related marketing activities.

## 2017 Marketing Activities

In 2017, the Idaho Power marketing department plans on several approaches to reach and educate customers: updating the Residential Energy Efficiency Awareness Campaign, developing new Commercial and Industrial Energy Efficiency ads, and enhancing the company website.

The marketing team will refresh the Residential Energy Efficiency Awareness Campaign with new ads that promote different programs and tips. However, the campaign will continue to use the Energy Savings Made Easy theme and cartoon artwork that has resonated with customers. The team will also continue exploring a consistent look and feel for all residential program materials, and consider the potential for email marketing.

A new ad campaign will be implemented for the Commercial and Industrial Energy Efficiency Program. The campaign features former program participants and iconic local landscapes to capture the readers' attention. The ads will speak to small to large businesses, and show that saving energy and money is for everyone. Several of the customers in the ad campaign will be featured in videos about businesses that took advantage of Idaho Power's incentives and the resulting benefits. The ads will be placed in business and association publications, and event programs.

Idaho Power will also move toward a consistent look and feel for marketing materials for business customers. The company will update the remaining industry-specific energy efficiency tip brochures, and may add new industries and inserts highlighting the incentives available for each industry. Customer representatives will use these brochures on customer visits, and the company will consider mailing them to targeted customers.

The company will continue to support various organizations and programs, including the Intermountain Building Operators Association, Building Operators Certification, Center for Advanced Energy Studies Industrial Assessment Center, and more. Idaho Power will market the organizations' services during customer site visits and at technical training workshops and provide discounted registration when appropriate.

Additionally, the company will consider an ad campaign similar to the new Commercial and Industrial Energy Efficiency Program campaign for its irrigation programs.

Idaho Power will also redesign its website to an adaptive framework, including updating navigation for a better customer experience. The company's interactive approach, which began with myAccount in 2015, and saw additional user improvements in 2016, is scheduled for completion in 2017. Idaho Power's new adaptive site will enhance navigation to make energy efficiency program information easier to find. An adaptive website recognizes the device accessing the website and automatically responds or adapts to the dimensions of that device (e.g., a smart phone).

## Cost-Effectiveness

In 2016, most of Idaho Power's energy-efficiency programs were cost-effective, except the Fridge and Freezer Recycling Program, Home Improvement Program and the weatherization programs for income-qualified customers.

The Fridge and Freezer Recycling Program has a UC of 0.92 and TRC of 1.31. In November 2015, the program vendor JACO Environmental, Inc. (JACO), entered receivership and ceased operations. Idaho Power then contracted with Appliance Recycling Center of America (ARCA) and re-launched the program in June 2016. Due to the mid-year launch, the company had forecasted that participation would be at 1,000 units, and the program would likely not be cost-effective from the UC perspective but would be cost-effective from the TRC perspective. This was discussed with the EEAG in February 2016. When considering individual measures within the program, both freezers and refrigerators fail the UC test with a ratio of 0.79 and 0.91 respectively. However, both freezers and refrigerators pass the TRC. However, by allowing the less cost-effective freezers into the program, it increase overall participation and increases the program cost-effectiveness by spreading the portion of the fixed administrative costs across more units.

The Home Improvement Program has a UC of 2.54, TRC of 0.60 and PCT of 0.80. The RTF reduced savings for single-family home weatherization projects in 2015. With the changes, average savings estimates per project for both 2015 and 2016 were just under 50 percent of 2014 projects. These new savings were a result of the nearly 18-month RTF process to calibrate residential savings models. Additionally, in early 2016, the RTF finished calibrating the savings models for multifamily weatherization. These lower savings as well as the DSM avoided costs from the 2015 IRP further reduces the TRC and PCT of the program. Idaho Power analyzed ways to modify the program to improve the cost-effectiveness, but the company concluded that the program would remain not cost-effective. At the November EEAG meeting, the company presented the non-cost-effective aspects of the Home Improvement Program, the result of the company's analysis, and informed EEAG of the company's plan to end the program in 2017.

WAQC had a TRC of 0.65 and a UC ratio of 0.73, and Weatherization Solutions for Eligible Customers had a TRC of 0.70 and a UC ratio of 0.59. The programs showed increased savings and increased cost-effectiveness ratios over 2015. Idaho Power performed a billing analysis of the 2013–2014 weatherization projects from both WAQC and Weatherization Solutions for Eligible Customers. The billing analysis was needed to reflect the increased replacement of forced-air electric resistance heat systems with efficient heat pump systems.

Eleven individual measures in various programs are shown to not be cost-effective from either the UC or TRC perspective. These measures will be discontinued, analyzed for additional NEBs, modified to increase potential per-unit savings, or monitored to examine their impact on the specific program's overall cost-effectiveness.

Table 6. Cost-effectiveness summary by program

Program/Sector	UC	TRC	Ratepayer Impact Measure (RIM)	PCT
Easy Savings .....	1.69	2.04	0.55	n/a
Educational Distributions.....	3.63	6.33	0.65	n/a
Energy Efficient Lighting .....	4.27	2.52	0.68	3.17
Energy House Calls .....	2.11	2.75	0.56	n/a
ENERGY STAR ® Homes Northwest .....	1.79	1.00	0.63	1.46
Fridge and Freezer Recycling Program .....	0.92	1.31	0.43	n/a
Heating & Cooling Efficiency Program .....	2.33	1.26	0.71	1.76
Home Improvement Program.....	2.54	0.60	0.64	0.80
Multifamily Energy Savings Program .....	1.43	2.55	0.51	n/a
Rebate Advantage .....	3.89	3.33	0.62	6.45
Simple Steps, Smart Savings.....	2.40	1.33	0.61	2.13
Weatherization Assistance for Qualified Customers ..	0.73	0.65	0.41	n/a
Weatherization Solutions for Eligible Customers.....	0.59	0.70	0.36	n/a
<b>Residential Energy Efficiency Sector</b>	<b>2.74</b>	<b>2.36</b>	<b>0.63</b>	<b>4.10</b>
Commercial and Industrial Energy Efficiency Program				
Custom Projects.....	5.26	2.86	1.44	1.92
New Construction.....	4.40	3.07	0.96	3.19
Retrofits.....	3.83	2.64	0.93	2.83
<b>Commercial/Industrial Energy Efficiency Sector *</b>	<b>4.67</b>	<b>2.81</b>	<b>1.19</b>	<b>2.31</b>
Irrigation Efficiency.....	4.95	3.21	1.34	2.78
<b>Irrigation Energy Efficiency Sector **</b>	<b>5.00</b>	<b>3.17</b>	<b>1.35</b>	<b>2.73</b>
<b>Energy Efficiency Portfolio</b>	<b>3.58</b>	<b>2.56</b>	<b>0.95</b>	<b>2.93</b>

\* Commercial/Industrial Energy Efficiency Sector cost-effectiveness ratios include savings and participant costs from Green Motors projects.

\*\* Irrigation Energy Efficiency Sector cost-effectiveness ratios include savings and participant costs from Green Motors projects.

Details on the cost-effectiveness assumptions and data are included in *Supplement 1: Cost-Effectiveness*.

## Customer Satisfaction

Based on surveys conducted in 2015, Idaho Power ranked fifth out of seven utilities included in the west region midsize segment of the J.D. Power and Associates *2016 Electric Utility Business Customer Satisfaction Study*. Forty-one percent of the business customer respondents in this study indicated they were aware of Idaho Power's energy efficiency programs, and those customers were more satisfied with Idaho Power than customers who are unaware of the programs.

Based on surveys conducted in the last six months of 2015 and the first six months of 2016, Idaho Power ranked third out of 13 utilities included in the west region midsize segment of the J.D. Power and Associates *2016 Electric Utility Residential Customer Satisfaction Study*. Forty-nine percent of the residential respondents in this study indicated they were aware of Idaho Power's energy efficiency programs, and those customers were more satisfied with Idaho Power than customers who are unaware of the programs.

Idaho Power employs Burke, Inc., an independent, third-party research vendor, to conduct quarterly customer relationship surveys to measure the overall customer relationship and satisfaction with Idaho Power. The Burke Customer Relationship Survey measures the satisfaction of a number of aspects of the customer's relationship with Idaho Power, including energy efficiency at a very high level. However, it is not the intent of this survey to measure all aspects of energy efficiency programs offered by Idaho Power.

The 2016 results of Idaho Power's customer relationship survey showed an increase in overall satisfaction from the previous year. Sixty-five percent of customers indicated their needs were met or exceeded by Idaho Power encouraging energy efficiency among its customers.

Figure 12 depicts the annual change in the percent of customers who indicated Idaho Power met or exceeded their needs concerning energy efficiency efforts encouraged by Idaho Power. In 2016, offering energy efficiency programs was one of the overall top five attributes with a positive change in the Burke Customer Relationship Survey.

In 2016, offering energy efficiency programs was one of the overall top five attributes with a positive change in the Burke Customer Relationship Survey. Three questions related to energy efficiency programs in the general relationship survey continued in the 2016 survey: 1) Have you participated in any of Idaho Power's energy efficiency programs? 2) Which energy efficiency program did you participate in? and 3) Overall, how satisfied are you with the energy efficiency program? In 2016, 44 percent of the survey respondents across all sectors indicated they participated in at least one Idaho Power energy efficiency program, and 93 percent were "very" or "somewhat" satisfied with the program they participated in.

Idaho Power will not survey most energy efficiency program participants annually. This is due primarily to a concern of over-surveying program participants and because the measures and specifics of most program designs do not change annually. To ensure meaningful research in the future, Idaho Power will conduct program research periodically (every two to three years), unless there have been major program changes.

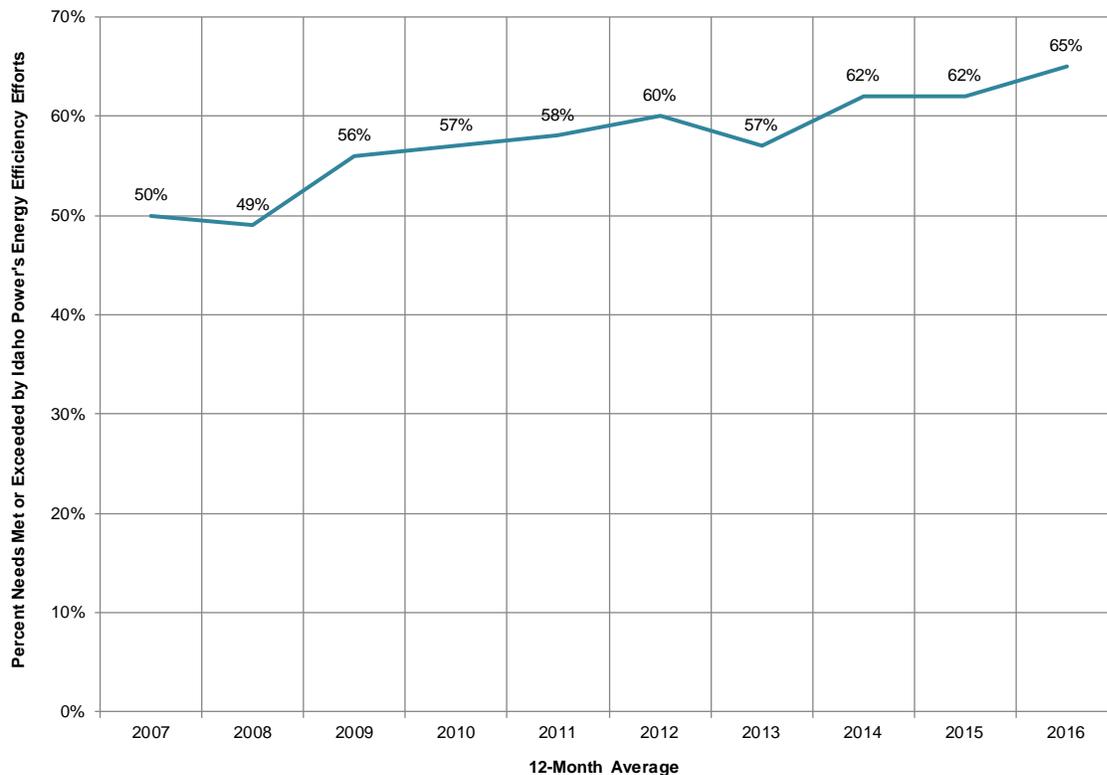


Figure 12. Customers' needs "met" or "exceeded" (percent), 2007–2016

In 2015, Idaho Power created the **empowered** community, an on-line community of residential customers, to measure customer perceptions on a variety of company-related topics, including energy efficiency. Recruiting for the community is conducted annually primarily through billing inserts and mailed postcards. The community has just over 1,000 active members. The **empowered** community includes customers from across Idaho Power's service area. Idaho Power sends out at least one survey per month to active members. Energy efficiency-related survey topics in 2016 included likelihood to install energy-saving improvements, recall of the spring 2016 energy efficiency marketing campaign, energy-efficient lighting, an engagement survey on air conditioning efficiency, thermostatic shower shut-off valves, an engagement survey on using energy-efficient cooking methods and holiday lighting. The average response rate for surveys conducted with the online community is 61.3 percent.

Results of these studies are included in *Supplement 2: Evaluation*.

## Evaluations

In 2016, Idaho Power contracted with Leidos Engineering (Leidos) to conduct four program impact evaluations and two program process evaluations. Impact evaluations were performed for the Retrofit (Easy Upgrades), New Construction (Building Efficiency), Rebate Advantage, and Irrigation Efficiency Rewards programs. Process evaluations were performed for the Rebate Advantage and Irrigation Efficiency Rewards programs. CLEAResult, conducted impact evaluations of the A/C Cool Credit, and Flex Peak programs' 2016 demand response events.

Throughout 2016, Idaho Power administered several surveys regarding energy efficiency programs to measure customer satisfaction. Some surveys were administered by a third-party contractor; other surveys were administered by Idaho Power either through traditional means or through the company's **empowered** community on-line survey.

Final reports from all evaluations, research, and surveys completed in 2016 and an evaluation schedule is provided in *Supplement 2: Evaluation*.

## Residential Sector Overview

Idaho Power's residential sector consists of over 444,431 customers. In 2016, the residential sector's number of customers increased by 8,329, an increase of 1.9 percent from 2015. The residential sector represents 43 percent of Idaho Power's actual total electricity usage and 35 percent of overall revenue in 2016.

Table 7 shows a summary of 2016 participants, costs, and savings from the residential energy efficiency programs.

Table 7. 2016 residential program summary

Program	Participants	Total Cost		Savings	
		Utility	Resource	Annual Energy (kWh)	Peak Demand (MW)
<b>Demand Response</b>					
A/C Cool Credit .....	28,315 homes	\$ 1,103,295	\$ 1,103,295	n/a	34
<b>Total</b> .....		<b>\$ 1,103,295</b>	<b>\$ 1,103,295</b>	<b>n/a</b>	<b>34</b>
<b>Energy Efficiency</b>					
Easy Savings .....	2,001 kits	\$127,587	127,587	402,961	
Educational Distributions .....	67,065 kits/lightbulbs	2,392,884	2,392,884	15,149,605	
Energy Efficient Lighting .....	1,442,561 lightbulbs	3,080,708	10,770,703	21,093,813	
Energy House Calls .....	375 homes	206,437	206,437	509,859	
ENERGY STAR® Homes Northwest .....	110 homes	142,158	297,518	150,282	
Fridge and Freezer Recycling Program (See ya later, refrigerator®) .....	1,539 refrigerators/freezers	257,916	257,916	632,186	
Heating & Cooling Efficiency Program .....	486 projects	594,913	1,404,625	1,113,574	
Home Energy Audit .....	539 homes	289,812	289,812	207,249	
Home Improvement Program .....	482 homes	324,024	1,685,301	500,280	
Multifamily Energy Savings Program .....	3 projects	59,046	59,046	149,760	
Oregon Residential Weatherization .....	7 homes	3,930	5,900	2,847	
Rebate Advantage .....	66 homes	111,050	148,142	411,272	
Shade Tree Project .....	2,070 trees	76,642	76,642	n/a	
Simple Steps, Smart Savings .....	7,880 appliances/ showerheads	153,784	379,752	577,320	
Weatherization Assistance for Qualified Customers ...	246 homes/non-profits	1,289,809	1,934,415	746,162	
Weatherization Solutions for Eligible Customers .....	232 homes	1,323,793	1,323,793	621,653	
<b>Total</b> .....		<b>\$10,434,493</b>	<b>\$21,360,473</b>	<b>42,268,823</b>	<b>34</b>

### Notes:

See Appendix 3 for notes on methodology and column definitions.

Totals may not add up due to rounding.

In 2016, the company added two new residential programs and reintroduced or modified others. The Multifamily Energy Savings Program was added in March, the ESK program launched in May, and the Fridge and Freezer Recycling program was re-introduced in June. The Home Energy Audits program was extended to customers with non-electric heat sources and a smart thermostat incentive was added to the Heating and Cooling Efficiency (H&CE) Program. Additionally, the residential team supported a Drying Rack Pilot Project.

Idaho Power conducts the Burke Customer Relationship Survey each year. In 2016, 54 percent of residential survey respondents indicated Idaho Power is meeting or exceeding their needs with information on how to use energy wisely and efficiently.

Sixty-three percent of residential respondents indicated Idaho Power is meeting or exceeding their needs by encouraging energy efficiency with its customers. Forty-eight percent of Idaho Power residential customers surveyed in 2016 indicated Idaho Power is meeting or exceeding their needs in offering energy efficiency programs, and 34 percent of the residential survey respondents indicated they have participated in at least one Idaho Power energy efficiency program. Of the residential survey respondents who have participated in at least one Idaho Power energy efficiency program, 86 percent are “very” or “somewhat” satisfied with the program. In 2016, offering energy efficiency programs was one of the residential top five attributes with a positive change in the Burke Customer Relationship Survey.

Forty-nine percent of the Idaho Power residential customers included in the *2016 J.D. Power and Associates Electric Utility Residential Customer Satisfaction Study* indicated they are familiar with Idaho Power’s energy efficiency programs.

In 2016, the **empowered** community was surveyed regarding customer recall of the energy efficiency marketing campaign, shut-off shower valves, air conditioning efficiency, energy-efficiency tips, cooking methods, and holiday lighting. Results of these studies are included in *Supplement 2: Evaluation*.

During 2016, presentations to community groups and businesses continued to be an important method of communicating with Idaho Power customers. The company’s customer representatives and community education representatives made hundreds of presentations in communities in Idaho Power’s service area.

## A/C Cool Credit

	2016	2015
<b>Participation and Savings</b>		
Participants (participants)	28,315	29,000
Energy Savings (kWh)	n/a	n/a
Demand Reduction (MW)	34	36
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$632,079	\$659,471
Oregon Energy Efficiency Rider	\$41,833	\$45,825
Idaho Power Funds	\$429,383	\$443,639
Total Program Costs—All Sources	\$1,103,295	\$1,148,935
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	n/a	n/a
Total Resource Levelized Cost (\$/kWh)	n/a	n/a
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	n/a	n/a
Total Resource Benefit/Cost Ratio	n/a	n/a

### Description

Originating in 2003, A/C Cool Credit is a voluntary, dispatchable demand response program for residential customers in Idaho and Oregon. Using communication hardware and software, Idaho Power cycles participants' central air conditioning (A/C) units or heat pumps off and on via a direct load control device installed on the A/C unit. This program enables Idaho Power to reduce system capacity needs during times when summer peak load is high.

Customers' A/C units are controlled using switches that communicate by powerline carrier (PLC). A switch is installed on each customer's A/C unit and allows Idaho Power to cycle the customer's A/C unit during a cycling event.

The cycling season is June 15 through August 15. The maximum number of cycling hours available per season is 60 hours, with a minimum of three cycling events per season. The cycling rate is the percentage of an hour that the A/C unit will be turned off by the switch. For instance, with a 55 percent cycling rate, the switch should be off for 33 minutes of each hour on average, though not 33 consecutive minutes. Instead, the switch turns the A/C unit off for a period of time and then back on for a period of time.

Idaho Power measures the communication levels to validate whether the signal reaches the switches. Interruptions may be caused by a malfunctioning or broken switch, or by an A/C unit that is not powered on. The incentive is \$15 per season, paid as a \$5 bill credit on the July, August, and September bills. The program is not available on weekends or holidays, and the maximum length of an event is four hours.

## Program Activities

In 2016, over 28,000 customers participated in the program. Three cycling events occurred, and all were successfully deployed.

The first event was Thursday, June 30 from 4 p.m. to 7 p.m. Communication levels were between 92.10 percent and 94.78 percent. The cycling rate was 55 percent. The Boise area temperature was 97 degrees, and the Pocatello/Twin Falls area temperature was 97 degrees. The expected demand reduction for the event was 1.02 kilowatt (kW) per participant for Boise and 0.7 kW per participant for Pocatello/Twin Falls for a total reduction of 27.63 MW. Analysis results show a max reduction of 1.11 kW per participant in Boise, 0.84 kW per participant in Pocatello/Twin Falls, and a total reduction of 30.165 MW. This is 109 percent of expected demand reduction.

The second event was Tuesday, July 26 from 4 p.m. to 7 p.m. Communication levels were between 93.6 percent and 93.99 percent. The cycling rate was 55 percent. The Boise area temperature was 99 degrees, and the Pocatello/Twin Falls area temperature was 95 degrees. The expected demand reduction for the event was 1.09 kW per participant for Boise and 0.68 kW per participant for Pocatello/Twin Falls for a total reduction of 29.23 MW. Analysis results show a max reduction of 1.1 kW per participant in Boise and 0.86 kW per participant in Pocatello/Twin Falls for a total reduction of 29.77 MW. This is 102 percent of expected demand reduction.

The third event was Thursday, July 28 from 4 p.m. to 7 p.m. Communication levels were between 93.99 percent and 94.25 percent. The cycling rate was 55 percent. The Boise area temperature was 99 degrees, and the Pocatello/Twin Falls area temperature was 95 degrees. The expected demand reduction for the event was 1.09 kW per participant for Boise and 0.68 kW per participant for Pocatello/Twin Falls for a total reduction of 29.15 MW. Analysis results show a max reduction of 1.13 kW per participant in Boise, 0.93 kW per participant in Pocatello/Twin Falls, and a total reduction of 30.935 MW. This is 106 percent of expected demand reduction.

## Marketing Activities

Per the settlement agreement reached in Idaho Case No. IPC-E-13-14 and Oregon Case No. UM 1653, Idaho Power did not actively market the A/C Cool Credit program in 2016; however, Idaho Power did actively communicate with participants about the program in an effort to maintain participant retention.

Before the cycling season began, Idaho Power sent current participants a postcard reminding them of the program specifics. Idaho Power also attempted to recruit customers who had moved into a home that already had a load control device installed and previous participants who changed residences to a location that may or may not have a load-control device installed. The company used postcards, phone calls, direct-mail letters, and home visits, leaving door hangers for those not home, to recruit these customers. At the end of the summer, a thank-you postcard was sent to program participants.

## Cost-Effectiveness

Idaho Power determines cost-effectiveness for its demand response program under the terms of IPUC Order No. 32923 and OPUC Order No. 13-482. Under the terms of the orders and the settlement, all of Idaho Power's demand response programs were cost-effective for 2016.

The A/C Cool Credit program was dispatched for 9 event hours and achieved a maximum demand reduction of 33.94 MW. The total expense for 2016 was \$1,103,295 and would have remained the same if the program was fully used for 60 hours because there is no variable incentive paid for events beyond the three required events.

In 2016, the cost of operating the three demand response programs was \$9.47 million. Idaho Power estimates that if the three programs were dispatched for the full 60 hours, the total costs would have been approximately \$12.87 million and would have remained cost-effective.

A complete description of Idaho Power cost-effectiveness of its demand response programs is included in *Supplement 1: Cost-effectiveness*.

## Customer Satisfaction and Evaluations

Idaho Power conducted no customer satisfaction surveys for this program in 2016.

Idaho Power contracted with CLEAResult to complete an impact evaluation of the 2016 A/C Cool Credit program. The goal of the evaluation was to estimate demand reduction achieved during three curtailment events and update the existing predictive model to incorporate results from the 2016 curtailment events.

CLEAResult completed analyses of curtailment events held on June 30, July 26, and July 28, each with a three-hour duration. Results of the analyses showed maximum single hour demand reductions of 1.07 kW, 1.06 kW, and 1.11 kW per participant, respectively, for the three events. The results of the curtailment event analyses showed maximum generation-level demand reductions of 33.09, 32.66, and 33.94 MW, respectively, for the three events. The results of the curtailment event analyses showed maximum meter-level demand reductions of 30.2, 29.8, and 30.9 MW, respectively, for the three events.

The results of the impact evaluation demonstrated that Idaho Power's A/C Cool Credit program functions as intended, and if properly maintained, can be relied on to provide dispatchable demand reduction to the electricity grid. Due to the distinct weather patterns between Boise and Pocatello/Twin Falls, each curtailment event analysis included region-specific results. A copy of the report is included in *Supplement 2: Evaluation*.

## 2017 Program and Marketing Strategies

Idaho Power anticipates no program changes in 2017.

Per the terms of the above-mentioned settlement agreements, Idaho Power will not actively promote the A/C Cool Credit program to solicit new participants through marketing but will accept new participants who request to participate, regardless of whether they were previous participants in the program.

Attempts will continue to be made to recruit previous participants who have moved, as well as new customers moving into homes that already have a load control device installed.

## Easy Savings

	2016	2015
<b>Participation and Savings</b>		
Participants (kits)	2,001	2,068
Energy Savings (kWh)	402,961	624,536
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$0	\$0
Oregon Energy Efficiency Rider	\$0	\$0
Idaho Power Funds	\$127,587	\$127,477
Total Program Costs—All Sources	\$127,587	\$127,477
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.035	\$0.021
Total Resource Levelized Cost (\$/kWh)	\$0.035	\$0.021
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	1.69	2.61
Total Resource Benefit/Cost Ratio	2.04	2.95

### Description

The desired outcomes of the Easy Savings program are to educate recipients about saving energy in their homes by using energy wisely, to allow hands-on experience while installing low-cost measures, and to reduce the energy burden for energy assistance/Low Income Home Energy Assistance Program (LIHEAP) recipients.

As a result of IPUC Case No. IPC-E-08-10 under Order Nos. 30722 and 30754, Idaho Power committed to fund energy efficiency education for low-income customers and provide \$125,000 to Community Action Partnership (CAP) agencies in the Idaho Power service area on a prorated basis. These orders specified that Idaho Power provide educational information to customers who heat their homes with electricity provided by Idaho Power in Idaho. This is accomplished through the development and distribution of kits containing low cost, self-install energy efficiency items and educational materials.

Initiated in 2009, the Easy Savings program straddles two calendar years. The LIHEAP program cycle starts annually in November at CAP agencies and follows the federal fiscal calendar, while Idaho Power summarizes activities annually based on a January to December cycle. However, the following report summarizes activities from November 2015 through October 2016 and covers future plans for the 2016 to 2017 program.

### Program Activities

By April 2016, 2,001 kits from the 2015 to 2016 program year were distributed by regional CAP agencies to Idaho Power customers approved to receive LIHEAP benefits on their Idaho Power bills.

Each kit contained the following low-cost and no-cost energy-saving items and a survey:

- Three LED lightbulbs—9 watts (W)
- Set of draft stopping outlet gaskets
- Digital thermometer
- 1.5 gallons per minute (gpm) kitchen faucet aerator
- One single-line indoor clothesline
- LED nightlight with photocell and a set of reminder stickers and magnets
- Easy Savings Quick Start Guide to installation
- Mail-in survey and energy-savings information

### **Marketing Activities**

Idaho Power does not actively market this program.

### **Cost-Effectiveness**

The RTF LED giveaway deemed savings values are used for the three LED lightbulbs included in the kit because the savings are discounted to reflect the potential that all the kit items may not be installed. For the faucet aerator, the RTF does not provide a deemed savings estimate. In Idaho Power's 2012 *Energy Efficiency Potential Study*, AEG estimates the annual faucet aerator savings to be 106 kWh. For the single-line clothes line, Idaho Power used the assumptions for the clothes drying racks and discounted the annual savings to be 68 kWh. For further information regarding the clothes drying rack savings, see the *Cost-Effectiveness* section for the Educational Distributions program.

### **Customer Satisfaction and Evaluations**

A mail-in survey inquiring about installation experiences and actions taken to reduce energy use was included in the 2,001 kits distributed. Returned surveys were analyzed to track the effectiveness and educational impact of the program.

There were 213 completed surveys received from customers describing their experience in installing kit items in their homes during the 2015 to 2016 program. The survey included questions about whether the customer took specific actions to reduce energy use as a result of receiving the kit, as well as questions confirming the installation of kit items.

Over 92 percent of respondents reported they have, or will lower their heat during the day, and just over 90 percent reported they have, or will lower their heat at night. Just over 85 percent of the respondents reported installing at least one of the LEDs provided in the kit. Just over 38 percent of the respondents reported installing the high indoor clothesline and another 30 percent reported they planned to install it.

Overall, survey results showed that almost 39 percent of the respondents installed all kit items. Just over 77 percent of the respondents reported learning a lot about saving energy and money in their home after

completing the *Easy Savings Quick Start Guide*. Copies of the survey and survey results can be found in *Supplement 2: Evaluation*.

During the 2015 to 2016 program, three gift certificates valued at \$100 each were provided by Community Action Partnership Association of Idaho, Inc. (CAPAI), to encourage survey completion. A drawing from all returned surveys was held, and three households won a \$100 gift certificate.

Idaho Power conducted no program evaluations in 2016.

### **2016 to 2017 Program and Marketing Strategies**

For the 2016 to 2017 program period, Idaho Power sent checks totaling \$125,000 in October to the five Idaho regional CAP agencies. Each agency signed a Memorandum of Understanding (MOU) agreeing to use 30 percent of the agency's allotment to cover expenses for administering the program at their agency. The 30 percent includes the provision for an agency certified energy educator to inform kit recipients about installation techniques and energy efficiency information.

CAP agencies ordered 2,470 kits in October 2016, and received them from the vendor in November. These kits, which include five LED lightbulbs and an indoor clothesline, will be distributed to customers throughout the 2016 to 2017 LIHEAP season.

Upon completion of kit distribution and receipt of corresponding surveys, Idaho Power and CAPAI will consider program changes for the future.

## Educational Distributions

	2016	2015
<b>Participation and Savings</b>		
Participants (kits/lightbulbs)	67,065	28,197
Energy Savings (kWh)	15,149,605	1,669,495
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$2,334,206	\$432,185
Oregon Energy Efficiency Rider	\$56,164	\$0
Idaho Power Funds	\$2,514	\$0
Total Program Costs—All Sources	\$2,392,884	\$432,185
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.016	\$0.026
Total Resource Levelized Cost (\$/kWh)	\$0.016	\$0.026
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	3.63	2.05
Total Resource Benefit/Cost Ratio	6.33	2.60

### Description

Designated as a specific program in 2015, the Educational Distributions effort is administered through the Residential Energy Efficiency Education Initiative and seeks to use low-cost and no-cost channels to deliver energy efficiency items with energy savings directly to customers. As with the initiative, the goal for these distributions is to drive behavior change and create awareness of and demand for energy efficiency programs in Idaho Power's service area.

Items selected for distribution have an initial cost-effectiveness analysis that indicates the installed measure is either currently cost-effective or is expected to be cost-effective in the near future. Typically, selected items have additional benefits beyond traditional energy savings, such as educating customers about energy efficiency, expediting the opportunity for customers to experience newer technology, or allowing Idaho Power to gather data or validate potential energy savings resulting from behavior change.

Idaho Power recognizes that behavioral measures and programs require appropriate education and guidance to optimize savings and will plan education accordingly. Items may be distributed at events, presentations, through direct-mail, or home visits conducted by customer representatives.

#### **Drying Rack Pilot Project**

Idaho Power distributed drying racks to determine whether customers can comfortably shift about 25 percent of their clothes drying from an automatic dryer to a drying rack.

#### **Energy-Saving Kits**

Idaho Power knows that managing household energy use can be a challenge. To help make it easier for families, Idaho Power works with a kit vendor to provide two versions of free ESKs—one for homes

with electric water heaters and one for homes with alternate-source water heaters. Customers enroll online at [idahopower.com/save2day](http://idahopower.com/save2day), by calling 800-465-6045, or by returning a postcard. Kits are sent directly to the customer's home.

Each ESK contains nine LED lightbulbs—six 60-watt equivalent lightbulbs, three 45-watt equivalent lightbulbs, a digital thermometer (to check refrigerator, freezer and water temperatures), a shower timer, a water flow-rate test bag, an LED night light and educational materials. In addition, the kit for homes with electric water heaters contains a high-efficiency showerhead and three faucet aerators.



Figure 13. Ad for Idaho Power residential customers to order a 2016 ESK

### ***LED Lightbulbs as Giveaways***

LED lightbulbs are a welcome and effective way to connect Idaho Power with customers, and to begin productive conversations around energy efficiency. Idaho Power field staff and energy efficiency program managers seek opportunities to educate customers about LEDs, and to offer customers a free lightbulb to use immediately in their own homes.

### ***Student Energy Efficiency Kit Program***

The Student Energy Efficiency Kit (SEEK) program provides fourth- to sixth-grade students in schools in Idaho Power's service area with quality, age-appropriate instruction regarding the wise use of electricity. Each child who participates receives an energy efficiency kit. The products in the kit are selected specifically to encourage energy savings at home and engage families in activities that support and reinforce the concepts taught at school.

Once a class enrolls in the program, teachers receive curriculum and supporting materials. Students receive classroom study materials, a workbook, and a take-home kit containing three LED lightbulbs, a high-efficiency showerhead, an LED nightlight, a furnace filter alarm, a digital thermometer for measuring water, refrigerator and freezer temperatures, a water flow-rate test bag, and a shower timer. At the conclusion of the program, students and teachers return feedback to the vendor indicating how the program was received and which measures have been installed. The vendor uses this feedback to provide a comprehensive program summary report showing program results and savings.

Unlike other residential programs offered by Idaho Power, SEEK results are reported on a school-year basis.

### **Program Activities**

On February 8, 2016, Idaho Power filed a request with the OPUC seeking authority to implement the Educational Distributions program in Oregon. The company received approval of Oregon Schedule 71 on March 9, 2016.

#### ***Drying Rack Pilot Project***

Idaho Power gave away approximately 1,300 drying racks at eight events, primarily in the Treasure Valley and Pocatello areas. In the Boise area, attendees at select 2015 fall events filled out a card expressing interest in receiving a free drying rack. Idaho Power representatives explained the enrollment and distribution process, and enrollment emails were sent early in January 2016. Most participants enrolled online, confirming their eligibility and completing a survey about their current laundry habits. Customer distribution events in Boise and Nampa occurred in late January.

The first Pocatello event was held in Fort Hall in March with a slightly different distribution model—customers were enrolled on-site when they presented a current Idaho Power bill. Idaho Power staff administered the pre-survey verbally to each Fort Hall participant.

The Salmon and Pocatello events followed—again with the on-line enrollment strategy. The remaining drying racks were given to American Falls residents in August using a third distribution model. Participants were not pre-enrolled. Instead, customers reviewed eligibility requirements and signed an agreement confirming their eligibility and committing to take the survey within 24 hours of receiving the drying rack.

Education and information regarding efficient laundry practices was conveyed via the website enrollment tool, the enrollment survey, at each event via a “Ways to Save” card addressing ways to “Lighten Your Laundry Load,” and through follow-up email prompts.

#### ***Energy-Saving Kits***

By the end of 2016, 34,546 kits had been shipped—19,715 kits to homes with electric water heaters and 14,831 to homes with alternate-source water heaters. Kits were distributed to all geographic regions within Idaho Power’s service area, including 33,682 to Idaho residences and 864 to Oregon homes.

#### ***LED Lightbulbs as Giveaways***

Field staff distributed over 8,000 lightbulbs at Spring Home and Garden Shows in Pocatello, Twin Falls, and Boise. Participants in Earth Day Events and employee sustainability fairs in Caldwell, Nampa, and Pocatello received lightbulbs. In Boise at Wells Fargo and Hewlett Packard (HP) World Environment Day events attendees received lightbulbs. Oregon customers received lightbulbs at a St. Alphonsus’s Safety Fair, Platt Electric Days and a Home Depot children’s safety fair. LEDs were also distributed at the Smart Women, Smart Money Conference, West Valley Medical Center employee meetings, Paint the Town™, the Mountain Home Air Force Base, FitOne™ Expo, and through presentations at chambers of commerce and senior centers.

By the end of the year, Idaho Power employees had personally delivered a brief energy efficiency message and distributed 24,913 lightbulbs directly to customers.

### ***SEEK Program***

During the 2015 to 2016 school year, Idaho Power community education representatives actively recruited fourth- to sixth-grade teachers to participate in SEEK. As a result, Resource Action Programs (RAP) delivered 6,305 kits to 219 classrooms in 70 schools within Idaho Power's service area. This resulted in 1,542 MWh of savings.

## **Marketing Activities**

### ***Drying Rack Pilot Project***

In the Boise area, attendees at select 2015 fall events filled out a card expressing interest in receiving a free drying rack. In other areas, flyers, posters, print ads, online calendars and social media marketing boosted participation to the desired levels. The cover story of the October *Connections* featured customers who had participated in the project, and KPVI in Pocatello ran a news story on the distribution of the drying racks.

### ***Energy-Saving Kits***

Marketing efforts included a direct-mail campaign from the kit vendor to about 15,000 customers in May, publicity via television news segments in May and June on KPVI and KTVB, and social media posts. The program was greatly bolstered by unsolicited social media—in one case, a single Facebook post garnered over 10,000 kit requests.

### ***LED Lightbulbs as Giveaways***

In 2016, Idaho Power field staff and energy efficiency program managers continued to seek opportunities to educate customers about LEDs, and offer customers a free LED lightbulb to use immediately in their own homes.

### ***Student Energy Efficiency Kit Program***

During the 2015 to 2016 school year, Idaho Power community education representatives actively recruited fourth- to sixth-grade teachers to participate in SEEK. In addition, community education representatives appeared on both KPVI (September) and KTVB (October) news segments sharing information about the kits.

## **Cost-Effectiveness**

In situations where Idaho Power manages the education and distribution through existing distribution channels, the cost-effectiveness calculations will be based on the actual cost of the items. Conversely, if outside vendors are used to assist with distribution, the cost-effectiveness calculations will include all vendor-related charges.

### ***Drying Rack Pilot Project***

Idaho Power is currently assessing if this is an energy-saving and cost-effective measure to continue in the future. To determine an estimate of the potential savings for the drying rack, Idaho Power used estimates from NEEA's *2011 Residential Building Stock Assessment: Single-Family Characteristics and*

*Energy Use (RBSA).* Based on the Residential Building Stock Assessment (RBSA), study participants in Idaho wash 5.71 loads of laundry per week. Approximately 87.4 percent of those washer loads are dried in a clothes dryer. According to a RTF clothes washer workbook, the baseline dryer uses between 1.36 to 1.27 kWh per load. Using a simple average of these two values, Idaho Power estimates that clothes dryers use approximately 342 kWh per year. However, it must be noted that the NEEA 2014 RBSA Laundry Study estimates that dryers use 805 to 915 kWh per year. For a conservative estimate, Idaho Power kept the 342 kWh per year estimate and assumed that if customers shifted 25 percent of their drying load to a drying rack, they could save at least 85.5 kWh per year.

### ***Energy-Saving Kits***

The RTF provides mail-by-request deemed savings for LED lightbulbs and 1.75 gpm low-flow showerheads. The RTF mail-by-request deemed savings values are discounted to reflect the potential that all of the kit items may not be installed. The LED lightbulbs have a deemed savings value of 10 to 11 kWh per year depending on the lumens of the lightbulb. The 1.75 gpm low-flow showerhead is estimated to save 187 kWh per year. For the faucet aerator, the RTF does not provide a deemed savings estimate. In Idaho Power's 2012 *Energy Efficiency Potential Study*, AEG estimates the annual faucet aerator savings to be 106 kWh. The annual savings for an ESK for a home with an electric water heater is 601 kWh. The annual savings for a kit for a home with a non-electric water heater is 96 kWh.

### ***LED Lightbulbs as Giveaways***

In 2016, Idaho Power used the same savings and assumptions as were used in 2014. For the LED giveaways, Idaho Power used the giveaway deemed savings provided by the RTF. The RTF-deemed annual savings of 9 kWh includes assumptions regarding the installation rate, efficiency levels of the existing equipment, and the location of the installation.

### ***SEEK Program***

The cost-effectiveness analysis for the SEEK offering is based on the savings reported by RAP during the 2015 to 2016 school year. RAP calculated the annual savings based on information collected from the participants' home surveys and the installation rate of the kit items. Questions on the survey included the number of individuals in each home, water-heater fuel type, flow rate of old showerheads, and the wattage of any replaced lightbulbs. The response rate for the survey was nearly 71 percent. The survey gathers information on the efficiency level of the existing measure within the home and which efficient measure is installed. The energy savings will vary for each household based on the measures offered within the kit, the number of items installed, and the existing measure that is replaced. Based on the feedback received from the 2015 to 2016 school year, each kit saved approximately 245 kWh annually per household on average. A copy of the report is included in *Supplement 2: Evaluation*.

## **Customer Satisfaction and Evaluations**

### ***Drying Rack Pilot Project***

When customers enrolled in this pilot, they completed a survey about their current laundry habits. Combined with the post-survey conducted in 2017, the company will analyze the results and determine the potential energy savings of a drying rack. While approximately 1,300 drying racks were distributed in 2016, 2,120 customers completed the pre-survey. Several hundred customers completed the survey, but did not pick up a drying rack

Of customers who own a clothes washer, nearly 35 percent of respondents indicated they have a washer that is less than 5 years old while just over 42 percent of respondents indicated they have a washer that is 5 to 10 years old. Approximately 50 percent of respondents said they own a top-loading clothes washer with a center agitator. Just over 51 percent of respondents wash 3 to 5 loads of laundry each week, while nearly 31 percent of respondents wash 6 to 10 loads of laundry each week.

Of customers who own a clothes dryer, nearly 30 percent of respondents reported that their dryer is less than 5 years old, while nearly 43 percent of respondents indicate their dryer is 5 to 10 years old. Just over 29 percent of respondents said they dry 100 percent of their laundry in the dryer, while nearly 53 percent indicated they dry 75 to 99 percent of their laundry in the dryer. Of customers who indicated they dry some of their clothes outside of a clothes dryer, 72 percent of respondents indicated they hang their clothes to dry indoors. When asked how likely they would shift an additional 25 percent or more of their drying to the drying rack, nearly 72 percent of respondents said “very likely,” while just over 26 percent of respondents said “somewhat likely.” A copy of this report is included in *Supplement 2: Evaluation*.

At pickup events, customers were engaged and grateful, tweeting and sharing Facebook posts to let their friends and family know what they were doing.



Figure 14. Customer picking up his drying rack, 2016

Other customers sent emails: “Thank you for the clothes drying rack. I have already used it after picking it up on Saturday at 5 Mile and Franklin. The people were very kind and cheerful and all was organized well. Just wanted to say thank you”

The following Facebook post was indicative of those posted by a number of customers.



Figure 15. Screenshot showing customer appreciation for the drying rack, 2016

But the best part was when participants began to share their stories.

- One customer emailed saying “My drying rack has been so wonderful. About 99% of my laundry is on it. I bought a second one so I can hang the entire weekly batch. Thank you.”
- Another emailed, “I am using the drying rack right at the moment! I have loved it. I really appreciate receiving it; I know we have saved energy because of it this summer.
- Another stopped by Idaho Power’s booth at the FitOne Expo and raved about her drying rack, stating that she was saving \$20 each month.

Other customers’ stories were featured in the October edition of *Connections*.

### **Energy-Saving Kits**

When customers ordered a kit, they completed a short enrollment survey. Upon receipt of the kit, they were encouraged to return a more in-depth survey to indicate which measures had been installed and how satisfied they were with the ordering process. Results from both surveys are included in Supplement 2: *Evaluation*.

Of the 19,715 electric kits distributed, RAP received 2,790 returned surveys for a response rate of just over 14 percent. Of the 14,831 non-electric kits distributed, RAP received 2,588 returned surveys for a response rate of over 17 percent. The overall response rate was over 15 percent.

Approximately 95 percent of respondents indicated they were “very satisfied” with the kit ordering process with 4 percent indicating they “somewhat satisfied.” Nearly 94 percent of respondents said they were “very likely” to tell a friend or family member to order a kit. While just over 54 percent of respondents said they were not aware of that Idaho Power had energy efficiency programs and incentives prior to receiving their kit, 99 percent said they were either “very likely” or “somewhat likely” to participate in another energy efficiency program.

Customers organically promoted the ESKs through numerous social media posts similar to the one below. This single post generated tremendous buzz, receiving over 3000 shares and generating over 10,000 enrollments.

**Travis Herman**  
August 2 at 8:53am

Free kit from Idaho power that has led light bulbs, a shower head, and other stuff. Free to any Idaho power customer.  
[idahopower.com/save2day](http://idahopower.com/save2day)



Like Share

585

3,038 shares 64 Comments

View previous comments 50 of 64

**Judi Walker** Mine is different! Wish I'd received yours, I could use those aerators!



Like 1 · August 2 at 9:33am

Jim Loosli replied · 6 Replies

**Natalie Burton Meagan Walker**  
Like · August 2 at 9:34am

**John JT Newton Theodore Hornstein**  
Like · August 2 at 9:35am

**John JT Newton**  
Like 1 · August 2 at 9:36am

**Melissa Kalmbach** Definitely ordering when I get home!! Thanks for posting this!  
Like · August 2 at 9:42am

**Sari Poole Holli Hanson, Cindy Lou Dick, Randy Lee Nelson, Chelsea Brice, Ryan Connelly, go get your free kit**  
Like 4 · August 2 at 9:50am

Sari Poole replied · 2 Replies

**Crystal Lindau** Thank you for sharing!  
Like · August 2 at 9:51am

**Randee Le Rooks** Cool  
Like · August 2 at 9:54am

**Sari Poole Travis Dick**  
Like · August 2 at 10:01am

**Jackie Koehler-Olo Andrea Bogard**  
Like · August 2 at 10:26am

**Toni Hodge** I like this. But Idaho Power is also trying to implement a fee to those who wish to get their home off the grid. And they get their excess power to sell at whatever price they want. So wondering if we aren't placating the public just a bit.  
Like 2 · August 2 at 10:29am

Judi Walker replied · 3 Replies

**Cheri Darling-Perata Joel...**we should do this!  
Like 1 · August 2 at 10:34am

Joel Ellenberger replied · 1 Reply

**Jessica Hight Jared Hight**  
Like · August 2 at 11:06am

Jared Hight replied · 1 Reply

**Kiersten Kay Whitehead** Thanks for sharing 😊  
Like · August 2 at 11:14am

**Molly Seaman Mikey...**  
Like · August 2 at 11:16am

**Kiersten Kay Whitehead Brandi Burns**  
Like 1 · August 2 at 11:18am

Figure 16. Screenshot showing customer excitement on Facebook about the Energy-Saving Kits, 2016

Another customer from Midvale reached out to Idaho Power via the website with this message, “After receiving the free package of LED light bulbs you offered, we have since retrofitted our home and shop with all LED light bulbs, and we love the increased brightness. Thank you for prompting us to make these changes. We definitely want to conserve energy and reduce our power bill to boot!”

### **LED Lightbulbs as Giveaways**

Idaho Power conducted no customer satisfaction surveys for this offering in 2016.

Customers at events and presentations continued to readily express appreciation for receiving free LED lightbulbs.

**SEEK Program**

The SEEK program is evaluated annually regarding participant satisfaction. For more details on the SEEK program, view the most recent annual report, *Energy Wise® Program Summary Report* located in *Supplement 2: Evaluation*.

Teachers continued to be pleased with the program. One hundred percent of teachers who completed surveys would recommend the program to other colleagues, and 97 percent would conduct the program again. Student engagement remained high as well—71 percent of student surveys were returned, and 69 percent indicated their families changed the way they used energy as a result of the program. Parents also responded favorably, indicating the program was easy to use, they would like to see it continued in local schools, and they would continue to use the kit items at home after completion of the program.

Some participants posted YouTube videos reviewing their kits and the home activities: [youtube.com/watch?v=0UrhTP4ZKc](https://www.youtube.com/watch?v=0UrhTP4ZKc) and [youtube.com/watch?v=-lyHxacMqvo](https://www.youtube.com/watch?v=-lyHxacMqvo).

**2017 Program and Marketing Strategies*****Drying Rack Pilot Project***

The Drying Rack Project will be fully evaluated and analyzed to determine how effective the drying racks were in producing the desired behavior change, i.e., reducing automatic dryer use by at least 25 percent. If the project results are favorable, the project may be offered again.

***Energy-Saving Kits***

Idaho Power will augment its ESK program with an opportunity to use the basic non-electric water-heating kit as a giveaway, in limited quantities, to garner additional interest and participation at presentations and small events. Promotional materials will be readily available for staff-use at larger events. Social media posts and advertising in the semi-annual *Energy Efficiency Guides, Connections*, and Idaho Power's website will all be used to promote ESKs. Direct and targeted digital marketing campaigns will be considered, as needed, to boost participation with more challenging geographic or demographic populations.

***LED Lightbulbs as Giveaways***

Idaho Power plans to continue to offer LED lightbulbs to customers at community events, presentations, and customer visits.

***Other Educational Distributions***

Idaho Power will continue to look for opportunities to engage customers with new technologies that stress the importance of energy-efficient behaviors at home. Idaho Power is currently evaluating thermostatic shower valves.

**SEEK Program**

Plans for the 2016 to 2017 school year include updating the marketing flyer and developing an electronic marketing piece for distribution to more remote schools and districts. The company will continue to leverage the positive relationships Idaho Power's community education representatives have

within the schools to maintain program participation levels and will heighten visibility to enrollments to add an element of competition amongst the geographic regions. Curriculum will be reviewed for continued relevance to state standards.

## Energy Efficient Lighting

	2016	2015
<b>Participation and Savings</b>		
Participants (lightbulbs)	1,442,561	1,343,255
Energy Savings (kWh)	21,093,813	15,876,117
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$3,009,970	\$1,997,292
Oregon Energy Efficiency Rider	\$63,200	\$60,800
Idaho Power Funds	\$7,538	\$5,291
Total Program Costs—All Sources	\$3,080,708	\$2,063,383
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.014	\$0.013
Total Resource Levelized Cost (\$/kWh)	\$0.049	\$0.028
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	4.27	4.53
Total Resource Benefit/Cost Ratio	2.52	4.23

### Description

Idaho Power and other regional utilities participate in the Simple Steps, Smart Savings™ program, managed by CLEAResult. Idaho Power promotes Simple Steps, Smart Savings offerings to customers in two areas: this lighting program and the appliance promotion program (see the Simple Steps, Smart Savings section of this report).

Initiated in 2002, the Energy Efficient Lighting program follows a markdown model that provides incentives directly to the manufacturers or retailers, with savings passed on to the customer at the point of purchase. The benefits of this model are low administration costs, better availability of products to the customer, and the ability to provide an incentive for specific products. The program goal is to help Idaho Power's Idaho and Oregon residential customers afford to adopt more efficient lighting technology.

ENERGY STAR® lightbulbs, including compact fluorescent lightbulbs (CFL) and LEDs, are a more efficient alternative to standard incandescent and halogen incandescent lightbulbs. Lightbulbs come in a variety of wattages, colors, and styles, including lightbulbs for three-way lights and dimmable fixtures. ENERGY STAR lightbulbs use 70 to 90 percent less energy and last 10 to 25 times longer than traditional incandescent lightbulbs.

Idaho Power pays a flat fee for each kWh savings achieved. The minimum base amount goes directly to buy down the price the product was reduced; the amount applied to administration and marketing varies and can be used for things like retailer promotions. Promotions may include special product placement, additional discounts, and other retail merchandising tactics designed to increase sales.

In addition to managing the program's promotions, CLEAResult is responsible for contracting with retailers and manufacturers, providing marketing materials at the point of purchase, and supporting and training to retailers.

### **Program Activities**

In 2016, LED lightbulbs comprised 59 percent of lightbulb sales each month, an increase from the 32 percent of lightbulb sales in 2015. LED fixtures comprised approximately 5 percent of lighting sales, up from 3 percent of lighting sales in 2015.

Idaho Power continued to participate in the Bonneville Power Administration (BPA) Simple Steps, Smart Savings program focusing on ENERGY STAR CFLs and LEDs and light fixtures.

In 2016, Idaho Power worked with 16 participating retailers, representing 89 individual store locations throughout its service area. Of those participating retailers, 55 percent were smaller grocery, drug, and hardware stores, and the remaining 45 percent are big box retailers.

### **Marketing Activities**

In 2016, CLEAResult and participating Simple Steps, Smart Savings utility partners decided the current logo was outdated and needed a new look. CLEAResult developed several new designs, and the utility partners decided the new logo would have a simple message: Simple + Smart. The logo colors were selected so they would stand out on shelves to help customers identify qualifying products. Throughout the year, the old point-of-purchase pieces were replaced with the new Simple + Smart pieces.

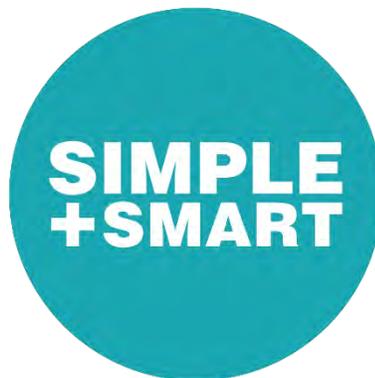


Figure 17. The new 2016 Simple + Smart logo

Several Simple Steps, Smart Savings promotions were conducted through CLEAResult at retail stores in 2016. These promotions generally involved special product placement and signs. CLEAResult staff continued to conduct monthly store visits in 2016 to check on stock, point-of-purchase signs, and displays.

Additional activities in 2016 involved education and marketing. During events where Idaho Power staffed a booth and distributed LED lightbulbs, customers were informed about the importance of using energy-efficient lighting, the quality of LED lightbulbs, and the special pricing available for the Simple Steps, Smart Savings products.

The company continued to host an Energy Efficient Lighting program website; to make available a *Change a Light* program brochure, designed to help customers select the right lightbulb for their needs; and to discuss energy-efficient lighting with customers at community events. Also, ads for the Fridge and Freezer Recycling Program promoted the free LED lightbulb offer. Several #TipTuesday posts on social media throughout the year also focused on energy-efficient lighting.

The Idaho Power winter *Energy Efficiency Guide* included two lighting-related articles, and the summer *Energy Efficiency Guide* included a mini-home assessment where customers could gauge how efficient their behaviors are in areas including, lighting, heating and cooling, and more. During energy efficiency segments in November on the KPVI morning news (broadcast in Pocatello) and on KTVB news (broadcast in Boise and Twin Falls), the discussion focused on energy-efficient holiday lighting, timers, inflatables, and laser lights.

### **Cost-Effectiveness**

In 2016, the Energy Efficient Lighting program provided 50 percent of all energy savings derived from residential energy efficiency customer programs.

In 2016, Idaho Power used the same RTF-deemed savings for both CFLs and LEDs as were used in 2015. For other non-RTF lightbulb types, Idaho Power used the site savings approved by the BPA for the Simple Steps, Smart Savings promotion.

In August 2015, RTF updated and revisited the assumptions for both CFLs and LEDs to account for market changes due to the federal standards compliance. The number of lightbulb types was further reduced to combine three-ways with the general purpose and dimmables. Additionally, the lumen categories were shifted to reflect current consumer trends. Due to the timing of the RTF's update, BPA and CLEAResult did not implement the new savings in the Simple Steps, Smart Savings promotion in 2016.

For detailed cost-effectiveness assumptions, metrics, and sources, see *Supplement 1: Cost-Effectiveness*.

### **Customer Satisfaction and Evaluations**

Idaho Power conducted no customer satisfaction surveys or program evaluations in 2016.

### **2017 Program and Marketing Strategies**

Idaho Power will continue to participate in the Simple Steps, Smart Savings lighting program in 2017 by contracting with CLEAResult, who was awarded the annual BPA implementation contract. New savings will be calculated using the new RTF workbook, version 4.2.

Idaho Power will continue to monitor the number of participating retailers and geographic spread of these retailers, and to develop on-line promotions that allow customers to access promotional pricing regardless of location.

CLEAResult will continue to manage marketing at retailers, including point-of-purchase signs, special product placement, and displays. The program specialist and customer representatives will continue to staff educational events to promote the importance of using energy-efficient lighting.

## Energy House Calls

	2016	2015
<b>Participation and Savings</b>		
Participants (homes)	375	362
Energy Savings (kWh)	509,859	754,646
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$188,253	\$194,939
Oregon Energy Efficiency Rider	\$15,815	\$15,057
Idaho Power Funds	\$2,368	\$4,108
Total Program Costs—All Sources	\$206,437	\$214,103
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.029	\$0.020
Total Resource Levelized Cost (\$/kWh)	\$0.029	\$0.020
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	2.11	2.81
Total Resource Benefit/Cost Ratio	2.75	2.96

### Description

Initiated in 2002, the Energy House Calls program gives homeowners of electrically heated manufactured homes an opportunity to reduce electricity use by improving the home's efficiency. Specifically, this program provides free duct-sealing and additional efficiency measures to Idaho Power customers living in Idaho or Oregon who use an electric furnace or heat pump. Participation is limited to one service call per residence.

Services and products offered through the Energy House Calls program include duct testing and sealing according to Performance Tested Comfort System (PTCS) standards set by the RTF and adopted by the BPA; installing up to eight LED lightbulbs; testing the temperature set on the water heater; installing water heater pipe covers when applicable; up to two low-flow showerheads and bathroom faucet aerators; a kitchen faucet aerator; two replacement furnace filters with installation instructions; and energy efficiency educational materials appropriate for manufactured-home occupants.

Idaho Power provides contractor contact information on its website and marketing materials. The customer schedules an appointment directly with one of the certified contractors in their region. The contractor verifies the customer's initial eligibility by testing the home to determine if it qualifies for duct-sealing. Additionally, contractors have been instructed to install LED lightbulbs only in high-use areas of the home and install bathroom aerators and showerheads only if the upgrade can be performed without damage to a customer's existing fixtures.

The actual energy savings and benefits realized by each customer depend on the measures installed and the repairs and/or adjustments made. Although participation in the program is free, a typical cost for a similar service call would be \$400 to \$600, depending on the complexity of the repair and the specific measures installed.

## Program Activities

Since the addition of the direct-install measures in March 2015, there has been a slight increase in participation. In 2016, 375 homes received products and/or services through this program, resulting in 509,859 kWh savings (Figure 18).

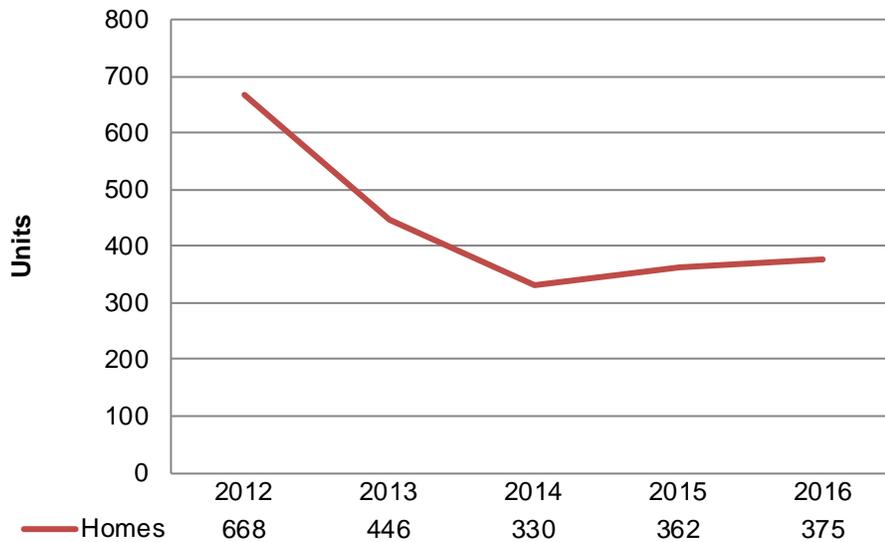


Figure 18. 2012–2016 participation in the Energy House Calls program

Of the total participating homes, 48 percent were located in the Canyon–West Region, 26 percent were located in the Capital Region, and 26 percent were located in the South–East Region.

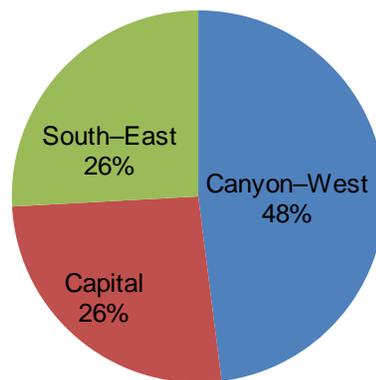


Figure 19. 2016 Energy House Calls participation by region

### **Duct-Sealing**

Each year, a number of customers who apply for the Energy House Calls program cannot be served because the ducts do not require duct-sealing or cannot be sealed, for various reasons. These jobs are billed as a test-only job. Some reasons may be the home is too difficult to seal, or the initial duct blaster test identifies the depressurization with respect to the outdoors is less than 150 cubic feet per minute (CFM) and sealing is not needed. Additionally, if, after sealing the duct work, the contractor is unable to reduce leakage by 50 percent, the contractor will bill the job as a test-only job. Prior to 2015, these test-only jobs were not reported in the overall number of jobs completed for that year, because

there was no kWh savings to report. Because Idaho Power now offers direct-install measures in addition to the duct-sealing component, all homes are reported. While some homes may not have been duct sealed, they all would have had some of the direct-install measures included, which would allow us to report kWh savings for each home. Of the 375 homes that participated in 2016, 52 homes were serviced as test-only.

If a home had a blower door and duct blaster test completed, and it is determined that only duct-sealing is necessary, it will be billed as test and seal. For a home with a crossover duct system that needs replaced in addition to the duct-sealing, it will be charged as an x-over. When a home requires the existing belly return system to be decommissioned and have a new return installed along with the duct-sealing, it will be billed as a complex system. A complex system that also requires the installation of a new crossover and duct-sealing will be billed as a complex system and x-over job.

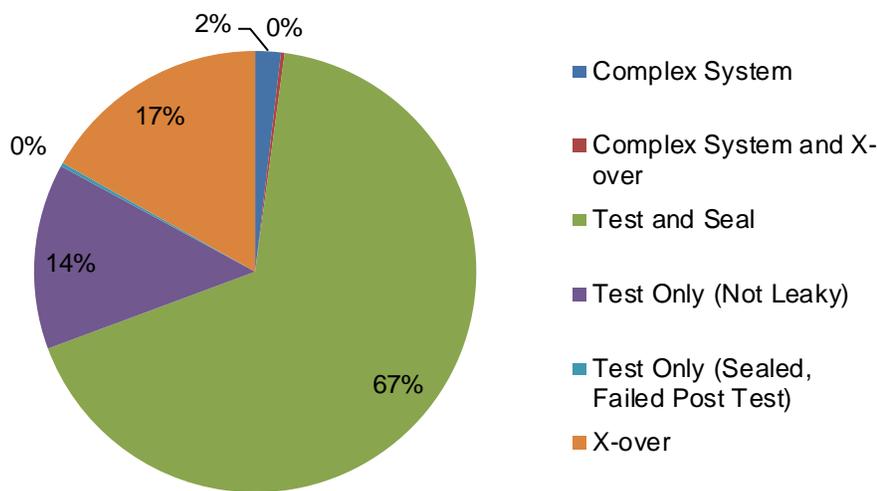


Figure 20. 2016 Energy House Calls participation by job type

**Direct-Install Measures**

In 2016, contractors installed 3,079 LED lightbulbs, 206 showerheads, 351 bathroom aerators and 233 kitchen faucet aerators.

**Marketing Activities**

Idaho Power updated all marketing materials in late 2015 and began using them in 2016 to better highlight the program as a free service for manufactured homes and to capture the attention of the target audience. Idaho Power sent two bill inserts to all residential customers in Idaho and Oregon. The March bill insert was shared with the Rebate Advantage program and sent to 374,301 customers, and the October bill insert promoted only the Energy House Calls program and was sent to 378,955 customers. The company sent postcards in February and September to residents of electrically heated manufactured homes who had not yet participated in the program. Written in English and Spanish, 9,042 postcards were delivered in February and 8,650 in September.

Idaho Power also used Facebook ads in February and July. The February ad reached 40,044 people and resulted in 707 website clicks and an increase in enrollments. The July ad reached 60,288 people and resulted in 1,303 website clicks and an increase in enrollment. In addition, Idaho Power customer

representatives and customer service representatives knowledgeable about the program continued to promote the program to qualified customers.

### **Cost-Effectiveness**

In late 2015, RTF updated savings for performance-based duct-sealing in manufactured homes based on both the Simplified Energy Enthalpy Model (SEEM) calibration and the move toward prescriptive savings only. RTF approved the removal of PTCS requirements for duct-sealing. As a result of these changes, the 2016 deemed savings for duct-sealing are 19 to 60 percent lower than the deemed savings used in 2015.

Savings and a cost-effectiveness analysis for the direct-install measures, including low-flow showerheads, faucet aerators, and LED lightbulbs, were completed using deemed savings from the RTF.

For more detailed information about the cost-effectiveness savings and assumptions, see *Supplement 1: Cost-Effectiveness*.

### **Customer Satisfaction and Evaluations**

Again this year, Idaho Power contractors reported that customers appreciated receiving the program services and direct-install measures, with most positive comments regarding the free LED lightbulbs. Customers continue to be pleased with the program.

To monitor quality assurance (QA) in 2016, third-party verifications were conducted by Momentum, LLC on approximately 5 percent of the 375 participant homes, resulting in 19 home audits. Homes were selected at random. The QA reports indicate customers were pleased with the work sub-contractors completed in their homes. Each home inspection included an on-site visual confirmation that the reported work had been completed. Weather permitting, blower door and duct blaster tests were also conducted to verify the results submitted by the sub-contractor.

### **2017 Program and Marketing Strategies**

Idaho Power will continue to provide free duct-sealing and selected direct-install efficiency measures for all-electric manufactured/mobile homes in its service area.

Idaho Power will continue to include program promotional materials in its bill, to send direct-mail postcards, and to use social media and other proven marketing tactics. Contractors and customer representatives will also distribute door hangers in mobile-home parks and program literature at appropriate events and presentations. Idaho Power will continue to provide Energy House Calls program postcards to CAP agencies for distribution to customers who need assistance but do not qualify to receive weatherization assistance through these agencies.

**ENERGY STAR® Homes Northwest**

	2016	2015
<b>Participation and Savings</b>		
Participants (homes)	110	598
Energy Savings (kWh)	150,282	820,684
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$138,203	\$646,991
Oregon Energy Efficiency Rider	\$1,510	\$2,692
Idaho Power Funds	\$2,445	\$3,990
Total Program Costs—All Sources	\$142,158	\$653,674
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.051	\$0.046
Total Resource Levelized Cost (\$/kWh)	\$0.107	\$0.099
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	1.79	2.10
Total Resource Benefit/Cost Ratio	1.00	1.04

**Description**

Initiated at Idaho Power in 2003, this program targets the lost-opportunity energy savings and summer-demand reduction that is achieved by increasing the efficiency of the residential-building envelope and air-delivery system above current building codes and building practices.

An ENERGY STAR® certified home is a home that has been inspected and tested by an independent, third-party ENERGY STAR Residential Services Network (RESNET)-certified rater working under a RESNET certified provider. The rater is hired by the builder to ensure the stringent ENERGY STAR requirements have been met. In addition to verifying the installation of building components and equipment during on-site inspections, the rater ensures the home passes a blower door test, an air-duct leakage test, and combustion back-draft tests. The ENERGY STAR Homes Northwest residential construction program promotes homes that use electric heat pump technology and are at least 15 percent more energy-efficient than those built to standard Idaho and Oregon code.

ENERGY STAR homes are more efficient, comfortable, and durable than homes constructed to standard building codes. Homes that earn the ENERGY STAR certification must meet six specifications: 1) effective insulation, 2) high-performance windows, 3) air-tight construction and sealed ductwork, 4) energy-efficient lighting, 5) ENERGY STAR qualified appliances, and 6) efficient heating and cooling equipment.

Prior to January 1, 2016, this ENERGY STAR Homes Northwest program was supported by a partnership between Idaho Power and NEEA's Northwest ENERGY STAR Homes to improve and promote the construction of energy-efficient homes using regional program guidelines approved by the United States (US) Environmental Protection Agency (EPA). NEEA has ended their oversight of the regional, single-family Northwest ENERGY STAR Homes program as of January 1, 2016.

All homes throughout the Northwest that were permitted on or after January 1, 2016, are now required to meet national EPA's ENERGY STAR program certification requirements. To receive the Idaho Power program incentive, certified homes in the company's service area must meet the national EPA Version 3, ENERGY STAR Homes requirements and be electrically heated. Additionally, an ENERGY STAR Homes RESNET-certified rater must enter home-related data into the regional AXIS database, which is maintained by NEEA. The AXIS database allows for utility tracking and review. The rater must also generate a Northwest Compliance Report that is consistent with Northwest REM/Rate™ modeling guidelines.

All single-family homes permitted prior to January 1, 2016 and certified by September 30, 2016, were allowed to be certified under the pre-existing NEEA Northwest ENERGY STAR Homes specifications. The regional Northwest ENERGY STAR Homes program retains oversight of multi-family ENERGY STAR Home certifications. To qualify for an Idaho Power Multifamily ENERGY STAR Homes incentive, the rater must certify the homes according to the Northwest Multifamily Builder Option Package (BOP) 1. The rater must enter the multi-family units into the AXIS database for utility tracking and review.

### **Program Activities**

To encourage the construction of ENERGY STAR homes, the program offered qualified builders a \$1,000 incentive per home built to the Northwest ENERGY STAR Single and Multifamily Homes requirements with heat pump technology. Builders who entered their homes in a Parade of Homes were eligible to receive the standard \$1,000 incentive plus an additional \$500 marketing incentive to cover their expenses for ENERGY STAR signage and brochures. Builders benefit by earning the right to use the ENERGY STAR Homes logo and the ENERGY STAR name to promote themselves as an ENERGY STAR qualified builder.

A large part of the program's role in 2016 was to provide support for the building contractors associations (BCA) throughout Idaho Power's service area.

The regional trend toward increased ENERGY STAR certifications for multi-family homes continued in 2016. Out of 110 total incentives paid through Idaho Power's program, 108 were for multi-family dwellings. The other two were for single-family homes located in McCall as part of NEEA's Next Step Home (NSH) pilot program.

### **Marketing Activities**

Idaho Power maintained a strong presence in the building industry by supporting the Idaho Building Contractors Association (IBCA) and several of its local affiliates throughout Idaho Power's service area in 2016. The company presented the Energy Efficient Design and Construction Awards to builders who integrated energy efficiency features in their parade homes at the Building Contractors Association of Southwest Idaho (BCASWI) Parade of Homes awards banquet. In addition, the company participated in the BCASWI builder's expo and the Snake River Valley Building Contractors Association (SRVBCA) builder's expo.

Idaho Power supported Parade of Homes events with full-page ENERGY STAR ads in the Parade of Homes magazines of the following BCAs: The Magic Valley Builders Association (MVBA), the BCASWI, SRVBCA, and the Building Contractors Association of Southeast Idaho (BCASEI). Idaho Power also ran ads in the April 20 *Business Insider* and June 10 *Idaho Business Review* targeting residential contractors. Inserts were added to residential customers' billing statements in April and May informing them of Parade of Homes events in their area. Due to a change in tactics, one bill insert was not used in 2016 as originally planned. Instead, social media and a weekly *News Briefs* article to media were used to promote ENERGY STAR Homes and local Parade of Homes events. These tactics allowed Idaho Power to better target potential participants. In addition, the company sponsored the IBCA annual winter and summer meetings.

The program, in collaboration with NEEA, sponsored a Lunch & Learn course on September 27, 2016. This was a two-hour course presented by energy professionals from Advanced Energy. The purpose of this course was to facilitate a summit of residential real estate professionals to explore solutions leading to the increased market value of energy-efficient and green homes. The 35 professionals in attendance included sales agents, brokers, lenders, home inspectors, and home energy experts.

### **Cost-Effectiveness**

Savings and cost-effectiveness assumptions for the primary multi-family-style home for 2016 were the same compared with 2015. The townhome/multi-family homes in the Boise–Nampa–Caldwell climate zone were cost-effective from a UC and a TRC perspective with the inclusion of the non-energy benefits (NEB). No single-family homes were certified in 2016. Two homes in NEEA's NSH pilot program were completed and incentives were paid in 2016.

For more detailed information about the cost-effectiveness savings and assumptions, see *Supplement 1: Cost-Effectiveness*.

### **Customer Satisfaction and Evaluations**

Idaho Power conducted no customer satisfaction surveys for this program in 2016.

Independent, RESNET-certified program providers verified the rater's input for accuracy and confirmed that program requirements had been met. The provider then certified each home within the AXIS database. Providers performed file and on-site field QA, and offered technical assistance to the raters who had contracted with them. Per RESNET guidelines, the provider performed QA on minimum of 10 percent of files or desk checks and 1 percent QA on-site field QA of all projects. In 2016, the raters reported no issues resulting from the QAs.

### **2017 Program and Marketing Strategies**

Idaho Power will continue to support NEEA's NSH, high-performance specification pilot program. This specification is designed to build homes that are 30 percent more efficient than homes built to standard building codes. Though NEEA is no longer recruiting homes for the pilot, it plans to analyze the data collected through in-home monitoring from all three phases of the pilot. Results are expected by the second quarter of 2017. Homes built during Phase III incorporated NSH minimum requirements,

guidelines, and best practices learned from Phase I and II. When completed, the final version of the NSH specification will be made available to utilities interested in offering NSH incentives. At this time, NEEA does not plan to offer a branded, customer-facing program, based on this specification, to the region.

Idaho Power plans to continue marketing efforts to promote this program to builders and new homebuyers. These marketing efforts include Parade of Homes ads in parade magazines for the BCASWI, SRVBCA, MVBA, and the BCASEI. The company also plans to continue supporting the general events and activities of the IBCA and its local affiliates. Bill inserts, social media, and other advertising will be considered based on past effectiveness.

**Fridge and Freezer Recycling Program (See ya later, refrigerator®)**

	2016	2015
<b>Participation and Savings</b>		
Participants (refrigerators/freezers)	1,539	1,630
Energy Savings (kWh)	632,186	720,208
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$250,535	\$212,674
Oregon Energy Efficiency Rider	\$4,555	\$11,497
Idaho Power Funds	\$2,826	\$3,007
Total Program Costs—All Sources	\$257,916	\$227,179
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.062	\$0.048
Total Resource Levelized Cost (\$/kWh)	\$0.062	\$0.048
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	0.92	1.21
Total Resource Benefit/Cost Ratio	1.31	1.53

**Description**

Since 2009, the Fridge and Freezer Recycling program (formerly See ya later, refrigerator®) achieves energy savings by removing and recycling qualified refrigerators and stand-alone freezers from residential homes throughout Idaho Power's service area.

Idaho Power uses a third-party contractor to provide most services for this program, including customer service and scheduling, unit pickup, unit recycling, and reporting. Applicants enroll online or by phone, and the contractor screens each to confirm the refrigerator or freezer unit under consideration meets these initial program eligibility requirements: residential grade; at least 10 cubic feet (ft<sup>3</sup>) as measured using inside dimensions, but no larger than 30 ft<sup>3</sup>; and in working condition. Idaho Power then screens each applicant to confirm participation eligibility; the program targets older, extra refrigerator and freezer units for maximum savings.

**Program Activities**

In late November 2015, Idaho Power learned the program vendor, JACO had entered into receivership and ceased operations. After multiple internal conversations and consulting with EEAG, Idaho Power reintroduced the program using a new vendor, Appliance Recycling Center of America (ARCA), and a new name, Fridge and Freezer Recycling Program. Idaho Power re-launched the program on June 1, 2016.

Despite temporarily suspending the program and reintroducing the program mid-year, Idaho Power received almost as many participants in 2016 as it did in 2015. Idaho Power was invoiced by JACO for 292 units that it picked up in October and November 2015. The invoices were received after JACO entered into receivership. To allow time to ensure all appliances were disposed of according to the terms

of the contract, Idaho Power paid the invoices in 2016. Because no savings from these units were claimed in 2015, the unit count and savings will be claimed in 2016.

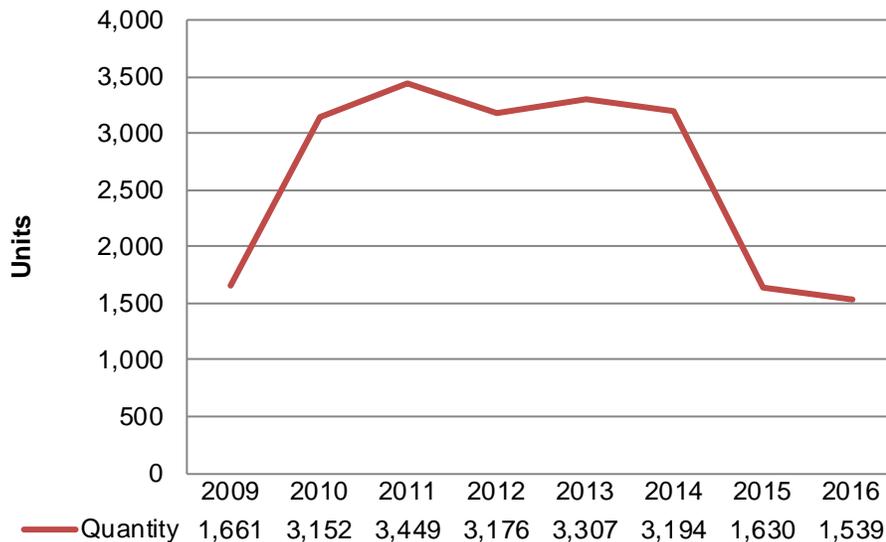


Figure 21. 2009–2016 Fridge and Freezer Recycling Program (See ya later, refrigerator®) participation by year

### Marketing Activities

Idaho Power re-launched the program in June with a new name, new look, and updated web page. The marketing materials used the theme “Retire Your Old Fridge (or Freezer)” with images of a refrigerator retiring on the beach, lake, and Europe among other locations (Figure 22). The new messaging and imagery was chosen to resonate with the program’s primary target audience, customers age 35 to 64, but skewing 55 and older. Idaho Power used bill inserts, direct-mail, Facebook, and earned media to promote the program.



Figure 22. 2016 Fridge and Freezer Recycling Program customer postcard

A *News Briefs* email was sent to reporters in June to alert the media and customers of the re-launch of the program. Bill inserts were sent to 228,961 residential customers in June; 377,345 customers in July; 378,671 customers in August; and 378,243 customers in September. In September, a postcard was

mailed to 15,000 customers thought to have a higher propensity to own a second fridge or freezer. The September issue of *Connections* included an ad for the Fridge and Freezer Recycling Program, and the re-launch of the program was mentioned in further detail in the October issue of *Connections*.

Idaho Power placed a Facebook ad in July targeted to customers ages 35 to 65 or older who have an interest in energy efficiency, home improvement, and do-it-yourself efforts. The ad reached nearly 35,000 customers and resulted in 615 clicks to the Fridge and Freezer Recycling Program web page.

In June, Idaho Power promoted the program and the savings that can occur as a result of recycling an older or second fridge or freezer on Pocatello's KPVI live morning news.

Although appliance retailers also refer customers to the program, Idaho Power does not pursue this marketing channel because the goal of the program is to promote the removal of secondary units rather than replacing existing units.

### **Cost-Effectiveness**

In 2016, Idaho Power used the same savings and assumptions used in 2015. When Idaho Power re-introduced the program in mid-2016, the company forecasted that participation would be at 1,000 units, and the program would likely not be cost-effective from the UC perspective but would be cost-effective from the TRC perspective. Idaho Power discussed this with EEAG in February 2016. When the company filed for program reinstatement in Oregon, the company requested a cost-effectiveness exception as outlined in OPUC Order No. 94-590. The exception was approved by the OPUC in Advice No. 16-07.

Despite the temporary suspension of the program, 1,539 units were recycled in 2016. As a result, the program had a TRC of 1.31 and a UC of 0.92. Had the program been operational for the full 12 months, it is likely that the program would have passed the UC test. In late 2016, RTF revisited and approved new, lower savings for freezer and refrigerator decommissioning, as well as LED bulbs. Idaho Power believes the Fridge and Freezer Recycling Program could be cost-effective in 2017 at the TRC level because of the non-energy benefits associated with decommissioning a refrigerator and freezer. However, the program may not pass the UC test. The company will re-evaluate the program in 2017.

For cost-effectiveness details and assumptions, see *Supplement 1: Cost-Effectiveness*.

### **Customer Satisfaction and Evaluations**

ARCA tracks individual statistics for each unit collected, including information on how customers heard about the program and when customers enrolled. Statistics about the unit collected include the age of the unit, its location on the customer's property, and other data.

The 2016 unit data showed 19 percent of units the program picked up were stand-alone freezers, and 81 percent of the units were refrigerators. Sixty-nine percent of the units were secondary, 27 percent were primary, and 4 percent were unknown. In 2016, 21 percent of the units collected were manufactured between 1965 and 1990, which generally represents the least efficient years of refrigerator

manufacturing. By comparison, in 2015, 34 percent of the units collected through this program were of this vintage.

ARCA and Idaho Power also tracked data related to the marketing effectiveness of the program. Results of customer tracking information indicate 42 percent of customers learned of the program through bill inserts, and 11 percent from a friend or neighbor.

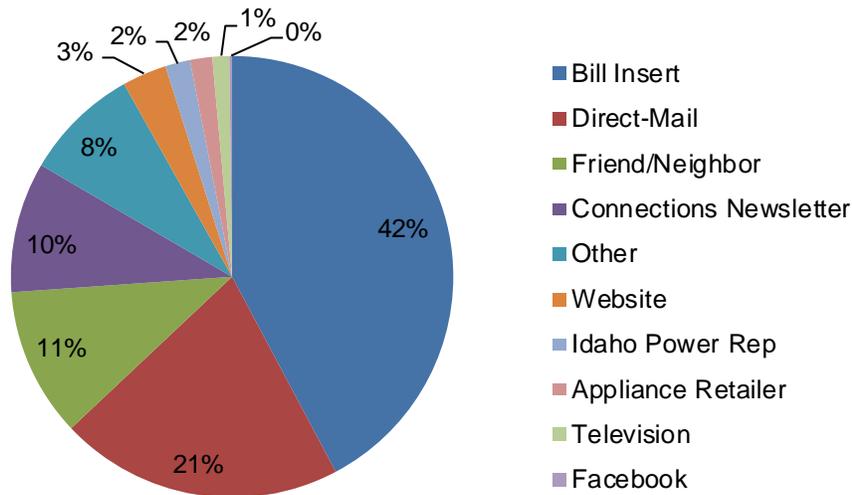


Figure 23. How customers heard about Fridge and Freezer Recycling Program in 2016

Figure 23 indicates ways customers heard about the program. The “Other” category includes sources, such as community events, repeat customers, the truck wrap ad, and unknown sources.

Sixty-seven percent of customers who enrolled used the toll-free telephone number, and 33 percent used the on-line enrollment form.

### 2017 Program and Marketing Strategies

Idaho Power plans to continue the Fridge and Freezer Recycling Program using the current program strategy in 2017, and to monitor its cost-effectiveness for long-term viability.

Idaho Power will continue to use customer information ARCA collected and the surveys from in-house evaluations to target future marketing efforts and increase the effectiveness of marketing. The company plans to use bill inserts, direct-mail, and paid and organic social media posts, and to reach out to customers at community events.

## Heating & Cooling Efficiency Program

	2016	2015
<b>Participation and Savings</b>		
Participants (projects)	486	427
Energy Savings (kWh)	1,113,574	1,502,172
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$545,454	\$583,663
Oregon Energy Efficiency Rider	\$27,184	\$25,186
Idaho Power Funds	\$22,275	\$17,520
Total Program Costs—All Sources	\$594,913	\$626,369
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.036	\$0.028
Total Resource Levelized Cost (\$/kWh)	\$0.085	\$0.092
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	2.33	3.11
Total Resource Benefit/Cost Ratio	1.26	1.05

### Description

The Heating & Cooling Efficiency (H&CE) Program provides incentives to residential customers in Idaho Power's Idaho and Oregon service area for the purchase and proper installation of qualified heating and cooling equipment and services.

Initiated in 2007, the objective of the program is to acquire energy savings by providing customers with energy-efficient options for electric space heating and cooling. Incentive payments are provided to the residential customers for all measures. Three of the measures also include a payment to the installing contractor. The available measures in 2016 include ducted air-source heat pumps, ducted open-loop water-source heat pumps, ductless air-source heat pumps, duct-sealing, whole-house fans (WHF), electronically commutated motors (ECM), evaporative coolers, and smart thermostats.

Idaho Power requires licensed contractors to perform the installation services related to these measures, with the exception of evaporative coolers that can be self-installed. A licensed contractor must also be an Idaho Power participating contractor for the ducted air-source heat pump, ducted open-loop water-source heat pump, ductless air-source heat pump, and duct-sealing measures.

The H&CE Program's list of measures and incentives includes the following:

- Customer incentive for replacing an existing ducted air-source heat pump with a new ducted air-source heat pump is \$250 for a minimum efficiency 8.5 Heating Seasonal Performance Factor (HSPF).

- Customer incentive for replacing an existing oil or propane heating system with a new ducted air-source heat pump is \$400 for a minimum efficiency 8.5 HSPF. Participating homes must be located in areas where natural gas is unavailable.
- Customer incentive for replacing an existing electric forced-air or zonal electric heating system with a new ducted air-source heat pump is \$800 for a minimum efficiency 8.5 HSPF.
- Incentive for customers or builders of new construction installing a ducted air-source heat pump in a new home is \$400 for a minimum efficiency 8.5 HSPF. Participating homes must be located in areas where natural gas is unavailable.
- Customer incentive for replacing an existing ducted air-source heat pump with a new ducted open-loop water-source heat pump is \$500 for a minimum efficiency 3.5 coefficient of performance (COP).
- The customer incentive for replacing an existing electric forced-air or zonal electric, oil, or propane heating system with a new ducted open-loop water-source heat pump is \$1,000 for a minimum efficiency 3.5 COP. Participating homes with oil or propane heating systems must be located in areas where natural gas is unavailable.
- The incentive for customers or builders of new construction installing a ducted open-loop water-source heat pump in a new home is \$1,000 for a minimum efficiency 3.5 COP. Participating homes must be located in areas where natural gas is unavailable.
- The customer incentive for displacing a zonal electric heating system with a new ductless air-source heat pump is \$750.
- The customer incentive for duct-sealing services performed in an existing home with an electric forced-air heating system or a heat pump is \$350.
- The customer incentive for a WHF installed in an existing home with central A/C, zonal cooling, or a heat pump is \$200.
- The customer incentive for replacing a Permanent Split Capacitor (PSC) air handler motor with an ECM in an existing home with oil or propane or natural gas forced-air heat, electric forced-air heat, or a heat pump is \$50.
- The customer incentive for installing an evaporative-cooler is \$150.
- The customer incentive for a smart thermostat installed in an existing home with an electric forced-air furnace or a heat pump is \$75.

Idaho Power uses Honeywell, Inc., a third-party contractor, to review and enter incentive applications into the Idaho Power system. Honeywell reviews and submits incentive applications for Idaho Power payment using a program database portal developed by Idaho Power. This allows Idaho Power to maintain the database within the company's system, which is secure yet accessible to the third-party contractor. They also perform on-site verifications (OSV) and provide technical support to the customer representatives and contractors. Honeywell offers local program and technical assistance to contractors through on-site visits at their businesses.

## Program Activities

Idaho Power began offering one new measure through the program on March 31, 2016. The measure provided a cash incentive to customers who installed a smart thermostat. During the development stage of this measure, the company provided updates and requested input from EEAG at quarterly meetings. EEAG’s feedback regarding the measure was generally positive. With EEAG’s recommendation, Idaho Power piloted the measure in 2016, and additional recommendations will be considered when the pilot expands.

The expansion of Idaho Power’s network of participating contractors remained a key growth strategy for the program. Idaho Power’s goal is to support contractors currently in the program while adding new contractors. The company held meetings with several prospective contractors to support this strategy, and added 15 new companies to the program as authorized participating contractors in 2016.

To qualify to participate in this program, a contractor must first complete the required training regarding program guidelines and technical information on HVAC equipment. Idaho Power held 13 of these training sessions for contractors in 2016.

The 2016 Heating and Cooling Efficiency Program paid incentives are listed in Table 8.

Table 8. H&CE Program incentives paid in 2016 Program incentives paid in 2016

Incentive Measure	2016 Project Quantity
Ducted Air-Source Heat Pump.....	169
Ducted Open-Loop Water-Source Heat Pump.....	17
Ductless Heat Pump .....	150
Evaporative Cooler.....	22
Whole-House Fan .....	19
Electronically Commutated Motor .....	50
Duct-Sealing.....	3
Smart Thermostat .....	56

The customer representatives, Idaho Power’s program contractor, and the program specialist continually engaged with over half of the participating contractors to help them increase participation in the program. Some of the barriers to participation were uncovered anecdotally. One barrier stems from, in many cases, a need for improved technical skills in the HVAC technicians. Employee turnover and a lack of having a repeatable sales process are other barriers addressed. These barriers were addressed by the program specialist through one-on-one discussions with the participating contractors, usually in person. The program has 109 participating contractors therefore much more work will be done in this area.

## Marketing Activities

Idaho Power used multiple marketing methods for its H&CE Program. The company mailed a bill insert to 374,173 residential customers in April and 378,239 residential customers in September. The H&CE Program was also mentioned in the April issue of *Connections*, mailed to all residential customers with

their bill. Several #TipTuesday social media posts throughout 2016 focused on heating- and cooling-related tips. Two versions of a direct-mail postcard were sent to a total of 39,457 residential customers in November. The two versions were used as an A/B test (or a comparative test) to determine which new look resonated best with customers.

On several occasions, Idaho Power marketed the new smart thermostat incentive separate from the overall H&CE Program: on May 23, Idaho Power sent a *News Briefs* article to local media that was picked up by 1310 KLIX in Twin Falls; a May #TipTuesday social media post; the summer *Energy Efficiency Guide*; and the October issue of *Connections*.

In 2016, emphasis on Idaho Power's contractor portal was reduced since it was not being used by contractors and was found to be of lesser value compared to other support tactics, such as ongoing training on the program process and HVAC technical skills for new and existing contractor employees.

### **Cost-Effectiveness**

Idaho Power implemented numerous changes to the H&CE Program measures for 2016 savings. Most changes were related to the measure definitions of heat pumps that were adopted by RTF in 2015.

Savings values for retrofit air source heat pumps were changed in 2015 by RTF to reflect different savings values that result from differing weatherization levels of the homes. The updated measure standard requires that a home's savings be assigned by whether the level of insulation is considered, "good," "fair," or "poor." Because of the quality installation component of the program, the overall condition of the home could be determined through contractor worksheets. Most homes had an insulation level of "fair" or "good" resulting in a slight decrease in savings than would have been seen from the previous measure definition not requiring judgment on the home's overall level of insulation.

For the measure level cost-effectiveness, cost data from RTF was used in lieu of actual project costs reported by customers. RTF costs contain updated baseline information for electric forced-air furnaces and air conditioning systems that was not available through local contractor surveys for 2016.

Air-source heat pumps installed in new construction or installed to replace existing less efficient heat pumps saw their claimed savings for 2016 drop significantly from approximately 2,500 kWh per unit to between 55 to 90 kWh depending on the climate zone. The drop was caused by the increased federal manufacturing standard for split system air source heat pumps in January 2015. This change was the biggest reason savings in the program dropped from 2015 levels while overall program participation increased. The air-source heat pump replacing an existing air-source heat pump measure, as with all heat pump measures in the program, mandates proper equipment commissioning, control setting, and sizing (CCS). CCS allows for an additional claimed savings of between 630 and 1,014 kWh per installed heat pump as deemed by RTF.

RTF geothermal heat pump savings, while specifically designed around closed loop systems, were deemed appropriate by RTF to be applied to open loop heat installations. Idaho Power replaced its previous engineering estimate of savings with the savings from the RTF workbook resulting in an

increase in average retrofit savings of 900 kWh and a decline of 300 kWh in annual savings for new construction situations.

Ductless heat pumps (DHP) continue to be not cost-effective using RTF regional costs rather than prices reported on customer applications. RTF costs were used for 2016 cost-effectiveness analysis because the DHP measure definition was changed to reflect differing heating system performance factors.

The company does not have sufficient cost data from its projects to split out costs by different levels of efficiency.

For more detailed information about the cost-effectiveness savings, sources, calculations, and assumptions, see *Supplement 1: Cost-Effectiveness*.

### **Customer Satisfaction and Evaluations**

Honeywell performed random OSV on 47 (10 percent) of the completed installations in Idaho Power's service area. These OSVs confirmed that the information submitted on the paperwork matched what was installed at customers' sites. Overall, the OSV results were favorable with respect to the contractors' quality of work. The program specialist continues to work with contractors to help them understand the importance of accurate documentation and quality installations.

Idaho Power accessed additional information from other sources. In 2016, NEEA provided two reports with identical content that updated the DHP Initiative. A copy of each is included on the CD accompanying *Supplement 2: Evaluation*. The following are highlights from the reports.

#### ***NEEA Reports E16-334 and E16-337, released July 2016***

NEEA published this fifth Market Progress Evaluation Report (MPER) for the NW Ductless Heat Pump Project (Initiative). The report discusses findings obtained through extensive surveys, interviews, and focus groups comprised of homeowners, utilities, installers, and supply chain actors. The initiative was launched as a pilot in 2008 to demonstrate that DHPs were a viable technology to displace electric resistance heat in existing homes. The report describes the Initiative as well-designed and continuing to have a positive influence on the market. Some of the findings include the indication that interest continues to grow although lack of awareness remains a barrier. Word of mouth continues to be an initial source of information. DHP owners relied on their own research when making their purchasing decision. Financial considerations can be an opportunity or barrier because while DHPs can provide energy savings they can also be seen as expensive. The report provides detailed recommendations for NEEA to consider in the future.

### **2017 Program and Marketing Strategies**

Idaho Power will provide program training to existing and prospective contractors to assist them in meeting program requirements and further their product knowledge. Sessions will be held on-site at contractor businesses and at Idaho Power facilities. Training sessions remain an important part of the program because they create opportunities to invite additional contractors into the program. The sessions also provide refresher training for existing participating contractors, and help them increase their customers' participation while improving the contractors' work quality. An additional dozen other interested companies will be taken through the authorization process by the program specialist.

Developing the existing network of participating contractors remains a key strategy for the program. The performance of the program is substantially dependent on the contractors' abilities to promote and leverage the measures offered. Idaho Power's primary goal in 2017 is to develop contractors currently in the program while adding new contractors. To meet this objective, the program specialist, along with Idaho Power customer representatives, will arrange frequent individual meetings to discuss the program with contractors in 2017.

The 2017 marketing strategy will include several tactics previously used, such as bill inserts, direct-mail, and social media, and will explore using additional tactics to market individual measures and the program as a whole.

## Home Energy Audit

	2016	2015
<b>Participation and Savings</b>		
Participants (homes)	539	351
Energy Savings (kWh)	207,249	136,002
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$278,959	\$192,873
Oregon Energy Efficiency Rider	\$0	\$0
Idaho Power Funds	\$10,853	\$9,084
Total Program Costs—All Sources	\$289,812	\$201,957
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	n/a	n/a
Total Resource Levelized Cost (\$/kWh)	n/a	n/a
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	n/a	n/a
Total Resource Benefit/Cost Ratio	n/a	n/a

### Description

The current Home Energy Audit program is based on the insights gained from the Boise City Home Audit project conducted in 2011 and 2012, as described in the *Demand-Side Management 2012 Annual Report*. In 2014, the audit project became the Home Energy Audit program under Idaho Power's management.

The Home Energy Audit program is an in-home energy evaluation by a certified, third-party home performance specialist (HPS). It is used to identify areas of concern, and to provide specific recommendations to improve the efficiency, comfort, and health of the home. An audit includes a visual inspection of the crawl space and attic, a health and safety inspection, and a blower door test to identify and locate air leaks. In addition to the evaluation, some energy-saving improvements are installed at no additional cost to the customer if appropriate. After the audit is complete, the customer is supplied with a hardcopy or password-protected electronic copy of the HPS's findings and recommendations. Improvements available from Idaho Power include installation of the following:

- Up to 20 efficient lightbulbs (CFLs and LEDs)
- One high-efficiency showerhead
- Pipe insulation from the water heater to the home wall (approximately 3 feet)

To qualify for the Home Energy Audit program, a participant must live in Idaho and be the Idaho Power customer of record for a home. The home must be an existing site built home, and up until 2016, homes had to be all electric. Renters may participate with prior written permission from the landlord. Single-family homes, duplexes, triplexes, and fourplexes qualify, though multi-family homes must have

discrete heating units and meters for each unit. Manufactured homes, new construction, or buildings with more than four units do not qualify.

Participating customers pay \$99 (all-electric homes) or \$149 (other homes: gas, propane or other fuel sources) for the audit and installation of measures, with the remaining cost covered by the Home Energy Audit program. The difference in cost covers the additional testing that is necessary for homes that are not all-electric. These types of energy audits normally cost \$300 or more, not including the select energy saving measures, materials, and labor. The retail cost of the materials installed in each home averages \$145.

### Program Activities

In 2016, this became a fuel-neutral program. This change allows more customers to participate and learn ways to be energy efficient. Even if the space or water heating source in a home is not electric, often there can be many opportunities to use electricity wisely.

Seven HPS companies served the program in 2016. Homes were randomly assigned to the HPSs serving each service area, grouping locations for each HPS to save on travel time and expense. When the program became fuel-neutral, Idaho Power required HPSs who hadn't had previous training in Combustion Appliance Zone (CAZ) testing within the last six months to participate in Idaho Power's CAZ refresher class, or to attend a refresher class offered through another source. Although all HPSs had previous CAZ training, Idaho Power provided a refresher course in February 2016, and all HPSs participated.

In 2016, the program completed 539 energy audits. The average age of participating homes was 34 years old. The homes were built between 1898 and 2015. Home sizes ranged from 288 square feet (ft<sup>2</sup>) to 8,500 ft<sup>2</sup>, with 2,403 ft<sup>2</sup> average home size. Figure 24 depicts the program's reach across Idaho Power's service area, and Figure 25 depicts the space and water heating fuel types.

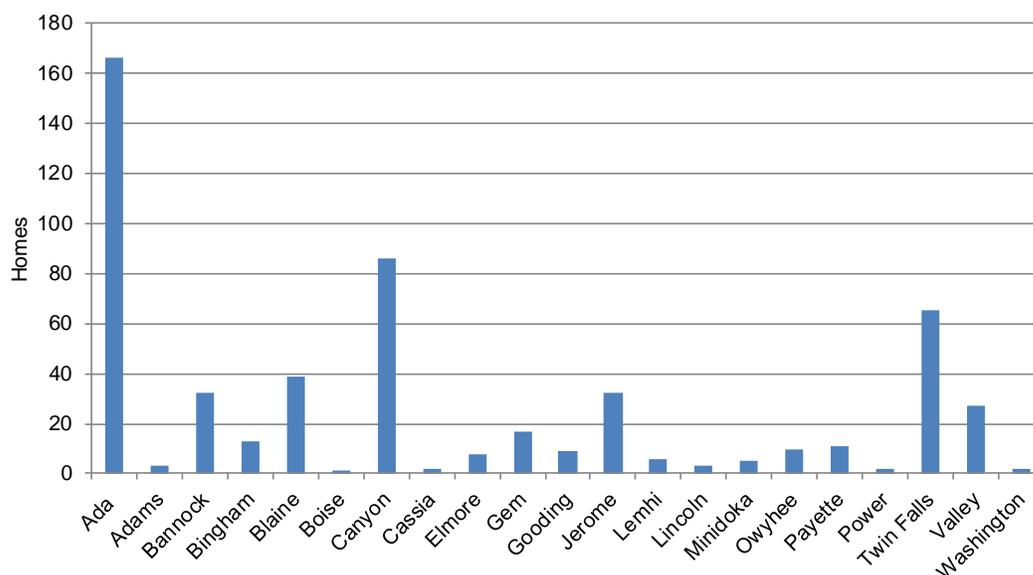


Figure 24. Home Energy Audit summary of participating homes in 2016, by county

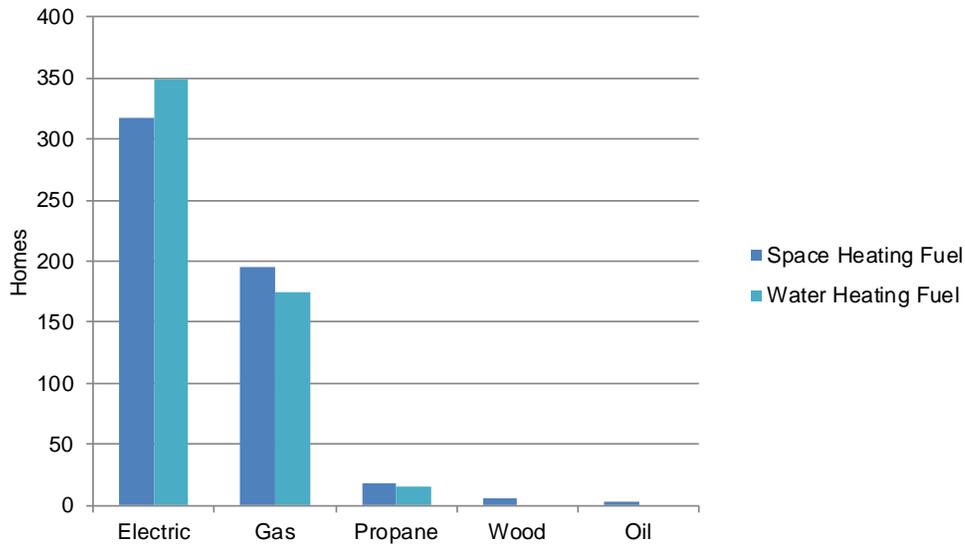


Figure 25. Home Energy Audit summary of space and water heating fuel types, 2016

The HPSs collected information on types and quantities of appliances and lighting in each home. The average number of incandescent lights per home was 21, and the average number of fluorescent or LED lights was 13. When performing an audit, the HPS determined which available measures were appropriate for the home, and, with homeowner approval, those measures were installed. Figure 26 indicates the total quantity of items installed by measure.

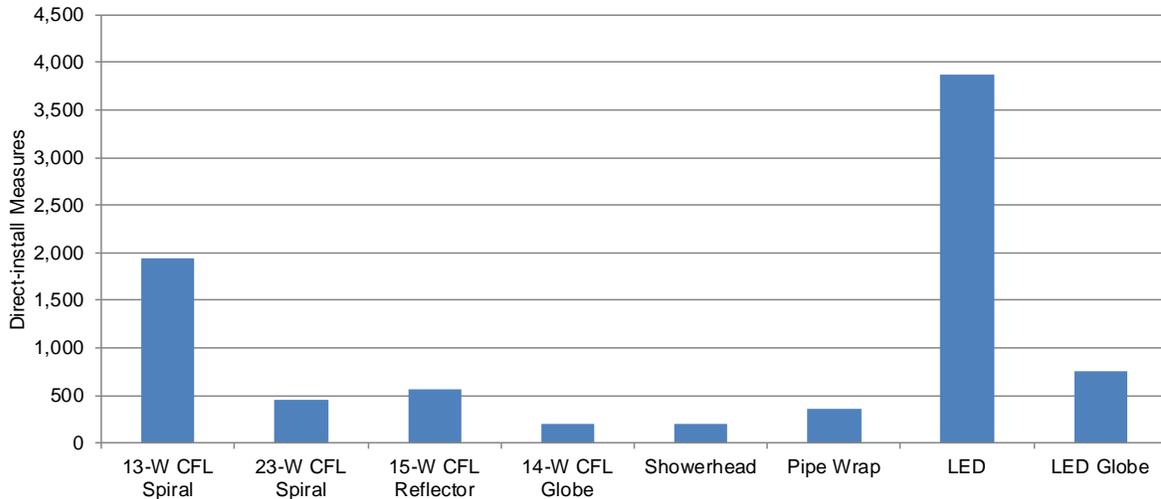


Figure 26. Home Energy Audit measures installed in participating homes in 2016

As Idaho Power’s existing stock of CFLs has been used and the cost of LEDs has come down, all new lightbulb orders are for LEDs. With the exception of the CFL 15-watt reflectors, all lightbulbs being installed by the end of 2016 were LEDs.

The QA goal for the program was inspection of 10 percent of all audits, translating into approximately 53 audits in 2016. Ultimately, 34 QAs were completed in 2016, with all audits passing inspection. The 10 percent goal was unmet in 2016 because it was challenging to find participants willing to allow

the auditor into their home for a 1- to 2-hour period, especially if the participant worked outside the home.

### **Marketing Activities**

In January 2016, all program materials including the website were updated to promote eligibility changes to include all Idaho residential customers, regardless of fuel type. Additionally, an infographic was designed and used online and in social media to provide a visual representation and additional detail on what occurs during the audit.

Idaho Power recruited participants for the program through small batches of 1,000 to 2,000 direct-mail letters. Customers interested in participating were directed to a website for additional information and the on-line application. Those who did not have internet access or were uncomfortable using the on-line application were encouraged to call Idaho Power to apply. A program brochure was added to some mailings, but did not result in an increase in enrollment compared to mailings without the brochure.

In October 2016, Idaho Power partnered with the University of Idaho's Valley County Extension Office to host an energy efficiency workshop in McCall, Idaho. Direct-mail letters were sent to residents, and posters were hung at local businesses inviting the community to attend the evening workshop. Attendees learned how to check their homes for efficiency, how to make improvements, and how to use myAccount. The Home Energy Audit program was emphasized as were various other Idaho Power efficiency programs. For attending, each person was given an LED lightbulb.

Bill inserts were sent to 369,000 residential customers in June and 355,000 residential customers in December. Articles highlighting the Home Energy Audit program were also included in the April and October issues of *Connections*, which is mailed along with the customer's bill.

The Home Energy Audit program was mentioned in the Idaho Power *Winter Energy Efficiency Guide* as a way to improve your home's performance. In addition, the program was the focus of the Idaho Power energy-efficiency segment on the KTVB afternoon news program in March.

Idaho Power used social media, including boosted Facebook posts, throughout 2016 to highlight the Home Energy Audit program. In May, a boosted post targeted to Idaho homeowners ages 35 and older with an interest in home improvement or energy efficiency reached 45,495 people, resulting in 1,745 post engagements (likes, comments and shares). In November and December, Idaho Power used boosted posts targeted to South-East Region customers. These boosted posts reached 44,662 people with 1,229 engagements, 97 shares, and 694 post clicks.

For several months throughout 2016, a short article about the program was also placed in the Pocatello-Chubbuck Chamber of Commerce e-newsletter.

Digital re-targeting advertising was also used to target the South-East Region customers. Customers who visited the Idaho Power website and then moved onto a different website were "followed" by a Home Energy Audits digital ad. Overall, 787,293 impressions were served resulting in 1,993 clicks with a total

click-through rate of 0.25 percent. The total click-through rate was 3.6 times higher than the national average.

### **Cost-Effectiveness**

One of the goals of the Home Energy Audit program is to increase participants' understanding of how their home uses energy and to encourage their participation in Idaho Power's energy efficiency programs. Since the Home Energy Audit program is primarily an educational and marketing program, the company does not apply the traditional cost-effectiveness tests to the program.

For the items installed directly in the homes, Idaho Power used the same assumptions during 2016 as were used in 2015. Idaho Power used RTF savings for direct-install bulbs, which range from 17 to 30 kWh per year. RTF savings for 2.0 gpm showerheads directly installed in a home are 139 to 166 kWh per year. In Idaho Power's *Energy Efficiency Potential Study*, AEG estimates that pipe wraps save 150 kWh per year. Savings for both showerheads and pipe wrap were only counted for homes with electric water heaters.

In 2015 and 2016, the RTF reviewed and updated the savings assumptions for CFLs, LEDs, and showerheads. These new savings will be applied in 2017.

### **Customer Satisfaction and Evaluations**

Throughout 2016, a survey was sent to 482 customers who had participated in the program between October 2015 and September 2016. The purpose of the survey was to assess customers' satisfaction with program enrollment, scheduling, the auditor, the personalized report, and information learned. Participants who supplied an email address on the initial program enrollment form were sent an electronic survey (320 participants); those without an email address were sent a hardcopy of the survey with a postage-paid envelope (162 participants). The response rate was just over 43 percent, with 208 participants responding. Program strengths and areas for improvement were also assessed. Results were reviewed for the program as a whole and for responses related to individual HPSs.

When asked a series of questions about their experience with the program, 96 percent of respondents "strongly agree" or "somewhat agree" they would recommend the program to a friend or relative, and just over 94 percent of respondents "strongly agree" or "somewhat agree" they were satisfied with their overall experience with the program. And, over 97 percent of the respondents indicated it was "very easy" or "somewhat easy" to apply for the program.

Over 34 percent of respondents reported accessing their report online through an email address supplied to Idaho Power on the enrollment application, while over 37 percent reported receiving a paper copy, and 28 percent reported receiving their report both ways. Of those who accessed their report online, nearly 64 percent indicated that accessing the report online was "very easy" or "somewhat easy."

HPSs were rated on a number of attributes including courteousness, professionalism, explanation of work/measurement to be performed, explanation of audit recommendations, and overall experience with the HPS. Respondents rated their HPSs as "good" or "excellent" 93 to 100 percent of the time.

When asked how strongly they agree or disagree with statements about what they learned during the audit process, just over 95 percent of respondents “strongly agree” or “somewhat agree” they were more informed about the energy use in their home. Over 81 percent reported they “strongly agree” or “somewhat agree” they were more informed about energy efficiency programs available through Idaho Power. Just over 89 percent indicated they “strongly agree” or “somewhat agree” they learned what additional no- to low-cost actions they could take.

According to the survey, nearly 48 percent of respondents indicated they visited the Idaho Power website after the audit, just over 50 percent unplugged appliances when not in use, over 33 percent signed up for myAccount, and just over 72 percent shared their experience with relatives and/or friends. Just over 78 percent of the respondents reported they replaced additional incandescent lightbulbs with CFLs or LEDs. Just over 37 percent indicated they serviced their heating equipment, and almost 35 percent serviced cooling equipment. Additional information on the actions respondents indicated they already completed or planned to do within the next year are shown in the survey results included in *Supplement 2: Evaluation*.

Survey participants were asked to identify all of the benefits they experienced from participating in the program. Over 73 percent of respondents indicated the biggest benefit they found in the audit was personal satisfaction, with over 75 percent citing raised awareness of energy use, almost 61 percent citing cost savings, nearly 49 percent citing home improvement, approximately 44 percent citing comfort, and almost 37 percent citing benefit to the environment. When survey participants were asked to identify all of the barriers they encounter when making energy-saving changes in their home, over 77 percent of respondents indicated the biggest barrier was cost. Figure 27 shows participant benefits experienced by category and percent.

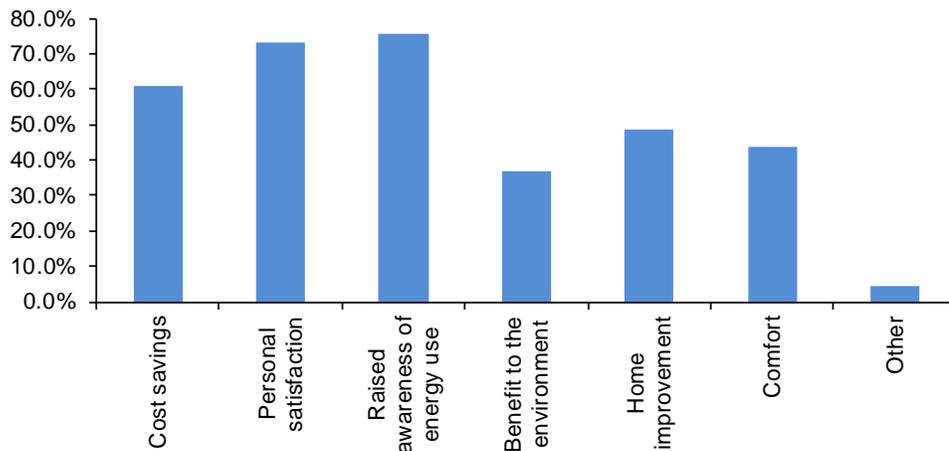


Figure 27. Home Energy Audit program participants' benefits experienced in 2016

Idaho Power conducted no program evaluations in 2016.

### 2017 Program and Marketing Strategies

The 2017 program goal is 500 participants, with approximately half being for all-electric homes and half for homes with other fuel sources for space and water heating. When the Home Energy Audit program

began, the company's goal was to perform QA on 10 percent of the homes audited. The cost of this level of QA was justified to make sure the auditors were complying with the program's specifications. The program is now more established and the QA is verifying that the auditors are meeting and exceeding the requirements. The company believes it is more reasonable to reduce the QA to 5 percent in addition to the online QA and survey results review. Additionally, the company has found it logistically difficult to find 10 percent of the participants who will take the additional time to allow a second visit by a QA auditor.

In 2017, Idaho Power will continue recruiting participants through small batches of direct-mail, social media, advertising, bill inserts and through the use of the trade show booth backdrop at select events. Additional digital advertising may be considered if the program needs to be strategically promoted in specific regions.

## Home Improvement Program

	2016	2015
<b>Participation and Savings</b>		
Participants (homes)	482	408
Energy Savings (kWh)	500,280	303,580
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$309,799	\$259,898
Oregon Energy Efficiency Rider	\$0	\$0
Idaho Power Funds	\$14,225	\$12,611
Total Program Costs—All Sources	\$324,024	\$272,509
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.034	\$0.046
Total Resource Levelized Cost (\$/kWh)	\$0.174	\$0.152
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	2.54	1.91
Total Resource Benefit/Cost Ratio	0.60	0.67

### Description

Since 2008, the Home Improvement Program has offered incentives for upgrading insulation and windows in electrically heated homes/units. To qualify for an incentive under this program, the home must be a single-family home, a multi-family structure with individually metered residential units, or a manufactured home in Idaho Power's service area in Idaho. The home/units must have an electric heating system serving at least 80 percent of the home's conditioned floor area. The heating system can be a permanently installed electric furnace, heat pump, or electric zonal heating system.

### Insulation

Insulation must be professionally installed between conditioned and unconditioned space by an insulation contractor.

- Customer incentives are 15 cents per ft<sup>2</sup> for attic insulation and 50 cents per ft<sup>2</sup> for wall and under-floor insulation for additional insulation professionally installed by Idaho residential customers, multi-family building owners, and property managers in Idaho Power's Idaho service area.
- Existing attic insulation must be an R-20 or less to qualify, and the final R-value must meet the local energy code. Idaho Power's service area includes climate zones 5 and 6, resulting in an R-38 requirement for climate zone 5 and R-49 requirement for climate zone 6.
- The existing insulation level in walls must be R-5 or less, and the final R-value must be R-19 or fill the cavity.
- The existing insulation level under floors must be R-5 or less, and the final R-value must be R-30 or fill the cavity.

**Windows**

Windows must be professionally installed.

- Customer incentives are \$2.50 per ft<sup>2</sup> of window area to Idaho residential customers for installing energy-efficient windows and/or sliding glass doors with a U-factor of 0.30 or lower.
- Pre-existing windows/sliding glass doors must be single- or double-pane aluminum or single-pane wood.
- Customers must use a participating contractor to qualify for the Idaho Power incentive, which is processed by Idaho Power.

**Program Activities**

During 2016, the Home Improvement Program paid incentives on 482 window and insulation upgrades. Attic insulation accounted for 20 percent, under-floor insulation accounted for 9 percent, wall insulation accounted for 2 percent and windows accounted for 69 percent of completed jobs. Both multi-family and single-family homes took advantage of these program incentives.

**Marketing Activities**

In early 2016, Idaho Power developed a new look for all Home Improvement Program marketing materials to better capture the attention of customers, including multi-family building owners, and highlight available incentives. Based on customer feedback, the application form became a part of the updated brochure. The brochure also included a checklist of required documentation to enhance clarification for the customer.

To promote the program, the company ran a series of newspaper ads multiple times during February, March, and September 2016. Idaho Power placed ads in newspapers in rural areas with a higher concentration of electrically heated homes (a program eligibility requirement). The company also sent bill inserts to 361,455 customers in February; 362,473 customers in April; and 364,100 customers in May and a targeted direct-mail letter to 40,000 customers in April and November 2016.

Idaho Power ran Facebook ads in September and reached 86,631 customers, resulting in 10,586 link clicks, 83 likes, 12 shares and had a total cost-per-click of \$0.19. Anything at or under that level is good; the \$0.19 cost-per-click is considered above expectations for a utility company niche product.

In the April energy efficiency issue of *Connections*, the cover story focused on a customer who had participated in the Home Improvement Program and saw a large reduction in her bill since replacing 13 windows in her home. The *Connections* issue and the customer story was promoted through a *News Briefs* item in April.

**Cost-Effectiveness**

In 2015 and 2016, the Home Improvement Program was not cost-effective from the TRC perspective. RTF reduced savings for single-family home weatherization projects between 2013 and 2014, and the reduced savings were updated prior to the 2015 program year. With the changes, average savings

estimates per project were just under 50 percent of 2014 savings levels. These savings estimates were a result of an 18-month RTF process to calibrate residential savings models to billing and housing-characteristic data collected in the northwest, including Idaho, during 2011 as part of the RBSA. As a consequence, the majority of measure combinations in the Home Improvement Program are no longer cost-effective from the TRC perspective--neither is the overall program.

There are several factors that are impacting cost-effectiveness beyond the reduced regional average savings estimates. The few measure combinations that are cost-effective (insulations levels with R-values near zero or existing single-pane windows) are not common in single-family homes. Very little savings from weatherization measures occurs during the summer peak which limits the peak capacity cost-effectiveness benefits in the program.

Home Improvement Program was the only program in Idaho Power's energy efficiency portfolio requiring customer investment where the PCT B/C ratio was less than one at 0.80, which means the customer investment in weatherization on average exceeds the lifetime energy savings benefits, or that for every \$1.00 invested by the customer to participate in the program, the customer only sees a \$0.80 return through bill savings over 45 years.

For more detailed information about the cost-effectiveness calculations and assumptions, see *Supplement 1: Cost-Effectiveness*.

### **Customer Satisfaction and Evaluations**

For QA purposes, third-party contractors performed random reviews of at least 5 percent of all installations completed in the Home Improvement Program. QA contractors verified the correct installation of measures. In addition, the QA contractors assisted and educated the contractors on program requirements. Of the 30 QA inspections completed in 2016, no major issues were reported.

The program incentive application form included an optional question asking customers how they heard about the program. The 482 projects came in on 459 applications. Customers answered the marketing question on 437 applications. The results are as follows:

- 248 respondents (56.8%) heard about the program from a program contractor.
- 114 respondents (26.1%) heard about the program from an Idaho Power bill insert.
- 45 respondents (10.3%) heard about the program from the Idaho Power website.
- 18 respondents (4.1%) received a referral from a friend or acquaintance.
- 4 respondents (.9%) heard about the program from a direct-mail piece.
- 8 respondents (1.8%) heard about the program from a newspaper, online, or television/radio ad.
- 0 respondents (0%) heard about the program from a home improvement show or fair.

## 2017 Program and Marketing Strategies

As reported in the *Demand-Side Management 2015 Annual Report*, the recalibrated savings from the RTF resulted in four of the six measures not being cost-effective from the TRC perspective.

This program was not cost-effective from a TRC perspective in 2015. In 2016, the program was not cost-effective from a TRC or PCT perspective but was cost-effective from the UC perspective.

In 2016, the company evaluated the non-cost-effective measures and the potential impact of those measures on the program's overall cost-effectiveness. Idaho Power first discussed the concerns it had regarding the continued deterioration in cost-effectiveness of the Home Improvement Program with EEAG during the August 30, 2016 EEAG meeting, and Idaho Power committed to presenting its preliminary 2016 cost-effectiveness findings at the November 3, 2016 EEAG meeting.

At the November meeting, the company informed EEAG that the program was not cost-effective in 2016 based on preliminary savings information. The company advised EEAG that under the scenarios it evaluated, the cost-effectiveness of the Home Improvement Program would not improve. The company assured EEAG it would continue to encourage customers through education to continue to upgrade these measures even though an incentive may no longer be offered and asked for suggestions from EEAG members as to how Idaho Power could best sunset the program.

At this meeting, EEAG suggested the company wait until 2017 to end the program to ensure customers had adequate time to benefit from program incentives and look at a more targeted approach for the program.

Idaho Power analyzed different scenarios to modify the program to improve its cost-effectiveness. One scenario was to consider only offering the highest savings measure combinations in only the coldest climate zone (heating zone 3). These areas produce on average less than 5 percent of the projects annually. Under this scenario, the modified program would fail all the cost-effectiveness tests except the PCT.

In another scenario, Idaho Power analyzed offering only those measure combinations closest to being cost-effective; this modified program would only include window replacements in situations where there are existing single pane window, and insulation incentives where the existing home's R-value is essentially zero. Under this scenario, the program would remain not cost-effective under all tests except the UC test which would decrease from 2.54 as the program exists today to 1.42.

Due to the continued lack of cost-effectiveness, Idaho Power ceased marketing the program in the fourth quarter of 2016. The company plans to sunset the Home Improvement Program beginning on June 30, 2017. Customers will have 90 days from the day the job is started to submit their incentive applications, and those customers whose jobs were started on or before June 30, 2017, will qualify for an incentive.

## Multifamily Energy Savings Program

	2016	2015
<b>Participation and Savings</b>		
Participants (projects)	3	n/a
Energy Savings (kWh)	149,760	n/a
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$55,758	n/a
Oregon Energy Efficiency Rider	\$0	n/a
Idaho Power Funds	\$3,288	n/a
Total Program Costs—All Sources	\$59,046	n/a
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.040	n/a
Total Resource Levelized Cost (\$/kWh)	\$0.040	n/a
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	1.43	n/a
Total Resource Benefit/Cost Ratio	2.55	n/a

### Description

The Multifamily Energy Savings Program provides for the direct installation of energy-saving products in electrically heated, multi-family dwellings in Idaho and Oregon. The definition of multi-family dwelling is a building consisting of five or more rental units. The products are: ENERGY STAR® LED lightbulbs, high-efficiency showerheads, kitchen and bathroom faucet aerators, and water heater pipe insulation, and are installed at no cost to the property owner/property manager or the tenant. To ensure energy savings and applicability, each building is pre-approved by the contracted energy efficiency measure installation contractor.

### Program Activities

The program began in March 2016 with a successful pilot project in Pocatello. This was followed by direct install projects in Boise and Twin Falls in September and December respectively. Between all three projects, a total of 196 apartment units received some if not all of the following; ENERGY STAR LED lightbulbs, high-efficiency showerheads, kitchen and bathroom faucet aerators, and water heater pipe insulation.

- Fairway Apartments, Pocatello: 73 units
- Greenbriar Apartments, Boise: 43 units
- Washington Park Apartments, Twin Falls: 80 units

### Marketing Activities

Tenants in participating apartment complexes received a door hanger before the service date informing them that contractors would be entering their home to install energy-saving products. Once installation

was complete, Idaho Power left materials to explain the new energy efficiency measures and to provide contact information should the tenant have any questions.

### **Cost-Effectiveness**

The RTF provides deemed savings for LED lightbulbs and 2.0 gpm low-flow showerheads. The LED lightbulbs have a deemed savings value of 11 to 32 kWh per year depending on the type and lumens of the lightbulb. The 2.0 gpm low-flow showerhead is estimated to save 139 kWh per year. For the faucet aerator and pipe wrap, RTF does not provide a deemed savings estimate. In Idaho Power's 2012 *Energy Efficiency Potential Study*, AEG estimated the annual faucet aerator savings to be 106 kWh and the annual pipe wrap savings to be 150 kWh.

### **Customer Satisfaction and Evaluations**

Idaho Power included a satisfaction survey on the leave behind materials for the Pocatello pilot project. Both an online and mail-in option were offered. The response rate was very low with only six of the 73 residents responding by mailing in the stamped survey cards, no on-line surveys were submitted. These results will be considered with the expansion of this program.

### **2017 Program and Marketing Strategies**

In 2017, Idaho Power plans to expand the program to include a minimum of two, energy-efficient measure direct-installation projects in multi-family dwellings in each of our three regions. The satisfaction survey will be revised and included in 2017 leave behind materials for all projects. Property managers/owners will also be surveyed.

Idaho Power will continue to use informative pre-installation door hangers and post-installation informational marketing pieces. Use of direct-mail will be explored to encourage engagement and participation from property owners/managers, and to increase program visibility.

## Oregon Residential Weatherization

	2016	2015
<b>Participation and Savings</b>		
Participants (audits/projects)	7	19
Energy Savings (kWh)	2,847	11,910
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$0	\$0
Oregon Energy Efficiency Rider	\$3,906	\$5,341
Idaho Power Funds	\$24	\$467
Total Program Costs—All Sources	\$3,930	\$5,808
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.079	\$0.028
Total Resource Levelized Cost (\$/kWh)	\$0.118	\$0.050
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	n/a	n/a
Total Resource Benefit/Cost Ratio	n/a	n/a

### Description

Idaho Power offers free energy audits for electrically heated customer homes within the Oregon service area. This is a program required by Oregon Revised Statute (ORS) 469.633 offered under Oregon Tariff Schedule 78 since 1980. Upon a customer's request, an Idaho Power customer representative visits the home to analyze it for energy efficiency opportunities. An estimate of costs and savings for specific measures is given to the customer. Customers may choose either a cash incentive or a 6.5-percent interest loan for a portion of the costs for weatherization measures.

### Program Activities

Seven customers returned a card from the brochure indicating interest in a home energy audit, weatherization loan, or incentive payment. Seven customers requested audits, three audits met the program requirements and were completed, and three customers did not have electric heat and were advised to contact their heating source supplier for program information. One customer did not move forward with the recommended energy efficiency upgrades. Two incentives were paid.

Idaho Power issued two incentives totaling \$426.44 for 2,847 kWh savings. Both incentives and related savings were for ceiling insulation measures. There were no loans made through this program during 2016.

### Marketing Activities

During May, as required, Idaho Power sent every Oregon residential customer an informational brochure about energy audits and home weatherization financing.

**Cost-Effectiveness**

The Oregon Residential Weatherization program is a statutory program described in Oregon Schedule 78, and includes a cost-effectiveness definition of this program. Pages three and four of the schedule identify the measures determined to be cost-effective and the specified measure life cycles for each. This schedule also includes the cost-effective limit (CEL) for measure lives of seven, 15, 25, and 30 years.

Two savings projects were completed under this program in 2016; both consisted of increasing attic insulation. Combined, the projects' annual energy savings is 2,847 kWh at a levelized TRC of \$0.12 per kWh over the 30-year attic insulation measure life compared to a CEL of \$0.85 per kWh as defined by Oregon Schedule 78.

**Customer Satisfaction and Evaluations**

Idaho Power conducted no customer satisfaction surveys or program evaluations in 2016.

**2017 Program and Marketing Strategies**

Idaho Power will complete requested audits and fulfill all incentives deemed cost-effective and loan applications as required by under Tariff Schedule 78. The company will continue to market the program to customers with a bill insert/brochure in their May bill.

## Rebate Advantage

	2016	2015
<b>Participation and Savings</b>		
Participants (participants)	66	58
Energy Savings (kWh)	411,272	358,683
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$103,056	\$80,243
Oregon Energy Efficiency Rider	\$6,392	\$4,351
Idaho Power Funds	\$1,602	\$843
Total Program Costs—All Sources	\$111,050	\$85,438
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.016	\$0.014
Total Resource Levelized Cost (\$/kWh)	\$0.022	\$0.020
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	3.89	4.54
Total Resource Benefit/Cost Ratio	3.33	3.45

### Description

Initiated in 2003, the Rebate Advantage program helps Idaho Power customers in Idaho and Oregon with the initial costs associated with purchasing a new, energy-efficient, ENERGY STAR® qualified manufactured home. This enables the homebuyer to enjoy the long-term benefit of lower electric bills and greater comfort provided by these homes. The program also provides an incentive to the sales consultants to encourage more sales of ENERGY STAR qualified homes and more discussion of energy efficiency with their customers during the sales process.

In addition to offering financial incentives, the Rebate Advantage program promotes and educates buyers and retailers of manufactured homes about the benefits of owning energy-efficient models. The Northwest Energy Efficient Manufactured (NEEM) housing program establishes quality control (QC) and energy efficiency specifications for qualified homes. NEEM is a consortium of manufacturers and state energy offices in the Northwest. In addition to specifications and quality, NEEM tracks the production and on-site performance of ENERGY STAR qualified manufactured homes.

### Program Activities

Idaho Power residential customers who purchased a new, all-electric, ENERGY STAR qualified manufactured home in 2016, and sited it in Idaho Power's service area were eligible for a \$1,000 incentive through the Rebate Advantage program. Salespersons received \$200 for each qualified home they sold.

During 2016, Idaho Power paid 66 incentives on new manufactured homes, which accounted for 411,272 annual kWh savings.

## Marketing Activities

One bill insert, shared with the Energy House Calls program, was sent to 374,301 customers in Idaho and Oregon in March. A second bill insert and Facebook ads were not used because the program had exceeded its goal, and both techniques identified had limited options to target potential participants and proved less successful than direct dealer support.

Idaho Power continued to support dealerships in 2016 by providing them with Rebate Advantage program brochures, banners, and applications as needed. The program specialist and the customer representatives visited some of these dealerships to distribute materials, promote the program, and answer salespersons' questions.

## Cost-Effectiveness

In 2016, Idaho Power used the same savings and assumptions as were used in 2015. The measures remained cost-effective for 2016.

## Customer Satisfaction and Evaluations

Idaho Power conducted no customer satisfaction surveys for this program in 2016.

In 2016, Idaho Power contracted with Leidos to perform an impact and process evaluation for this program. The impact evaluation found that submitted applications were accurately assigned ex-ante unit energy savings values according to assigned equipment type, cooling zone, and heating zone codes in the tracking database.

Equipment type was determined to vary between ENERGY STAR with electric resistance heating, Eco-Rated with electric resistance heating, and ENERGY STAR with electric heat pump heating. This equipment appeared to be accurately coded in the tracking database (with the exception of two Eco-Rated projects which were assigned "regular" ENERGY STAR savings values). Accuracy of cooling zone and heating zone coding for each project could not be verified due to lack of information about how these codes were assigned. Overall, this impact evaluation found an ex-post savings realization rate that exceeds 100 percent.

The process evaluation found that the program processes in place are effective, efficient, and result in a high degree of accuracy in program tracking.

A copy of the evaluation can be found in *Supplement 2: Evaluation*.

## 2017 Program and Marketing Strategies

Idaho Power plans to distribute a bill insert to Idaho and Oregon customers and will look for additional opportunities to engage potential manufactured home buyers. Idaho Power will also continue to support dealers by providing them with program materials.

## Shade Tree Project

	2016	2015
<b>Participation and Savings</b>		
Participants (trees)	2,070	1,925
Energy Savings (kWh)	n/a	n/a
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$70,669	\$99,672
Oregon Energy Efficiency Rider	\$0	-\$66*
Idaho Power Funds	\$5,973	\$5,786
Total Program Costs—All Sources	\$76,642	\$105,392
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	n/a	n/a
Total Resource Levelized Cost (\$/kWh)	n/a	n/a
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	n/a	n/a
Total Resource Benefit/Cost Ratio	n/a	n/a

\*Reversal of a 2014 charge to the Oregon Rider.

### Description

The Shade Tree Project began as a pilot in 2013. According to the US Department of Energy (DOE), a well-placed shade tree can reduce energy used for summer cooling by 15 percent or more.

Utility programs throughout the country report high customer satisfaction with shade tree programs and an enhanced public image for the utility related to sustainability and environmental stewardship.

Other utilities report energy savings between 40 kWh per year (coastal climate San Diego) and over 200 kWh per year (Phoenix) per tree planted.

To be successful, trees should be planted to maximize energy savings and ensure survivability.

Two technological developments in urban forestry—the state-sponsored Treasure Valley Urban Tree Canopy Assessment and the Arbor Day Foundation’s Energy-Saving Trees tool—provided Idaho Power with the information to facilitate a shade tree project.

The Shade Tree Project operates in Ada and Canyon counties (Idaho), offering free shade trees to residential customers. Participants enroll using the on-line Energy-Saving Trees tool and pick up their tree at specific events. Unclaimed trees are donated to city partners and schools.

Using the on-line enrollment tool, participants locate their home on a map, select from a list of available trees, and evaluate the potential energy savings associated with planting in different locations.

During enrollment, participants learn how trees planted to the west and east save more energy over time than trees planted to the south and north.

Ensuring the tree is planted properly helps it grow to provide maximum energy savings. At the tree pickup events, participants receive additional education on where to plant trees for maximum energy

savings and other tree care guidance from experts. Local specialists include city arborists from Boise, Kuna, Nampa, and Meridian; Idaho Power utility arborists; Canyon County master gardeners; and College of Western Idaho horticulture students.

In August each year, Idaho Power sends participants from the previous two offerings a newsletter filled with reminders on proper tree care and links to resources, such as tree care classes and educational opportunities in the region. This newsletter was developed after the 2015 field audits identified common customer tree care questions and concerns.

### **Program Activities**

In 2016, Idaho Power distributed 2,070 shade trees to residential customers through the Shade Tree Project. Because the best time to plant shade trees is in the spring and fall, Idaho Power held offerings in April and October, with 701 trees and 1,369 trees distributed, respectively. Idaho Power purchased the trees from a local wholesale nursery in advance of each event. The species offered for each event depended on the trees available at the time of purchase. Idaho Power worked with city and state arborists to select a variety of large-growing, deciduous trees that traditionally grow well in the climate and soils of the two participating counties.

Participants picked up the trees at events throughout the Treasure Valley—four in the spring and four in the fall. By offering several pickup days, locations, and times, 88 percent of spring trees and 90 percent of fall trees were distributed to homeowners.

Idaho Power continues to track the program data in the DSM database. The database is also used to screen applicants during enrollment to determine whether participants meet the eligibility requirements for the project, such as residential status within the eligible counties (customer type and location).

In 2016, this project was partially funded by a US Forest Service Western Competitive States Grant, which was used to purchase all of the trees for both offerings. The grant also funded the development of an instructional tree planting video posted to Idaho Power's website.

### **Marketing Activities**

For both offerings, Idaho Power developed a direct-mailing list using the state-sponsored Treasure Valley Urban Tree Canopy Assessment tool ([tvcanopy.net/](http://tvcanopy.net/)). The tool is the result of a geographic information system (GIS)-based study that mapped land use throughout the Treasure Valley, including existing trees and vegetation, buildings, roads, waterways, and parking lots. The study identified areas where a large-growing shade tree could be planted. Idaho Power used the tool to identify residential properties with potential planting sites to the west of the homes.

For both offerings, Idaho Power also sent emails to customers who had requested information about the project through Idaho Power's website. Project partners, such as the cities of Nampa, Kuna, Meridian and Boise, shared information through their networks. Idaho Power announced its Shade Tree Project to allied groups, such as the Idaho Conservation League, Idaho Chapter of the US Green Building Council (USGBC), and Treasure Valley Canopy Network. Information was sent to Green

Team leads at large employers, such as HP, Wells Fargo, Ch2MHill, and Citi Bank. The company also distributed program flyers at local events, where appropriate.

An Idaho Power Facebook post in the spring reached 1,478 people and resulted in 20 shares, 3 comments, 30 likes and 68 link clicks. A boosted Facebook post was used in the fall and reached 16,668 people and resulted in 909 post engagements (which includes likes, shares and comments). The boosted post cost-per-engagement was \$0.07. The company also promoted the program in specific neighborhoods on Nextdoor.com in the spring and fall. This combination of marketing tactics was successful. The spring offering filled in 20 days; the fall offering filled in 16 days.

### **Cost-Effectiveness**

Idaho Power does not calculate the cost-effectiveness tests for this program since no savings are currently being attributed to this program. The company plans to begin counting energy saving for the Shade Tree Program when the originally planted trees are five years old.

### **Customer Satisfaction and Evaluations**

After each offering, a survey was emailed to participants. The survey asked questions related to program marketing, tree-planting education, and participant experience with the enrollment and tree pickup processes. Results are compared, offering to offering, to look for trends to ensure the program processes are still working, and to identify opportunities for improvement. Data are also collected about where and when the participant planted the tree. This data will be used by Idaho Power to refine energy-savings estimates.

In total, the survey was sent to 1,112 Shade Tree Project participants. The company received 531 responses for a response rate of 48 percent. Participants were asked how much they would agree or disagree that they would recommend the project to a friend; nearly 96 percent of respondents said they “strongly agree,” and just over 3 percent said they “somewhat agree.” Participants were asked how much they would agree or disagree that they were satisfied with the overall experience with the Shade Tree Project; nearly 93 percent of respondents indicated they “strongly agree,” and just over 6 percent “somewhat agree” they were satisfied. View survey information in *Supplement 2: Evaluation*.

Idaho Power conducted no program evaluations in 2016.

### **2017 Program and Marketing Strategies**

Idaho Power plans to continue the Shade Tree Project in 2017 using the Arbor Day enrollment tool; trees will be distributed at multiple events. This will be the last year of US Forest Service grant funding to help support the program. Idaho Power will use these funds to purchase some trees, and to send a representative to visit a subset of planting sites to collect data on tree placement and health.

Idaho Power will also explore expanding the program to new areas in western Idaho, such as Elmore County (Mountain Home) and the Payette area.

Idaho Power will continue to market the program through direct-mail, focusing on customers identified using the Urban Tree-Canopy Assessment. In addition, Idaho Power maintains a waiting list of

customers who were unable to enroll before previous offerings filled. Idaho Power will reach out to these customers through direct-mail or email for the 2017 offerings. Idaho Power will continue to leverage allied interest groups, and will use social media and boosted Facebook posts if enrollment response rates decline.

**Simple Steps, Smart Savings™**

	2016	2015
<b>Participation and Savings</b>		
Participants (products)	7,880	9,343
Energy Savings (kWh)	577,320	770,822
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$147,055	\$130,575
Oregon Energy Efficiency Rider	\$3,535	\$6,676
Idaho Power Funds	\$3,194	\$1,845
Total Program Costs—All Sources	\$153,784	\$139,096
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.025	\$0.018
Total Resource Levelized Cost (\$/kWh)	\$0.063	\$0.054
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	2.40	3.37
Total Resource Benefit/Cost Ratio	1.33	4.83

**Description**

Initiated in 2015, the Simple Steps, Smart Savings™ program is a promotion-based appliance program that aims to increase sales of qualified energy-efficient appliances. The payments provided by Idaho Power through this program are applied during special promotions, which align with holidays or events throughout the year at retail stores. Incentives are shared between the retailer, manufacturer, and the customer, though they may differ between promotions and between retailers and manufacturers.

Retailer and manufacturer incentives may be provided as co-marketing dollars to the retailer or manufacturer to fund activities such as promotional events, special product placement, point-of-purchase signage, retailer activities, event kits, sales associate training, training material, and other marketing activities during the promotional periods.

Customer rewards may include, but are not limited to, retailer gift cards, retailer credit to the customer or free laundry products for the purchase of qualified products. These promotions are available in Idaho and Oregon.

The program also includes promotions using retailer markdowns and retailer/manufacturer incentives. Markdowns reduce retail-end prices to the customer at the point-of-purchase. Retailer/manufacturer incentives drive the manufacture, distribution, and promotion of more energy-efficient consumer products. For example, since 2010 Idaho Power has offered retailer markdowns for low-flow showerheads. Program payments reduce the cost of the showerheads for customers at the retail level, as well as to retailers and manufacturers to drive the manufacture, distribution, and promotion of these products.

Idaho Power also participates in the BPA-sponsored, Simple Steps, Smart Savings energy-efficient lighting program, which is discussed further in the Energy Efficient Lighting program section of this report.

All Simple Steps, Smart Savings promotions are administered by the BPA and coordinated by CLEAResult.

### **Program Activities**

On May 18, 2016, Idaho Power received approval to begin offering the appliance promotion to our customers in Oregon.

#### ***Appliances***

In 2016, Idaho Power participated in five major Simple Steps, Smart Savings appliance promotions with these retailers: Sears, Sears Hometown, Dell's Home Appliance, Home Depot, and RC Willey. At each event, CLEAResult personnel staffed a table and answered customer questions about the appliance promotion. To further educate customers about the promotions, CLEAResult created an Idaho Power-branded promotional landing page that highlights promotion details and participating retailers.

The five promotions took place on the following dates: 1) the 2015 Black Friday took place in November through the first week of December—because these sales data were delayed, the sales from this promotion will be included with the remaining four 2016 promotions; 2) the President's Day promotion ran for two weeks in February; 3) the Memorial Day promotion ran for the last week in May and first week in June; 4) the Independence Day promotion ran for the last week in June and first two weeks in July; and 5) the Labor Day promotion ran for the last week in August and first week in September. In-store events were held at all participating retailers in Idaho Power's service area during the promotion.

Incentives for the purchase of an ENERGY STAR® clothes washer included a \$10 gift card at Sears and Home Depot; a 180-load supply of free laundry detergent at Sears Hometown; a gift of free laundry products at Dell's Home Appliances; and a \$25 gift card at RC Willey. RC Willey added their own \$15 to the \$10 provided to allow them to offer a \$25 gift card to customers.

#### ***Showerheads***

In early 2016, The Home Depot's contract to offer buy downs on qualified showerheads ended. Due to the length of time to prepare monthly reports for these sales, they declined to continue participating in the showerhead buy down. To make up for the decrease in showerhead sales after The Home Depot's departure, CLEAResult engaged Costco and Lowe's to begin offering qualified showerheads to their list of available buy down products.

### **Marketing Activities**

In 2016, CLEAResult and participating Simple Steps, Smart Savings utility partners, decided the marketing was outdated and needed a new, fresh look. Several new designs were presented, and it was decided that the new logo would be Simple + Smart. See Figure 17 to see the updated logo. All table

tents and clings used for the 2016 Simple Steps, Smart Savings appliance promotions used the new Simple + Smart logo.

To help support the promotions, table tents and static clings were displayed on all qualifying appliances. These pieces informed customers about the promotion and the incentive they would receive. In-store gift cards were placed in gift card holders that displayed the Idaho Power logo. For purchases from Sears Hometown, where the customer received an instant markdown, customers also received a thank-you card with the Idaho Power logo.

During the promotions, Idaho Power placed Facebook and Twitter posts to notify customers of the details.

### **Cost-Effectiveness**

Idaho Power used the same savings and cost assumptions for showerheads in 2016 as were used in 2015. In 2015 and 2016, RTF reviewed and updated the savings assumptions for showerheads, and Idaho Power will adopt those in 2017. The parameters that impacted the savings for showerheads the most were changes to the baseline showerhead, the showers per person per year, and the annual usage of each showerhead. Due to the timing of RTF's update, BPA and CLEAResult did not implement the new savings in the Simple Steps, Smart Savings promotion in 2016. The new RTF workbook, version 2.4, will be used in 2017.

In 2016, Idaho Power participated in five clothes washer promotions. Idaho Power applied the per-unit savings from the approved BPA's unit energy savings (UES) Measure List. While BPA applies the annual generator busbar savings of 73 kWh per unit, Idaho Power applies the annual site savings of 67 kWh per unit. This difference is due to the different line losses applied by Idaho Power and BPA. For the NEBs, Idaho Power used RTF's clothes washer workbook to determine the water and wastewater savings for the ENERGY STAR clothes washers.

For detailed information for all measures within the Simple Steps, Smart Savings program, see *Supplement 1: Cost-Effectiveness*.

### **Customer Satisfaction and Evaluations**

Idaho Power conducted no customer satisfaction surveys or program evaluations in 2016.

### **2017 Program and Marketing Strategies**

Idaho Power has committed to participate in the 2017 Simple Steps, Smart Savings appliance promotions. Five promotions are scheduled: 1) February for President's Day, 2) May to June for Memorial Day, 3) July for Independence Day, 4) August to September for Labor Day, and 5) November to December for Black Friday. Current participating retailers are Sears, Sears Hometown, RC Willey, and Dell's Home Appliance.

CLEAResult is in the process of working with local independent retailers to encourage their participation in the program. For each promotion, Idaho Power will provide incentives only for products that meet Idaho Power's cost-effectiveness requirements.

Idaho Power will also continue participation in the Simple Steps, Smart Savings energy-efficient showerheads buy-down program in 2017.

CLEAResult will continue to manage marketing at retailers, including point-of-purchase signs, Idaho Power-branded gift card holders, and thank-you cards. When provided, Idaho Power will continue to use Idaho Power-branded promotion landing pages and Facebook posts to notify customers of the promotions.

## Weatherization Assistance for Qualified Customers

	2016	2015
<b>Participation and Savings</b>		
Participants (homes/non-profits)	246	243
Energy Savings (kWh)	746,162	550,021
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$0	\$0
Oregon Energy Efficiency Rider	\$0	\$0
Idaho Power Funds	\$1,289,809	\$1,315,032
Total Program Costs—All Sources	\$1,289,809	\$1,315,032
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.105	\$0.145
Total Resource Levelized Cost (\$/kWh)	\$0.158	\$0.235
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	0.73	0.54
Total Resource Benefit/Cost Ratio	0.65	0.43

### Description

The Weatherization Assistance for Qualified Customers (WAQC) program provides financial assistance to regional CAP agencies in Idaho Power's service area. This assistance helps fund weatherization costs of electrically heated homes occupied by qualified customers who have limited incomes. The WAQC program also provides a limited pool of funds for the weatherization of buildings occupied by non-profit organizations serving primarily special-needs populations, regardless of heating source, with priority given to buildings with electric heat. Weatherization improvements enable residents to maintain a more comfortable, safe and energy-efficient home while reducing their monthly electricity consumption. Improvements are available at no cost to qualified customers who own or rent their homes. These customers also receive educational materials and ideas on using energy wisely in their homes. Local CAP agencies determine participant eligibility according to federal and state guidelines.

In 1989, Idaho Power began offering weatherization assistance in conjunction with the State of Idaho Weatherization Assistance Program (WAP). In Oregon, Idaho Power offers weatherization assistance in conjunction with the State of Oregon WAP. Through the WAQC program, Idaho Power provides supplementary funding to state-designated CAP agencies for additional weatherization of electrically heated homes occupied by qualified customers and buildings occupied by non-profit organizations that serve special-needs populations. This allows CAP agencies to combine Idaho Power funds with federal LIHEAP weatherization funds to serve more customers in electrically heated homes with special needs.

Idaho Power has an agreement with each CAP agency for the WAQC program that specifies the funding allotment, billing requirements, and program guidelines. Currently, Idaho Power oversees the program in Idaho through five regional CAP agencies: Eastern Idaho Community Action Partnership (EICAP), El Ada Community Action Partnership (EL ADA), Aging, Weatherization and Human Services (CCOA,

now Metro Community Services), South Central Community Action Partnership (SCCAP), and Southeastern Idaho Community Action Agency (SEICAA). In Oregon, Community Connection of Northeast Oregon, Inc. (CCNO), and Community in Action (CINA) provide weatherization services for qualified customers in Idaho Power's service area.

The Idaho Department of Health and Welfare (IDHW) uses the energy audit program (EA5) for the Idaho WAP and therefore, the Idaho CAP agencies use the EA5. The EA5 is a software program approved for use by the DOE.

Annually, Idaho Power physically verifies approximately 10 percent of the homes that were weatherized under the WAQC program. This is done through two methods. The first method includes the Idaho Power program specialist participating in Idaho's and Oregon's state monitoring process that reviews weatherized homes. The process involves utility representatives; weatherization personnel from the CAP agencies; CAPAI; and a Building Performance Institute (BPI)-certified quality control inspector hired by the state reviewing homes weatherized by each of the CAP agencies.

The second method involves Idaho Power contracting with two companies—The Energy Auditor, Inc. (The Energy Auditor), and Momentum, LLC (Momentum)—that employ certified building performance specialists to verify installed measures in customer homes. The Energy Auditor verifies homes weatherized for the WAQC program in Idaho Power's eastern and southern Idaho regions. The owner of The Energy Auditor is certified by PTCS and is an ENERGY STAR<sup>®</sup> HPS. Momentum verifies weatherization services provided through the WAQC program in the Capital and Canyon–West regions of Idaho and in the company's Oregon service area. The owner of Momentum is a RESNET<sup>®</sup> certified home energy rater. After these companies verify installed measures, any required follow-up is done by the CAP agency personnel.

## **Regulatory Compliance**

Idaho Power reports the activities related to the WAQC program in compliance with the IPUC Order No. 29505, as updated in Case No. IPC-E-16-30, Order No. 33702. This order approved Idaho Power's request to modify Order No. 29505 to consolidate the WAQC Annual Report with the DSM Annual Report.

## **Program Activities**

All information previously available in the WAQC Annual Report is available in this section of the DSM Annual Report. In the future, WAQC activities will be reported solely in this manner. This report includes the following topics:

- Review of weatherized homes and non-profit buildings by county
- Review of measures installed
- Overall cost-effectiveness
- Customer education and satisfaction
- Plans for 2017

**Weatherized Homes and Non-Profit Buildings by County**

In 2016, Idaho Power made \$1,250,693 available to Idaho CAP agencies. Of the funds provided, \$1,186,192 were paid to Idaho CAP agencies in 2016, while \$64,501 were accrued for future funding. Of the funds paid in 2016, \$1,055,649 directly funded audits, energy efficiency measures, and health and safety measures for qualified customers' homes (production costs) in Idaho, and \$105,565 funded administration costs to Idaho CAP agencies for those homes weatherized.

These funds provided for the weatherization of 231 Idaho homes and 3 Idaho non-profit buildings. The production cost of the non-profit building weatherization measures was \$22,707, while \$2,271 in administrative costs were paid for the Idaho non-profit building weatherization jobs. In Oregon, Idaho Power paid \$29,742 in production costs for 12 qualified homes and \$2,974 in CAP agency administrative costs for homes in Malheur and Baker Counties. Table 9 shows each CAP agency, the number of homes weatherized, production costs, the average cost per home, administration payments, and total payments per county made by Idaho Power.

Table 9. 2016 WAQC activities and Idaho Power expenditures by agency and county

Agency	County	Number of Homes	Production Cost	Average Cost <sup>1</sup>	Administration Payment to Agency	Total Payment
<b>Idaho Homes</b>						
CCOA	Adams	1	\$ 6,313	\$ 6,313	\$ 631	\$ 6,944
	Boise	1	5,588	5,588	559	6,146
	Canyon	35	170,066	4,859	17,007	187,073
	Gem	4	23,389	5,847	2,339	25,728
	Payette	4	38,345	9,586	3,834	42,179
	Valley	3	24,643	8,214	2,464	27,107
	Washington	1	6,201	6,201	620	6,821
	<b>Agency Total</b>	<b>49</b>	<b>\$ 274,545</b>	<b>\$ 5,603</b>	<b>\$ 27,454</b>	<b>\$ 301,999</b>
EICAP	Lemhi	4	11,625	2,906	1,163	12,788
	<b>Agency Total</b>	<b>4</b>	<b>\$ 11,625</b>	<b>\$ 2,906</b>	<b>\$ 1,163</b>	<b>\$ 12,788</b>
EL ADA	Ada	69	342,706	4,967	34,271	376,977
	Elmore	19	88,319	4,648	8,832	97,151
	Owyhee	17	85,773	5,045	8,577	94,351
	<b>Agency Total</b>	<b>105</b>	<b>\$ 516,799</b>	<b>\$ 4,922</b>	<b>\$ 51,680</b>	<b>\$ 568,479</b>
SCCAP	Blaine	3	6,737	2,246	674	7,411
	Gooding	2	9,302	4,651	930	10,232
	Jerome	8	34,366	4,296	3,437	37,803
	Lincoln	1	7,262	7,262	726	7,988
	Twin Falls	23	90,594	3,939	9,059	99,653
	<b>Agency Total</b>	<b>37</b>	<b>\$ 148,261</b>	<b>\$ 4,007</b>	<b>\$ 14,826</b>	<b>\$ 163,087</b>

Table 9. 2016 WAQC activities and Idaho Power expenditures by agency and county (continued)

Agency	County	Number of Homes	Production Cost	Average Cost <sup>1</sup>	Administration Payment to Agency	Total Payment
<b>Idaho Homes</b>						
SEICAA	Bannock	14	\$ 41,254	\$ 2,947	\$ 4,125	\$ 45,380
	Bingham	10	29,394	2,939	2,939	32,333
	Power	12	33,771	2,814	3,377	37,148
	<b>Agency Total</b>	<b>36</b>	<b>\$ 104,419</b>	<b>\$ 2,901</b>	<b>\$ 10,442</b>	<b>\$ 114,861</b>
<b>Total Idaho Homes</b>		<b>231</b>	<b>\$ 1,055,649</b>	<b>\$ 4,570</b>	<b>\$ 105,565</b>	<b>\$ 1,161,214</b>
Non-profit	Ada	1	10,387		1,039	11,426
Buildings	Lemhi	1	9,518		952	10,470
	Twin Falls	1	2,802		280	3,082
<b>Total Non-Profit Buildings</b>		<b>3</b>	<b>\$ 22,707</b>	<b>\$ 7,569</b>	<b>\$ 2,271</b>	<b>\$ 24,978</b>
<b>Total Idaho</b>		<b>234</b>	<b>\$ 1,078,356</b>		<b>\$ 107,836</b>	<b>\$ 1,186,192</b>
<b>Oregon Homes</b>						
CCNO	Baker	1	3,831	3,831	383	4,214
	<b>Agency Total</b>	<b>1</b>	<b>\$ 3,831</b>	<b>\$ 3,831</b>	<b>\$ 383</b>	<b>\$ 4,214</b>
CINA	Malheur	11	25,911	2,356	2,591	28,503
	<b>Agency Total</b>	<b>11</b>	<b>\$ 25,911</b>	<b>\$ 2,356</b>	<b>\$ 2,591</b>	<b>\$ 28,503</b>
<b>Total Oregon Homes</b>		<b>12</b>	<b>\$ 29,742</b>	<b>\$ 2,479</b>	<b>\$ 2,974</b>	<b>\$ 32,717</b>
<b>Total Program</b>		<b>246</b>	<b>\$ 1,108,098</b>		<b>\$ 110,810</b>	<b>\$ 1,218,908</b>

Note: Dollars are rounded.

The base funding for Idaho CAP agencies is \$1,212,534 annually, which does not include carryover from the previous year. Idaho Power's agreements with CAP agencies include a provision that identifies a maximum annual average cost per home up to a dollar amount specified in the agreement between the CAP agency and Idaho Power. The intent of the maximum annual average cost is to allow CAP agency flexibility to service some homes with greater or fewer weatherization needs. It also provides a monitoring tool for Idaho Power to forecast year-end outcomes. The average cost per home weatherized is calculated by dividing the total annual Idaho Power production cost of homes weatherized by the total number of homes weatherized that the CAP agencies billed to Idaho Power during the year.

The maximum annual average cost per home the CAP agencies were allowed under the 2016 agreement was \$6,000. In 2016, Idaho CAP agencies had a combined average cost per home weatherized of \$4,570. In Oregon, the average was \$2,479 per home weatherized.

There is no maximum annual average cost for the weatherization of buildings occupied by non-profit agencies.

CAP agency administration fees are equal to 10 percent of Idaho Power's per-job production costs. The average administration cost paid to agencies per Idaho home weatherized in 2016 was \$457, and the average administration cost paid to Oregon agencies per Oregon home weatherized during the same period was \$248. Not included in this report's tables are additional Idaho Power staff labor, marketing, home verification, and support costs for the WAQC program totaling \$55,087 for 2016. These expenses were in addition to the WAQC program funding requirements in Idaho specified in IPUC Order No. 29505.

In compliance with IPUC Order No. 29505, WAQC program funds are tracked separately, with unspent funds carried over and made available to Idaho CAP agencies in the following year. In 2016, \$38,159 in unspent funds from 2015 were made available for expenditures in Idaho. Table 10 details the funding base and available funds from 2015 and the total amount of 2016 spending. In 2015, the Idaho non-profit-pooled fund overspent by \$10,529 which was deducted from the carryover amount to 2016.

Table 10. 2016 WAQC base funding and unspent funds made available

Agency	2016 Base	Available Funds from 2015	Total 2016 Allotment	2016 Spending
<b>Idaho</b>				
CCOA	\$ 302,259	\$ –	\$ 302,259	\$ 301,999
EICAP	12,788	–	12,788	12,788
EL ADA	568,479	–	568,479	568,479
SCCAP	167,405	45,430	212,835	163,087
SEICAA	111,603	3,258	114,861	114,861
Non-profit buildings	50,000	(10,529)	39,471	24,978
<b>Idaho Total</b>	<b>\$ 1,212,534</b>	<b>\$ 38,159</b>	<b>\$ 1,250,693</b>	<b>\$ 1,186,192</b>
<b>Oregon</b>				
CCNO	6,750	12,322	19,072	28,503
CINA	38,250	4,277	42,527	4,214
<b>Oregon Total</b>	<b>\$ 45,000</b>	<b>\$ 16,599</b>	<b>\$ 61,599</b>	<b>\$ 32,717</b>

Note: Dollars are rounded. Overspending of non-profit pooled fund in 2015 was deducted from 2016 non-profit available fund.

### ***Weatherization Measures Installed***

Table 11 details home and non-profit building counts for which Idaho Power paid all or a portion of each measure cost during 2016. The home counts column shows the number of times any percentage of that measure was billed to Idaho Power during the year. If totaled, measure counts would be higher than total homes weatherized because the number of measures installed in each home varies. For example, Table 11 shows 68 homes in Idaho received a lightbulb replacements measure. Each home received more than one lightbulb. Consistent with the Idaho WAP, the WAQC program offers several measures that have costs but do not necessarily save energy, or for which the savings cannot be measured. Included in this category are health and safety measures, vents, furnace repairs, other, and home energy audits. Health and safety measures are necessary to ensure weatherization activities do not cause unsafe situations in a customer's home or compromise a home's existing indoor air quality. Examples of health and safety items are smoke and carbon monoxide detectors, bathroom fans, and dryer vents. Other non-energy-saving measures are allowed under this program because they interact with the energy-saving measures. Examples of items included in the other measure category include vapor barriers, dryer vent hoods, and necessary electrical upgrades.

Table 11. 2016 WAQC review of measures installed

	Home Counts		Production Costs
<b>Idaho Homes</b>			
Audit	142	\$	14,139
Ceiling Insulation	111		86,188
Doors	93		63,495
Ducts	62		34,794
Floor Insulation	95		100,979
Furnace Repair	16		11,604
Furnace Replace	132		480,421
Health and Safety	45		14,423
Infiltration	143		36,850
Lighting Replacement	68		1,602
Other	37		9,807
Pipes	46		4,625
Refrigerator	8		6,373
Vents	14		912
Wall Insulation	12		5,909
Water Heater	24		23,204
Windows	110		160,324
<b>Total Idaho Homes</b>		<b>\$</b>	<b>1,055,650</b>
<b>Oregon Homes</b>			
Ceiling Insulation	7		8,582
Ducts	4		2,437
Floor Insulation	2		5,084
Health and Safety	7		3,251
Infiltration	5		1,605
Pipes	2		105
Vents	1		660
Wall Insulation	2		2,141
Windows	3		5,878
<b>Total Oregon Homes</b>		<b>\$</b>	<b>29,742</b>
<b>Idaho Non-Profits</b>			
Audit	3		\$513
Ceiling Insulation	1		1,003
Doors	1		575
Ducts	1		988
Floor Insulation	1		3,546
Furnace Repair	1		509
Health and Safety	2		623
Infiltration	2		1,462
Lighting Replacement	2		35

Table 11. 2016 WAQC review of measures installed (continued)

	Home Counts		Production Costs
<b>Idaho Non-Profits</b>			
Other	1	\$	120
Pipes	2		211
Refrigerator	1		10,357
Vents	1		67
Wall Insulation	1		667
Water Heater	1		20
Windows	1		2,013
<b>Total Idaho Non-Profit Measures</b>		<b>\$</b>	<b>22,707</b>

Note: Dollars are rounded.

## Marketing Activities

Idaho Power provided educational materials to each CAP agency to help qualified customers who receive weatherization assistance learn how to use energy efficiently. Included in the materials were copies of the Idaho Power publications: *Energy Efficiency Guide*, *Maintenance of Your High-Efficiency Water Fixtures*, and *Energy Saving Tips*, which describe energy conservation tips for the heating and cooling seasons, saving water, and a pamphlet that describes the energy-saving benefits of using CFLs, LEDs, and other tips for choosing the right lightbulb. Idaho Power developed and distributed a brochure that provided information about both the WAQC program and Weatherization Solutions for Eligible Customers program. This was meant to help customers realize there is more than one way to qualify for weatherization services. Idaho Power actively informed customers about WAQC through energy and resource fairs and other customer contacts including communication from its Customer Service Center.

## Cost-Effectiveness

The WAQC program, while showing increases in savings and cost-effectiveness ratios, remains not cost-effective. The program had a total UC B/C ratio of 0.73, and a TRC B/C ratio of 0.65.

New savings values were introduced in 2016 that reflect an updated billing analysis completed in 2015. This analysis considered pre- and post-weather normalized consumption in homes weatherized during the 2013-2014 program years from both WAQC and Weatherization Solutions for Eligible Customers programs. The billing analysis was needed to reflect the increased replacement of forced-air electric resistance heat systems with efficient heat pump systems, and to ensure that the proper level of savings was captured for the average home. Variable-based degree-day analysis methods were used, consistent with other regional billing data studies and with whole-house consumption analysis methods published as part of the DOE's Uniform Methods project.

Table 12 shows the updated results that identify the difference between homes that only received weatherization versus homes that were weatherized and upgraded with an efficient heat pump.

Table 12. 2016 savings values for WAQC program

Home Type	Weatherization only		Weatherization and heating system change	
	kWh/project	kWh/project/ft <sup>2</sup>	kWh/project	kWh/project/ft <sup>2</sup>
Single-family Homes .....	1,797	1.16	4,154	2.48
Manufactured Homes.....	1,734	1.36	4,418	4.30
Multi-family Homes.....	n/a	1.16	n/a	2.48
Non-profit Buildings.....	n/a	1.16	n/a	2.48

Table 12 also shows, as expected, weatherization combined with the installation of an efficient heat pump results in savings nearly twice that from just installing weatherization measures. Manufactured homes demonstrate a higher savings per square foot of weatherized space than single-family homes in both projects where only weatherization measures were installed and cases where heating system upgrades occurred.

Idaho Power used savings of 1.16 kWh/ft<sup>2</sup> of weatherized heated space for multi-family projects where only weatherization measures were installed and 2.48 kWh/ft<sup>2</sup> where heating system were changed. In 2016 and previous program years, there has been insufficient data from multi-family projects in both the WAQC and Weatherization Solutions for Eligible Customers programs to conduct a billing analysis so savings are assumed to be similar on a savings per square foot basis as single-family homes where like measures were installed.

Idaho Power used savings of 1.16 kWh/ft<sup>2</sup> of weatherized heated space for non-profit projects where only weatherization measures were installed, which is the average per square foot savings values for weatherized single-family homes from the updated billing analysis. It is not feasible at this time to conduct a post-weatherization billing analysis or to create a commercial whole building simulation model prior to weatherization for non-profit projects.

The initial phase for assessing cost-effectiveness occurs during the initial contacts between CAP agency weatherization staff and the customer. In customer homes, the agency weatherization auditor uses the EA5 to conduct the initial audit of potential energy savings for a home. The EA5 compares the efficiency of the home prior to weatherization to the efficiency after the proposed improvements and calculates the value of the efficiency change into a savings-to-investment ratio (SIR). The output of the SIR is similar to the PCT ratio. If the EA5 computes an SIR of 1.0 or higher, the CAP agency is authorized to complete the proposed measures. The weatherization manager can split individual measure costs between Idaho Power and other funding sources with a maximum charge of 85 percent of total production costs to Idaho Power. Using the audit form to pre-screen projects ensures that each weatherization project will result in energy savings. The use of the audit tool is one of the primary reasons that consistent results have been seen from recent billing analysis of weatherization projects.

The following recommendations from the IPUC Order No. 32788 were used for the 2016 cost-effectiveness analysis:

- Applying a 100-percent net-to-gross (NTG) value to reflect the likelihood that WAQC weatherization projects would not be initiated without the presence of a program
- Claiming 100 percent of project savings
- Including an allocated portion of the indirect overhead costs
- Applying the 10-percent conservation preference adder
- Claiming \$1 of benefits for each dollar invested in health, safety, and repair measures
- Amortizing evaluation expenses over a three-year period

### **Customer Satisfaction and Evaluations**

Idaho Power used independent, third-party verification companies to ensure the stated measures were installed in the homes, and to discuss the program with these customers. In 2016, home verifiers visited 36 homes, requesting feedback about the program. When asked how much customers learned about saving electricity, 30 customers answered they learned “a lot” or “some.” When asked how many ways they tried to save electricity, 31 customers responded “a lot” or “some.”

A customer survey was used to assess major indicators of customer satisfaction throughout the service area. The *2016 Weatherization Programs Customer Survey* was provided to all program participants in all regions upon completion of weatherization in their homes. Survey questions gathered information about how customers learned of the program, reasons for participating, how much customers learned about saving energy in their homes, and the likelihood of household members changing behaviors to use energy wisely.

Idaho Power received survey results from 238 of 243 households weatherized by the program in 2016. Of the 238 completed surveys, 227 were from Idaho customers and 11 were from Oregon customers. Some highlights include the following:

- Over 37 percent of respondents learned of the program from a friend or relative, and another almost 23 percent learned of the program from an agency flyer. Nearly 8 percent learned about the weatherization program from direct-mail.
- Over 84 percent of the respondents reported that their primary reason for participating in the weatherization program was to reduce utility bills, and over 39 percent wanted to improve the comfort of their home.
- Over 73 percent reported they learned how air leaks affect energy usage, and just over 67 percent indicated they learned how insulation affects energy usage during the weatherization process.
- Over 56 percent of respondents said they learned how to use energy wisely. Seventy-five percent reported they were very likely to change habits to save energy, and almost 66 percent reported they have shared all of the information about energy use with members of their household.

- Over 87 percent of the respondents reported they think the weatherization they received will significantly affect the comfort of their home, and almost 94 percent said they were very satisfied with the program.
- Almost 86 percent of the respondents reported the habit they were most likely to change was turning off lights when not in use, and 61 percent said that washing full loads of clothes was a habit they were likely to adopt to save energy. Turning the thermostat up in the summer was reported by over 53 percent of the respondents, and turning the thermostat down in the winter was reported by 65 percent as a habit they and members of the household were most likely to adopt to save energy.

A summary of the report is included in the *Supplement 2: Evaluation*.

### **2017 Program and Marketing Strategies**

As in previous years, unless directed otherwise, Idaho Power will continue to provide financial assistance to CAP agencies while exploring changes to improve program delivery. The company will continue to provide the most benefit possible to special-needs customers while working with Idaho and Oregon WAP personnel.

Idaho Power will continue to participate in the Idaho and Oregon state monitoring process of weatherized homes and will continue to verify approximately 10 percent of the homes weatherized under the WAQC program via certified home-verification companies.

In 2017, Idaho Power will support the whole-house philosophy of the WAQC program and Idaho and Oregon WAP by continuing to allow a \$6,000 annual maximum average per-home cost. Based on the required funding, Idaho Power estimates approximately 182 homes and four non-profit buildings in Idaho will be weatherized, and approximately 11 homes in Oregon will be weatherized in 2017.

In Idaho during 2017, Idaho Power expects to contribute the base amount plus available funds from 2016 to total approximately \$1,350,000 in weatherization measures and agency administration fees. Of this amount, approximately \$64,490 will be provided to the non-profit pooled fund to weatherize buildings housing non-profit agencies that primarily serve qualified customers in Idaho.

## Weatherization Solutions for Eligible Customers

	2016	2015
<b>Participation and Savings</b>		
Participants (homes)	232	171
Energy Savings (kWh)	621,653	432,958
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$1,226,540	\$1,204,147
Oregon Energy Efficiency Rider	\$56,571*	\$0
Idaho Power Funds	\$40,681	\$39,122
Total Program Costs—All Sources	\$1,323,793	\$1,243,269
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.130	\$0.175
Total Resource Levelized Cost (\$/kWh)	\$0.130	\$0.175
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	0.59	0.45
Total Resource Benefit/Cost Ratio	0.70	0.50

\* Oregon Rider charges were reversed and charged to the Idaho Rider in February 2017.

### Description

Weatherization Solutions for Eligible Customers is an energy efficiency program designed to serve Idaho Power residential customers in Idaho whose income falls between 175 percent and 250 percent of the most current federal poverty level. Initiated in 2008, the program is designed to mirror the WAQC program. These customers often do not have disposable income to participate in other residential energy efficiency programs, and they typically live in similar housing as WAQC customers.

Potential participants are interviewed by a contractor to determine household occupant income eligibility, as well as to confirm the home is electrically heated. If the home is a rental, the landlord must agree to maintain the unit's current rent for a minimum of one year, and to help fund a portion of the cost of weatherization. If the customer is eligible, an auditor inspects the home to determine which upgrades will save energy, improve indoor air quality, and/or provide health and safety for the residents. To be approved, energy efficiency measures and repairs must have a SIR of 1.0 or higher, interact with an energy-saving measure, or be necessary for the health and safety of the occupants.

The Weatherization Solutions for Eligible Customers program uses a home audit tool called the HAT14.1 which is similar to the EA5 audit tool used in WAQC. The home is audited for energy efficiency measures and the auditor proposes upgrades based on the SIR ratio calculated by HAT14.1. As in WAQC, if the SIR is 1.0 or greater, the contractor is authorized to upgrade that measure. Measures considered for improvement are window and door replacement, ceiling, floor and wall insulation, HVAC repair and replacement, water heater repair and replacement and pipe wrap. Also included is the potential to replace lightbulbs and refrigerators. Contractors invoice Idaho Power for the project costs and if the home is a rental, a minimum landlord payment of 10 percent of the cost is required.

Idaho Power's agreement with contractors includes a provision that identifies a maximum annual average cost per home for the program. The intent of the maximum annual average cost is to allow Contractors the flexibility to service homes with greater or fewer weatherization needs. It also provides a monitoring tool for Idaho Power to forecast year-end outcomes.

### **Program Activities**

In 2016, a new contractor provided weatherization services to customers residing in Lemhi County, Idaho. Energy Solutions weatherized two homes in 2016 for the program with an average of approximately \$4,125 each. With the addition of this new contractor, Idaho Power offers the Weatherization Solutions for Eligible Customers in all of its Idaho service area.

In 2016, the five contractors weatherized 232 Idaho homes for the program. In eastern Idaho, contractors Savings Around Power and Energy Solutions weatherized 26 homes. In Idaho Power's Canyon–West Region, Metro Contractors weatherized 56 homes. HEM-LLC weatherized 36 homes in south central Idaho, and Power Savers weatherized 114 homes in the Capital Region. Of those 232 homes weatherized, 148 were single-family and manufactured homes and 84 were low income multi-family apartments where LEDs, showerheads, kitchen and bath sink aerators, indoor clotheslines, and smoke detectors were installed.

### **Marketing Activities**

Marketing was adjusted in 2016 to reach more customers who live in electrically heated homes and income-eligible households to increase participation in the program. Inserts were included in 263,625 residential bills in February and 367,222 bills in October. The program was promoted throughout the year at seasonal, resource, and conservation fairs, as well as at other events targeting people with limited incomes, including seniors. Ads and articles promoted the program in the *Seniors BlueBook*, *Healthy Idaho Magazine*, *Idaho Senior News*, and the *Idaho State Journal* boomers' edition. The program was also mentioned in Idaho Power's winter *Energy Efficiency Guide*.

Idaho Power's community relations representatives and customer representatives promoted the program at meetings in their communities, with specific emphasis on smaller Idaho communities. The program specialist and customer representatives promoted the program to home healthcare provider groups, religious groups, and members of the Idaho Nonprofit Center. Customer representatives used updated brochures (in English and Spanish) that included current income qualifications and location-specific contractor information. New contractor door hangers and flyers were also created so the program could be promoted by canvassing specific neighborhoods. Weatherization tips were also mentioned in various social media postings.

### **Cost-Effectiveness**

While showing increases in savings and cost-effectiveness ratios from updated billing analysis and the addition of cost-effective direct-install options, the WAQC program remains not cost-effective. The 2016 program total UC B/C ratio is 0.59, and a TRC B/C ratio is 0.70. New savings values were introduced for 2016 that reflect an updated billing analysis completed in 2015 that analyzed pre- and post-weather normalized consumption in homes weatherized during the 2013-2014 program years from

both WAQC and Weatherization Solutions for Eligible Customers. The WAQC program section in this report offers a discussion of the billing analysis changes from previous versions.

Table 13 shows the updated savings results that identify the difference between homes that only received weatherization versus homes that were weatherized and upgraded with an efficient heat pump.

Table 13. 2016 savings values for Weatherization Solutions for Eligible Customers program

Home Type	Weatherization		Weatherization and heating system change	
	kWh/project	kWh/project/ft <sup>2</sup>	kWh/project	kWh/project/ft <sup>2</sup>
Single-family Homes .....	1,453	0.83	6,321	3.47
Manufactured Homes .....	897	0.39	5,355	4.50
Multi-family Homes.....	n/a	0.83	n/a	3.47

Similar to billing analysis results for WAQC, weatherization combined with the installation of an efficient heat pump results in savings nearly twice that from just installing weatherization measures. Manufactured homes demonstrate a higher savings per square foot of weatherized space than single family homes in cases where both weatherization and heating system upgrades occurred.

Idaho Power used savings of .83 kWh/ft<sup>2</sup> of weatherized heated space for multi-family projects where only weatherization measures were installed and 3.47 kwh/ft<sup>2</sup> where heating system where changed. Prior to 2015, insufficient data from multi-family projects existed to conduct a billing analysis so savings are assumed to be similar on a savings per square foot basis as single-family homes where like measures were installed.

Weatherization Solutions for Eligible Customers projects, similar to WAQC program guidelines, benefit from a pre-screening of measures through a home audit process. The home audit process ensures that there is an adequate number of kWh savings to justify the project and provides more consistent savings for billing analysis. See WAQC cost-effectiveness for a discussion of the audit and prescreening process which are similar for both programs.

For further details on the overall program cost-effectiveness assumptions, see *Supplement 1: Cost-Effectiveness*.

### Customer Satisfaction and Evaluations

A 2016 customer survey was provided to all program participants upon completion of weatherization in their homes. Survey questions gathered information about how customers learned of the program, reasons for participating, the amount of information customers learned about saving energy in their homes, and the likelihood that household members would change their behavior to use energy wisely. Additionally, demographic information was gathered to determine future marketing strategies.

Idaho Power received survey results from 130 of the 232 households weatherized by the program in 2016. Some key highlights include the following:

- Almost 27 percent of respondents learned of the program through a letter in the mail and another 22 percent learned of the program from a friend or relative.
- Over 86 percent of the respondents reported their primary reason for participating in the weatherization program was to reduce utility bills.
- Almost 80 percent indicated they learned how insulation affects energy usage during the weatherization process, and over 85 percent reported they learned how air leaks affect energy usage. Another almost 60 percent of respondents said they learned how to use energy wisely.
- Over 79 percent reported they were very likely to change habits to save energy, and over 71 percent reported they have shared all of the information about energy use with members of their household.
- Almost 91 percent of the respondents reported they think the weatherization they received will significantly affect the comfort of their home, and nearly 92 percent said they were very satisfied with the program.

A summary of the report is included in *Supplement 2: Evaluation*.

Two independent companies performed random verifications of weatherized homes and visited with customers about the program. In 2016, 35 homes were verified, and 23 (66 percent), of those customers reported they learned “a lot” or “some” about saving electricity in their home. Another 33 customers (95 percent) reported they had tried “a lot” or “some” ways to save energy in their home.

### **2017 Program and Marketing Strategies**

Idaho Power will update brochures to help spread the word about the program in all communities. Additional marketing for the program will include bill inserts and advertisements in *Healthy Idaho Magazine*, *Seniors BlueBook*, *Idaho Senior News*, and *Idaho State Journal* boomers, edition. Idaho Power will send a direct-mail letter to targeted residential customers mid-year, and use social media in an effort to reach a more customers. Customer testimonials will be posted online, and the door hangers produced late in 2016 will continue to be used when canvassing neighborhoods.

## Commercial/Industrial Sector Overview

Idaho Power's commercial sector consists of over 69,341 customers. In 2016, the commercial sector's number of customers increased by 830, an increase of a little over 1 percent from 2015. The energy usage of commercial customers varies from a few kWh each month to several hundred thousand kWh per month. The commercial sector represents 28 percent of Idaho Power's actual total electricity sales.

The industrial and special contracts customers are Idaho Power's largest individual energy consumers. There are 121 Rate 19 and special contract industrial customers. These customers account for approximately 23 percent of Idaho Power's total electricity sales.

In June 2016, the three Commercial and Industrial Energy Efficiency programs were combined into a single program. Previously, the programs were: Building Efficiency, Custom Efficiency, and Easy Upgrades. The measure offerings to the customers remained relatively unchanged with prescriptive measures for new construction and major renovations, custom incentives for complex projects, and prescriptive measures for simple retrofits. The programs were combined with the intention to clarify program offerings and to improve marketing to customers. The combined program continues to be successful, with a reported overall savings of 88,161 MWh on 1,903 projects.

The 2016 season was the second year of the internally managed Flex Peak Program. The results were greatly improved from 2015 as was participation, including 65 participants enrolled with 137 sites in the program. Of those 137 sites, 67 were new—a 90 percent increase over 2015. Idaho Power also offers the statutory-required Oregon Commercial Audits program to medium and small commercial customers. The program identifies opportunities for commercial building owners to achieve energy savings.

Table 14. 2016 commercial/industrial program summary

Program	Participants	Total Cost		Savings	
		Utility	Resource	Energy (kWh)	Demand (MW)
<b>Demand Response</b>					
Flex Peak Program .....	137 sites	\$ 767,997	\$ 767,997	n/a	42
<b>Total</b> .....		<b>\$ 767,997</b>	<b>\$ 767,997</b>		<b>42</b>
<b>Energy Efficiency</b>					
Custom Projects (Custom Efficiency) .....	196 projects	\$ 7,982,624	\$ 16,123,619	47,518,871	
Green Motors—Industrial .....	14 projects			123,700	
New Construction (Building Efficiency) ....	116 projects	1,931,222	4,560,826	12,393,249	
Oregon Commercial Audits .....	7 audits	7,717	7,717	n/a	
Retrofits (Easy Upgrades) .....	1,577 projects	5,040,190	8,038,791	28,124,779	
<b>Total</b> .....		<b>\$ 14,961,753</b>	<b>\$ 28,730,952</b>	<b>88,160,599</b>	<b>42</b>

**Note:** See Appendix 3 for notes on methodology and column definitions.

### Customer Satisfaction and Evaluations

Customer satisfaction research by sector includes the Idaho Power quarterly customer relationship surveys that ask questions about customer perceptions related to Idaho Power's energy efficiency

programs. Sixty-five percent of Idaho Power's large commercial and industrial customers surveyed in 2016 for the Burke Customer Relationship Survey indicated Idaho Power was meeting or exceeding their needs in offering energy efficiency programs. Sixty-one percent of survey respondents indicated Idaho Power was meeting or exceeding their needs with information on how to use energy wisely and efficiently. Seventy-four percent of respondents indicated Idaho Power was meeting or exceeding their needs by encouraging energy efficiency with its customers. Overall, 78 percent of the large commercial and industrial survey respondents indicated they have participated in at least one Idaho Power energy efficiency program. Of the large commercial and industrial customers surveyed and who had participated in at least one Idaho Power energy efficiency program, 98 percent are "very" or "somewhat" satisfied with the program. In 2016, offering energy efficiency programs was one of the large commercial and industrial top five attributes with a positive change in the Burke Customer Relationship Survey.

The results from surveying Idaho Power's small business customers indicated 51 percent of these customers said Idaho Power was meeting or exceeding their needs in offering energy efficiency programs. Fifty-four percent of survey respondents indicated Idaho Power was meeting or exceeding their needs with information on how to use energy wisely and efficiently. Sixty-three percent of respondents indicated Idaho Power was meeting or exceeding their needs with encouraging energy efficiency with its customers. Overall, 39 percent of the small business survey respondents indicated they have participated in at least one Idaho Power energy efficiency program. Of small business survey respondents who have participated in at least one Idaho Power energy efficiency program, 92 percent are "very" or "somewhat" satisfied with the program.

Forty-one percent of the Idaho Power business customers included in the *2016 J. D. Power and Associates Electric Utility Business Customer Satisfaction Study* indicated they are familiar with Idaho Power's energy efficiency programs.

## **Training and Education**

Technical training and education continue to be important in helping Idaho Power commercial and industrial customers identify where they may have energy efficiency opportunities within their facilities. These activities increase awareness and participation in existing commercial and industrial energy efficiency and demand response programs, and enhance customer satisfaction regarding the company's energy efficiency activities.

Educating commercial and industrial customers requires working with and supporting multiple stakeholders and organizations. Examples of key stakeholders include the Integrated Design Lab (IDL), BOMA, USGBC, ASHRAE, and International Building Operators Association (IBOA). Through funding provided by Idaho Power, the IDL performed several tasks aimed at increasing the energy efficiency knowledge of architects, engineers, trade allies, and customers. Specific activities included sponsoring a Building Simulation Users Group (BSUG), conducting Lunch & Learn sessions held at various design and engineering firms, and offering a Tool Loan Library (TLL).

Idaho Power also used two newsletters to educate and inform our customers about energy efficiency. *Energy at Work*, which is new in 2016, was mailed to commercial and industrial customers twice in

2016; the major customer representatives emailed *Energy Insights* to 400 of Idaho Power's largest industrial customers each quarter.

Idaho Power delivered eight technical classroom-based training sessions in 2016. Of the eight sessions, one was a two-day class, and the others were one-day classes. Topics included industrial refrigeration, energy auditing, an introduction to unitary A/C, advanced unitary A/C, pump systems, motors, variable speed drives, and commercial refrigeration. A schedule of training events is posted on Idaho Power's website and marketed through *Energy at Work* and *Energy Insights*. Commercial and Industrial Energy Efficiency personnel or the major customer representatives also give an overview of the commercial and industrial programs during each technical training session offered to commercial and industrial customers.

The level of participation in 2016 remained high, with 217 attendees. Customer feedback indicated the average satisfaction level was 94 percent.

Idaho Power's average cost to deliver trainings in 2016 was approximately \$5,300 per class. For NEEA's 2015 to 2019 funding period, Idaho Power chose not to participate in NEEA's industrial trainings. Prior to the current funding period from 2010 to 2014, NEEA offered an average of nine trainings per year at an approximate cost of \$22,000 per class. By Idaho Power providing these trainings directly to Idaho Power customers, the company has realized significant cost reduction for its customers.

Idaho Power posted prior years' webinar recordings and related PDFs on the commercial and industrial training page on the Idaho Power website. Also, on Idaho Power's industrial training page is a listing of all IBOA events. Idaho Power covered at least 50 percent of cost for Idaho Power customers to take part in their educational classes including the Building Operator Certification Level 1, consisting of eight day-long classes, and Level 2, consisting of seven day-long classes. In 2016, 42 customers attended the Level 1 classes, and eight attended the Level 2 classes.

### **Field Staff Activities**

Idaho Power field staff are on-site with customers each day. The field staff uses a variety of Idaho Power-developed programs, tools, and services to help customers with their energy-related questions and challenges. The customer representatives and major customer representatives have specific goals related to proactive activities, such as a specific number of visits or projects, designed to engage commercial and industrial customers in the energy efficiency. Additionally, program specialists and engineers work closely with customer representatives and major customer representatives to use their established relationships with customers. Customer representatives and major customer representatives distribute informational materials to trade allies and other market participants who, in turn, support and promote Idaho Power's energy efficiency programs.

Customers regularly ask how to get the most out of their energy dollar. Idaho Power staff has been trained to properly advise customers in the wise use of energy-specific energy efficiency measures and, when needed, can recommend where to find answers. Idaho Power is equipped with experienced

engineers, technically proficient personnel, and an extensive network of nationally recognized organizations and energy efficiency clearing houses to handle energy-related questions.

## Commercial and Industrial Energy Efficiency Program

	2016*	2015*
<b>Participation and Savings</b>		
Participants (projects)	1,903	1,463
Energy Savings (kWh)**	88,160,599	102,073,910
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$14,319,999	\$14,629,149
Oregon Energy Efficiency Rider	\$508,538	\$798,424
Idaho Power Funds	\$125,500	\$97,921
Total Program Costs—All Sources	\$14,954,036	\$15,525,494
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$0.014	\$0.014
Total Resource Levelized Cost (\$/kWh)	\$0.026	\$0.031
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	4.67	4.48
Total Resource Benefit/Cost Ratio	2.81	2.13

\*Metrics for each option (New Construction, Custom Projects, and Retrofits) are reported separately in appendices and in *Supplement 1: Cost-Effectiveness*.

\*\*2016 total includes 123,700 kWh of energy savings from 14 Green Motors projects.

### Description

Three major program options targeting different energy efficiency projects are available to commercial/industrial customers in the company's Idaho and Oregon service areas.

#### **Custom Projects (Custom Efficiency)**

The Custom Projects option incentivizes energy efficiency modifications for new and existing facilities. The goal is to encourage commercial and industrial energy savings in Idaho and Oregon service areas by helping customers implement energy efficiency upgrades. Incentives reduce customers' payback periods for customize modifications that might not be completed otherwise. The Custom Projects option offers an incentive level 70 percent of the project cost or 18 cents per kWh for first year estimated savings, whichever is less. The Custom Projects option also offers energy auditing services to help identify and evaluate potential energy saving modifications or projects.

Interested customers submit applications to Idaho Power for potential modifications that have been identified by the customers, Idaho Power, or by a third-party consultant. Idaho Power reviews each application and works with the customer and vendors to gather sufficient information to support the energy-savings calculations.

Once completed, customers submit a payment application; in some cases, large, complex projects may take as long as two years to complete. Every payment application is verified by Idaho Power staff or an Idaho Power contractor. All lighting modifications utilize the Idaho Power lighting tool to determine incentive.

Each project is reviewed to ensure energy savings are achieved. Idaho Power engineering staff or a third-party consultant verifies the energy savings methods and calculations. Through the verification process, end-use measure information, project photographs, and project costs are collected.

On many projects, especially the larger and more complex projects, Idaho Power or a third-party consultant conducts on-site power monitoring and data collection before and after project implementation. The measurement and verification process helps ensure the achievement of projected energy savings. Verifying applicants' information confirms energy savings are obtained and are within program guidelines. If changes in scope take place in a project, a recalculation of energy savings and incentive amounts occurs based on the actual installed equipment and performance. The measurement and verification reports provided to Idaho Power include a verification of energy savings, costs, estimates of measure life, and any final recommendations.

### ***New Construction (Building Efficiency)***

The New Construction option enables customers in Idaho Power's Idaho and Oregon service areas to apply energy-efficient design features and technologies in new commercial or industrial construction, expansion, or major remodeling projects. New construction and major renovation project design and construction life is much longer than small retrofits and often encompasses multiple calendar years. Originated in 2004, the program currently offers a menu of measures and incentives for efficient lighting, cooling, building shell, controls, appliances, and refrigeration options. These measures may otherwise be lost opportunities for savings on customers' projects.

Twenty-four prescriptive measures are offered: interior lighting, exterior lighting, daylight photo controls, occupancy sensors, high-efficiency exit signs, efficient A/C and heat pump units, efficient variable refrigerant flow units, efficient chillers, air-side economizers, direct evaporative coolers, evaporative pre-coolers on air-cooled condensers, reflective roof treatment, energy-management control systems, guest room energy-management systems, HVAC variable-speed drives, kitchen hood variable-speed drives, onion/potato shed ventilation variable-speed drives, efficient laundry machines, ENERGY STAR<sup>®</sup> under-counter dishwashers, ENERGY STAR commercial dishwashers, refrigeration head-pressure controls, refrigeration floating-suction controls, efficient condensers, and smart power strips.

### ***Retrofits (Easy Upgrades)***

The Retrofits option is Idaho Power's prescriptive measure option for existing commercial and industrial facilities. This part of the program encourages commercial and industrial customers in Idaho and Oregon to implement energy efficiency upgrades by offering incentives on a defined list of measures. Eligible measures cover a variety of energy-saving opportunities in lighting, HVAC, building shell, variable-frequency drives (VFD), food-service equipment, and other commercial measures. Customers can also apply non-standard lighting incentives. A complete list of the measures offered through Retrofits (Easy Upgrades) is included in *Supplement 1: Cost-Effectiveness*.

## Program Activities

### Custom Projects

Incentive levels for the non-lighting projects remained the same in 2016 at 18 cents per kWh of first year savings with a 70-percent project cost cap on the incentive.

The Custom Projects option had another very successful year with a total of 196 projects, including 11 in Oregon, completed by 103 customers. However, related energy savings decreased in 2016 by 14 percent over 2015, from 55,186 MWh to 47,519 MWh. Idaho Power also received 248 new applications representing a potential of 61,240 MWh of savings on future projects.

Idaho Power made the following tariff changes in 2016: The required 100,000 kWh minimum savings was removed to allow for projects that may not meet that threshold to receive a Custom Projects incentive, such as Streamlined Custom Efficiency (SCE). The three-year term requirement was removed for the self-direct projects, which eliminates the need to file for tariff changes for every new three-year term.

Custom Projects may reach some level of saturation through program maturity, over 95 percent of the large-power service customers have participated in the program. With the high percentage of industrial customers who have taken advantage of the program, deeper energy savings may be challenging to achieve. The company is addressing this ongoing challenge in several ways by continuing to use multiple channels to reach customers and to encourage new energy-saving modifications. The company has expanded the cohort offerings, SCE, and expanded its ability to conduct energy audits through an expanded list of engineering firms.

Table 15 indicates the program's 2016 annual energy savings by primary project measures.

Table 15. 2016 Custom Projects annual energy savings by primary project measure

Program Summary by Measure	Number of Projects	kWh Saved
Lighting .....	117	9,386,277
Refrigeration .....	11	23,681,463
HVAC .....	6	4,839,312
Compressed Air .....	18	2,726,482
Commissioning .....	7	2,739,491
Controls .....	1	224,756
Pump .....	3	708,555
VFD .....	32	3,158,906
Other .....	1	53,629
Total <sup>a</sup> .....	196	47,518,871

<sup>a</sup> Does not include Green Motor Initiative project counts and savings.

Facility energy auditing, customer technical training, and education services are key components used to encourage customers to consider energy efficiency modifications. The Municipal Water Supply Optimization Cohort (MWSOC) and Wastewater Energy Efficiency Cohort (WWEEC) program offerings are also driving a significant number of new projects in addition to increasing vendor engagement from the SCE offering. The 2016 activities in the key components are described below.

## **Facility Energy Auditing**

Idaho Power funds the cost of engineering services, up to \$3,500, for conducting energy scoping audits to encourage its larger customers to adopt energy efficiency improvements. Currently, there are 11 different firms on contract to provide scoping audits and general energy efficiency engineering support services.

In 2016, Idaho Power consultants completed 25 scoping audits and two detailed audits on behalf of Idaho Power customers. These audits identified over 20,000 MWh of savings potential. Most of the customers engaged in these audits used the information to move forward with projects or expressed interest in moving forward in the near future.

## **Program Education and Offerings**

Custom Projects engineers and the major customer representatives set up numerous visits with the large commercial and industrial customers in 2016. The visits ranged from commercial/industrial efficiency program training to a comprehensive targeted technical training sessions for a larger audience on potential energy-saving opportunities for different measure types, such as refrigeration, pumps and fans, compressed air, HVAC, lighting, etc. In addition to the eight comprehensive targeted technical training sessions that were held by Idaho Power, Custom Projects engineers also gave presentations on Idaho Power programs and offerings at a multi-industrial customer program training sessions, such as the Northwest Chapter of American Association of Airport Executives Airfield and Facilities Management Conference, the International Society of Healthcare Engineers (ISHE) Conference, the Energy Community Partnership Workshop facilitated by Mountain Home Air Force Base, and the Idaho Green Building and Energy Conference. In 2016, Custom Projects continued three offerings to increase the total program savings—WWEEC, MWSOC, and SCE. A new, fourth offering launched in November 2016—Continuous Energy Improvement (CEI) Cohort for Schools.

### **Wastewater Energy Efficiency Cohort**

In January 2014, Custom Projects launched WWEEC, its third program offering since 2013, to increase the total program savings. WWEEC is a cohort training approach to low-cost or no-cost energy improvements. WWEEC is a two-year engagement with 11 Idaho Power service area municipalities and ended in 2016. WWEEC provided a series of five technical training workshops with a cohort training approach. In addition, WWEEC provided energy audits in conjunction with a qualified wastewater system expert and an energy management assessment conducted by a strategic energy management professional for each participating facility. Customers were able to immediately implement low-cost and no-cost energy efficiency improvements by actions as simple as turning off equipment or adjusting control points for systems. They also implemented many energy management principles, including forming an energy team, setting energy goals, and establishing energy policies in their organization for persistence of savings. Energy savings were tracked via Idaho Power-provided, third-party software using an energy model for each facility. WWEEC participants also completed several capital projects that received separate incentives from our Commercial and Industrial Energy Efficiency Program. Additionally, multiple pre-planning meetings were held with consultants and municipalities for upcoming new wastewater construction projects.

Due to involvement with our WVEEC, Custom Projects engineers also set up multiple program informational meetings with the area civil engineering firms specializing in water and wastewater designs to educate them on the Commercial and Industrial Energy Efficiency Program, audit process, energy efficiency opportunities, and available tools and resources. Presentations on Idaho Power offerings were given at a multi-industrial customer program training session in Boise, the annual Southwest Idaho Operators Section (SWIOS) Conference, the national annual Water Environment Federation Technical Exhibition and Conference (WEFTEC) in New Orleans, and Idaho Power had a booth at the Pacific Northwest Section American Water Works Association (PNWS-AWWA) regional conference.

Year-one incentives and savings totaled \$57,559 and 2,561,177 kWh/year. In all cases, the incentive was capped at 70 percent of the eligible costs. Year-one incentives and savings were processed in 2016. Additionally, some WVEEC participants completed capital projects that were encouraged and discussed in the workshops and energy audits. These capital projects' savings are captured separately and not included in the above number. Year-two of the offering consisted of phone call check-ins with the participants and model data updates. Year-two incentives and savings will be processed in 2017.

#### Municipal Water Supply Optimization Cohort

In September 2015, Idaho Power held a recruiting/training session for municipal water supply operators and public works personnel garnering interest in a third Strategic Energy Management cohort—the MWSOC, similar to WVEEC but for clean water operators. The program officially launched in January 2016. The goal of the cohort is to equip water professionals with the skills necessary to identify and implement energy efficiency opportunities on their own, and to ensure that these energy and cost savings are maintained long term.

A series of three workshops were held in the Twin Falls area with representatives from the 15 participating organizations. Sessions included technical training, hands-on learning exercises to demonstrate simple low-cost and no-cost actions to diagnose problems and save energy, and peer-to-peer sharing of lessons learned as the classes progressed. MWSOC provided energy audits of the participants' facilities. Customers were able to immediately implement low-cost and no-cost energy efficiency improvements by actions as simple as changing pressure regulating valve (PRV) settings or well level adjustments. Participants had engineering support between each workshop, facilitated by an expert team of energy engineers with specific experience in optimizing water supply systems. Participants all received tools, such as a baseline hydraulic model (updated and modernized with the energy modules loaded), a mass balance for water, and an energy map showing locations of stored and lost energy, as well as the energy footprint of the various pumps within each system. A top down baseline energy model was constructed for each participant that uses electric data normalized for system operating data and weather. The baseline energy model will be used in conjunction with on-going actual energy, production and weather data to determine the energy savings for the offering.

#### Continuous Energy Improvement Cohort for Schools

In November 2016, Idaho Power held a recruiting/training session for school district personnel garnering interest in this cohort. Representatives from 19 school districts attended. The session introduced the

upcoming cohort whose goal is to equip district personnel with hands-on training and guidance to help get the most out of their systems while reducing energy consumption. Idaho Power and the company's consultants gave an overview what Continuous Energy Improvement is and how numerous low-cost or no-cost measures can be uncovered in schools. By 2016 year-end, 9 school districts have signed up for the cohort. The Cohort for Schools Kickoff Workshop is scheduled for late January 2017, in Boise with a final Report-out Workshop to be scheduled in December 2017. Energy savings for this offering are tracked with multi-variant regression models that are custom-built for each participating facility and based on historical utility data and current operations.

#### Streamlined Custom Efficiency

The SCE offering was initially started in 2013 and continues to keep vendor engagement high and provides custom incentives for small compressed air system improvements, fast-acting doors in cold-storage spaces, refrigeration controllers for walk-in coolers, and process-related VFDs. This offering targets projects that may have typically been too small to participate in the Custom Projects due to the resources required to adequately determine measure savings. Idaho Power contracted with a third party to manage SCE data collection and analysis for each project. In 2016, the SCE offering processed 42 projects, totaling 2,837,200 kWh per year of savings and \$399,523 in incentives paid.

#### **New Construction**

The New Construction option completed 116 projects, the largest total number of projects completed in a calendar year, resulting in 12,393,249 kWh in annual energy savings in Idaho and Oregon. The total number of projects increased by over 43 percent from 81 projects in 2015.

Maintaining a consistent offering is important for large projects with long construction periods, though changes are made to enhance customers' options or to meet new code changes. Idaho Power ideally tries to keep the New Construction option consistent by making less frequent changes, approximately every other year. The option was modified in mid-2016 to include the addition of four new measures; evaporative pre-coolers on air-cooled condensers, kitchen hood variable-speed drives, onion/potato shed ventilation variable-speed drives, and smart-strip power strips.

Idaho Power contracted with ADM in 2015 to update the Technical Reference Manual (TRM) to address code changes that occurred January 1, 2015 in Idaho. The revised TRM provided updated savings for existing measures and savings for new measures that were added to the program. Minor modifications were also made to several existing measures to update requirements based on the code changes.

Thirty projects received the Professional Assistance Incentive, an incentive given to architects and/or engineers for supporting technical aspects and documentation of the project, in 2016 (equal to 10 percent of the participant's total incentive, up to a maximum amount of \$2,500) compared to nine projects in 2015.

In 2016, Idaho Power continued its contract with GreenSteps to target the commercial real estate industry by continuing to support the Kilowatt Crackdown™ competition past participants. The original competition, which included benchmarking each building in ENERGY STAR® Portfolio Manager,

encouraged builders to implement low-cost and no-cost efficiency measures. Idaho Power also expanded engagement with participants through Strategic Energy Management (SEM). GreenSteps worked with 26 buildings in Boise and Ketchum, and six property management firms. A summary of the report is located in *Supplement 2: Evaluations*.

Idaho Power customer representatives visited 20 architectural and engineering firms in Boise, Meridian, Nampa, Hailey, Ketchum, Twin Falls, and Pocatello in 2016. Customer representatives visited with 100 professionals total to build relationships with the local design community, and to discuss Idaho Power's commercial and industrial energy efficiency programs.

### **Retrofits**

The Retrofits option experienced increases in participation and energy savings in 2016. Some of the increase was attributed to the mid-June program change to adjust the screw-in LED incentive. The option received a noticeable number of projects with screw-in LED product before that change became effective. This also resulted in increased energy savings. Overall, Retrofits received more LED-only projects, which had a significant contribution to energy savings.

Several measure changes were implemented mid-year. The most notable changes were to adjust the screw-in LED incentive, to add the tube LEDs (TLED), and to add seven non-lighting measures to the incentive menu.

For the Retrofits option, Idaho Power facilitated eight workshops across the Idaho Power service area targeting contractors and large customers. The purpose of the workshops was to review option updates with market participants.

Idaho Power staff and contractors contacted over 195 trade allies to respond to inquiries, strengthen relationships, encourage participation, increase knowledge of the incentives, and receive feedback about the market, and individual experiences. This targeted outreach was to electrical contractors, electrical distributors, HVAC contractors, and food service equipment suppliers.

Idaho Power continued its contracts with Evergreen Consulting Group, LLC, Honeywell, Inc., and RM Energy Consulting to provide ongoing program support for lighting and non-lighting reviews and inspections as well as trade ally outreach.

### **Marketing Activities**

Most marketing activities engaged in for the Commercial and Industrial Energy Efficiency Program can be found in the Marketing section of this report. Below are the 2016 activities specific to the option within the overall program.

#### **Custom Projects**

Idaho Power's Custom Projects option is unique from the company's other energy efficiency options by providing individualized energy efficiency solutions to a somewhat limited number of customers.

Idaho Power's major customer representatives often act as the company's sales force.

Marketing supports the major customer representatives by providing written program materials to help

them inform customers of the measures and benefits available to them. Idaho Power presented the Simplot Don Plant in Pocatello an incentive check for \$197,335 toward energy efficiency upgrades to a pumping project.

### ***New Construction***

Idaho Power placed ads in the Idaho Association of General Contractors membership directory specific to the New Construction option. The New Construction brochure was also updated to include a list of current measures and provided to customers planning new construction and major renovation projects. Idaho Power alerted the media to its presentation of a cash incentive to Vallivue School District 139. During a board meeting, the School District accepted a check for more than \$193,000 it had earned for adopting energy-efficient construction measures at two schools in Caldwell, Idaho.

### ***Retrofits***

Ads thanking contractors for their participation ran in numerous papers in December 2015, and continued in the *Business Insider*, *Southeast Idaho Business Journal*, *Idaho Business Review*, and *Business News* within the *Blackfoot Morning-News* in January 2016. Idaho Power also ran an ad promoting energy-efficient Retrofit incentives in the January Boise Chamber of Commerce newsletter.

## **Cost-Effectiveness**

### ***Custom Projects***

All projects submitted through the Custom Projects option must meet cost-effectiveness requirements, which include TRC, UC, and PCT tests from a project perspective. The program requires all costs related to the energy efficiency implementation and energy-savings calculations are gathered and submitted with the program application. Payback is calculated with and without incentives, along with the estimated dollar savings for installing energy efficiency measures. As a project progresses, any changes to the project are used to recalculate energy savings and incentives before the incentives are paid to the participant. To aid in gathering or verifying the data required to conduct cost-effectiveness and energy-savings calculations, third-party engineering firms are sometimes used via a scoping audit, detailed audit, or engineering measurement and verification services available under the Custom Projects option. Details for cost-effectiveness are in *Supplement 1: Cost-Effectiveness*.

### ***New Construction***

To calculate energy savings for the New Construction option, Idaho Power verifies the incremental efficiency of each measure over a code or standard practice installation baseline. Savings are calculated through two main methods. When available, savings are calculated using actual measurement parameters, including the efficiency of the installed measure compared to code-related efficiency. Another method for calculating savings is based on industry standard assumptions, when precise measurements are unavailable. Since the New Construction option is prescriptive and the measures are installed in new buildings, there are no baselines of previous measurable kWh usage in the building. Therefore, Idaho Power uses industry standard assumptions from the International Energy Conservation Code (IECC) to calculate the savings achieved over how the building would have used energy absent of efficiency measures.

New Construction incentives are based on a variety of methods depending on the measure type. Incentives are calculated mainly through a dollar-per-unit equation using square footage, tonnage, operating hours, or kW reduction.

To prepare for 2016 program changes, ADM, under contract with Idaho Power, updated the TRM for New Construction. The TRM, which provides savings and costs related to existing and new measures for the New Construction option, was updated to include the IECC 2012 baseline. These new savings were applied in 2016 when other program changes were implemented.

Based on the deemed savings value from the TRM, nearly all measures were cost-effective, with the exception of some air conditioning units and daylight photo controls. Idaho Power determined these measures met at least one of the cost-effectiveness exceptions outlined in OPUC Order No. 94-590. Idaho Power had received a cost-effectiveness exception on these measures when it filed changes to the program in 2014 under Advice No. 14-10. When Idaho Power filed Advice No. 16-08 for the combined commercial and industrial program, the company requested and received another cost-effectiveness exception for variant refrigerant flow (VRF) heat pumps.

Complete measure level details for cost-effectiveness can be found in *Supplement 1: Cost-Effectiveness*.

### **Retrofits**

In 2016, Idaho Power used most of the same savings and assumptions as were used in 2015 for the Retrofits option. For all lighting measures, Idaho Power uses a lighting tool calculator developed by Evergreen Consulting, Group LLC. An initial analysis was conducted to see if the lighting measures shown in the tool were cost-effective based on the average input of watts and hours of operation, while the actual savings for each project are calculated based on specific information regarding the existing and replacement fixture. For most non-lighting measures, deemed savings from the TRM or RTF are used to calculate the cost-effectiveness. To prepare for 2016 program changes, ADM, under contract with Idaho Power, updated the TRM for the Retrofit option. The TRM which provides savings and costs related to existing and new measures for the Retrofit option. The TRM was updated to include the IECC 2012 baseline for several heating and cooling measures.

Several measures that are not cost-effective remain in the program. These measures include high-efficiency A/C units and heat pump units. After reviewing these measures, Idaho Power determined the measures met at least one of the cost-effectiveness exceptions outlined in OPUC Order No. 94-590. These cost-effectiveness exceptions were approved by the OPUC in Advice No 14-06 in 2014. When Idaho Power filed Advice No. 16-08 for the combined commercial and industrial program, the company requested and received another cost-effectiveness exception for VRF heat pumps.

Complete measure level details for cost-effectiveness can be found in *Supplement 1: Cost-Effectiveness*.

### **Customer Satisfaction and Evaluations**

Customer satisfaction with regards to the Commercial and Industrial Energy Efficiency Program is mentioned in the Commercial and Industrial sector overview. Activities that are specific to each component of the program are mentioned below.

**Custom Projects**

No specific activities were conducted in 2016.

**New Construction**

The New Construction option continued random installation verification on 10 percent of projects in 2016. The purpose of the verifications is to confirm program guidelines and requirements are adequate and ensure participants are able to provide accurate and precise information with regard to energy efficiency measure installations. The IDL completed on-site field verifications on 12 of the 116 projects, which encompass approximately 10 percent of the total completed projects in the program. Out of the 12 projects verified, only minor discrepancies were discovered. The minor discrepancies consist of the addition or subtraction of lighting fixtures compared to what was claimed on the application. Random project installation verification will continue in 2017.

In 2016, Idaho Power contracted with Leidos to conduct an impact evaluation of this option. The evaluation determined a high level of ex-post realization for option demand and energy savings at .99 and .98 respectively, as well as high realization at the measure level. The kWh confidence and precision ratios were 90 percent confidence at +/- 0.2 percent precision and 90 percent confidence at +/-4.8 percent for kW. In general, project documentation was adequate for verifying most measure impacts, and project data are recorded and tracked with high accuracy. Final reports are provided in *Supplement 2: Evaluation*.

**Retrofits**

In 2016, Idaho Power contracted with Leidos Engineering to perform an impact evaluation for the incentives paid in 2015 under the Retrofits option. The final report indicated that the option is well designed, well managed, and well implemented. The project documentation was adequate for verifying most measure impacts, and project data are recorded and tracked with high accuracy. The evaluation also determined a high level of ex-post realization for energy savings, as well as high realizations at the measure level. The 2015 kWh savings realization rate was 0.99 with 90 percent confidence at +/- 0.2 percent precision. Final reports are provided in *Supplement 2: Evaluation*.

**2017 Program and Marketing Strategies**

Future marketing for the overall Commercial and Industrial Energy Efficiency Program is described in the Marketing section of this report. Below are specific strategies that apply to the individual components of the program.

**Custom Projects**

Over the years, the Custom Projects option has achieved a high service-area penetration rate. As stated previously, over 95 percent of the large-power service customers have submitted applications for a project. Company staff is actively working to support these customers in new ways and find additional opportunities for cost-effective energy saving projects. Additional program offerings are currently under consideration for implementation in 2017.

Idaho Power will report the second year of energy savings and incentives for WVEEC in the *Demand-Side Management 2017 Annual Report*. Idaho Power will report the first year of energy

savings, and incentives in 2017 or early 2018 for the MWSOC offering. Activities and coaching will continue for the MWSOC participants and the report-out workshop will be held in 2017. The first year of the CEI Cohort for Schools will commence in January 2017. Three half-day workshops and a final report-out workshop will be held in 2017 along with monthly activities and frequent coaching. The SCE offering will continue in 2017, and new measures, processes, and other improvements will be evaluated to continuously improve the effectiveness of this offering.

Idaho Power will continue to provide site visits by Custom Projects engineers and energy scoping audits for project identification and energy-savings opportunities; measurement and verification of larger, complex projects; technical training for customers; and funding for detailed energy audits for larger, complex projects.

Custom Projects will continue to be marketed as part of Idaho Power's Commercial and Industrial Energy Efficiency Program.

### ***New Construction***

The following strategies are planned for 2017:

- Continue to perform random post-project verifications on a minimum of 10 percent of completed projects.
- Continue to sponsor technical training through the IDL to address the energy efficiency education needs of design professionals throughout the Idaho Power service area.
- Support organizations focused on promoting energy efficiency in commercial construction.
- Actively support the 2017 Idaho Energy and Green Building Conference as a member of the conference planning committee. Participate in planning the conference agenda and energy efficiency sessions.
- Continue to sponsor the BOMA symposium and offer energy efficiency training and support to the real estate market.
- Continue customer representative relationship building with local design professionals by targeting Idaho Power's Boise and Pocatello areas.

The New Construction option will continue to be marketed as part of Idaho Power's Commercial and Industrial Energy Efficiency Program.

### ***Retrofits***

Idaho Power will review and address the recommendations from the Leidos impact evaluation, and offer technical lighting classes to trade allies.

Retrofits will continue to be marketed as part of Idaho Power's Commercial and Industrial Energy Efficiency Program.

## Flex Peak Program

	2016	2015
<b>Participation and Savings</b>		
Participants (sites)	137	72
Energy Savings (kWh)	n/a	n/a
Demand Reduction (MW)	42	26
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$105,116	\$86,445
Oregon Energy Efficiency Rider	\$247,897	\$219,654
Idaho Power Funds	\$414,984	\$286,773
Total Program Costs—All Sources	\$767,997	\$592,872
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	n/a	n/a
Total Resource Levelized Cost (\$/kWh)	n/a	n/a
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	n/a	n/a
Total Resource Benefit/Cost Ratio	n/a	n/a

### Description

The Flex Peak Program is a voluntary program available in Idaho and Oregon service areas. It's designed for Idaho Power's large commercial and industrial customers, with the objective to reduce the demand on Idaho Power's system during periods of extreme peak electricity use. By reducing demand on extreme system load days during summer months, the program reduces the amount of generation and transmission resources required to serve customers. Program participants earn a financial incentive for reducing load during peak electricity use: non-holiday weekdays, June 15 to August 15, between the hours 2:00 p.m. and 8:00 p.m. Reduction events may be called a maximum of 60 hours per season.

Customers with the ability to offer load reduction of at least 20 kW are eligible to enroll in the program. The 20-kW threshold allows a broad range of customers the ability to participate in the program. Participants receive notification of a load reduction event two hours prior to the start of the event, and events last between two to four hours.

The program originated in 2009 as the FlexPeak Management program managed by a third-party contractor. In 2015, Idaho Power took over full administration, and changed the name to Flex Peak Program. The IPUC issued Order No. 33292 on May 7, 2015, while the OPUC approved Advice No. 15-03 on May 1, 2015, authorizing Idaho Power to implement an internally managed Flex Peak Program (Schedule No. 82 in Idaho and Schedule No. 76 in Oregon), and to continue recovery of its demand response program costs in the previous manner.

## Program Activities

In 2016, 65 participants enrolled 137 sites in the program. Of those 137 sites, 67 were new—a 90-percent increase over 2015. Participants had a nominated load reduction of 34.2 MW in the first week of the program, which was the highest committed load reduction for the season. This weekly commitment, or nomination, was comprised of all 137 sites, 70 of which had participated in the 2015 season. The maximum realization rate during the season was 120 percent and the average for all three events combined was 98.8 percent. The realization rate is the percentage of load reduction achieved versus the amount of load reduction committed for an event. The highest hourly load reduction achieved was 41.5 MW during the July 26 event.

The first event was called on Thursday, June 30. Participants were notified at 2:00 p.m. of a four-hour event from 4:00 p.m. to 8:00 p.m. The total nomination for this event was 34.2 MW for each hour. The average load reduction was 32.8 MW, with the highest hourly load reduction of 34.8 MW from 6:00 p.m. to 7:00 p.m. The realization rate for this event was 96 percent.

A second event was called on Tuesday, July 26. Participants were notified at 2:00 p.m. of a four-hour event from 4:00 p.m. and 8:00 p.m. The total nomination for this event was 33.5 MW for each hour. The average load reduction was 40.3 MW, with the highest hourly load reduction of 41.5 MW from 4:00 p.m. to 5:00 p.m. The realization rate for this event was 120 percent.

The third event was called on Thursday, July 28. Participants were notified at 2:00 p.m. of a four-hour event from 4:00 p.m. to 8:00 p.m. The total nomination for this event was 33.9 MW. The average load reduction was 27 MW, with the highest hourly load reduction of 27.7 MW from 4:00 p.m. to 5:00 p.m. The realization rate for this event was 80 percent. Some larger sites underperformed or reduced participation because this was the second event in one week, therefore the realization rate was lower.

The Idaho Power CHQ building participated in the program again in 2016, and committed to reduce up to 200 kW of electrical demand during events—an increase from the 150 kW's nominated during the 2015 season. Unlike other program participants, Idaho Power does not receive any financial incentives for its participation. Idaho Power's CHQ participated in all three demand response events in 2016. The average reduction achieved by the facility across the three events was 348 kW, which exceeded the nominated amount. The maximum hourly reduction was 685 kW, achieved on July 28. Reductions were mostly obtained by turning off lights, adjusting chiller set points, decreasing fan speeds, and curtailing elevator use. Besides the benefit of experiencing firsthand what participants experience with the program, Idaho Power now has a quantifiable energy-reduction plan in place that can be executed when needed. Idaho Power will continue to look for opportunities to enroll more of its facilities in the program for future seasons.

## Marketing Activities

Idaho Power developed new program literature including a new program brochure. These were sent by direct-mail to encourage both past participants and new customers to enroll in 2016. Idaho Power launched an additional marketing campaign early in 2016 using customer representatives to recruit new participants. Customer representatives conducted field visits in early winter and followed up with

additional communication in early spring. This marketing campaign focused on identifying customer characteristics that make successful program participants based on load size, load shape, and type of operation. Customer representatives also communicated available incentive amounts based on customer load size.

The program's marketing campaign goals were expanded to increase the number and size diversity (in terms of nominated load reduction) of customers enrolled. By having a larger diversity of customer sizes enrolled, it was expected that the program would be less prone to volatility in its realization rate. The company also included an advertisement in the spring *Energy at Work* newsletter and published an article promoting the program in its commercial and industrial electronic newsletter, *Energy Insights*.

Idaho Power implemented an educational campaign with currently enrolled participants and potential participants to promote a variety of demand-reduction strategies. The goal was to refine the amount of nominated load reduction from each site to more realistically align with load reduction potential.

The Flex Peak Program was also marketed along with the Commercial and Industrial Energy Efficiency Program. Additional details can be found in the Marketing section of this report.

### **Cost-Effectiveness**

Idaho Power determines cost-effectiveness for its demand response program under the terms of IPUC Order No. 32923 and OPUC Order No. 13-482. Under the terms of the orders and the settlement, all of Idaho Power's demand response programs were cost-effective for 2016.

The Flex Peak Program was dispatched for 12 event hours and achieved a maximum reduction of 41.5 MW. The total cost of the program in 2016 was \$767,997, had the Flex Peak Program been used for the full 60 hours, the cost would have been approximately \$1,004,000.

In 2016, the cost of operating the three demand response programs was \$9.47 million. Idaho Power estimates that if the three programs were dispatched for the full 60 hours, the total costs would have been approximately \$12.87 million and would have remained cost-effective. A complete description of Idaho Power cost-effectiveness of its demand response programs is included in *Supplement 1: Cost-effectiveness*.

### **Customer Satisfaction and Evaluations**

Idaho Power conducted a post-season survey that was sent via email to all participants enrolled in the program. The survey was sent to 97 individuals representing 64 participating customer sites. Idaho Power received feedback from 34 individuals for a response rate of 35 percent. When customers were asked how satisfied they were with the Flex Peak Program, nearly 97 percent of respondents indicated they were "very satisfied" or "somewhat satisfied." When asked how likely they would be to re-enroll in the Flex Peak Program, 100 percent of respondents indicated they were likely to re-enroll next year with just over 91 percent indicating they were "very likely" to re-enroll. The complete details of the survey results are in *Supplement 2: Evaluation*, as is the *Flex Peak Program 2016 Report*.

Idaho Power contracted CLEAResult to conduct an impact evaluation of the 2016 Flex Peak Program. The goals of the impact evaluation were to determine the demand reduction (in MW) and realization rate for the three curtailment events during the program's June 15 through August 15, 2016 season.

The results of the analyses showed maximum demand reductions of 34.8, 41.5, and 27.7 MW, respectively, for the three events, and an average of 34.7 MW. The events achieved realization rates of 96.0 percent, 120 percent, and 80 percent, respectively, averaging 98.8 percent. These results are different than those listed in the CLEAResult report; these have been converted to generation-level reductions, while the CLEAResult report lists meter-level reductions.

The results of the impact evaluation show that Idaho Power's 2016 Flex Peak Program functioned as intended, and provided up to 42 MW to the electricity grid. A summary of the results is in *Supplement 2: Evaluation*.

### **2017 Program and Marketing Strategies**

The company is exploring opportunities to improve the re-enrollment process for participants, and has filed a tariff advice with both the IPCU and OPUC to request that existing participants would be automatically enrolled each year without having to complete a new application and program agreement. Customers would still have the ability to change their nomination amounts and decline participation.

Recruitment efforts for the 2017 season will begin in the first quarter to encourage participation. Idaho Power will meet with existing participants during the winter/spring months to discuss past-season performance and upcoming season details.

For the upcoming season, Idaho Power plans to focus on retaining currently enrolled customers and to recruit new customers that show interest and are a good fit for the program. However, the company does not plan to actively market the program like it did in 2016 because the capacity from this past season remained around 35 MW, which comports with the desired program capacity set forth in the settlement agreement.

The company will continue to use its customer representatives to retain the currently enrolled sites and encourage new sites to participate. Flex Peak will also be marketed along with Idaho Power's Commercial and Industrial Energy Efficiency Program. See the Marketing section of this report for 2017 marketing strategies.

## Oregon Commercial Audits

	2016	2015
<b>Participation and Savings</b>		
Participants (a)	7	17
Energy Savings (kWh)	n/a	n/a
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$0	\$0
Oregon Energy Efficiency Rider	\$7,717	\$4,251
Idaho Power Funds	\$0	\$0
Total Program Costs—All Sources	\$7,717	\$4,251
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	n/a	n/a
Total Resource Levelized Cost (\$/kWh)	n/a	n/a
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	n/a	n/a
Total Resource Benefit/Cost Ratio	n/a	n/a

### Description

The Oregon Commercial Audits identifies opportunities for commercial building owners to achieve energy savings. Initiated in 1983, this statutory required program (ORS 469.865) is offered under Oregon Tariff Schedule No. 82.

Through this program, Idaho Power provides free energy audits, evaluations, and educational products to customers. Energy audits provide the opportunity to discuss utility incentives available to customers who install qualifying energy efficiency measures. Business owners can make the decisions to change operating practices, or make capital improvements designed to use energy wisely.

### Program Activities

Seven customers requested audits. Of those audits, EnerTech Services, a third-party contractor, completed four, Idaho Power personnel completed two, and one customer received only the program-related booklet. No customers cancelled their audits. The costs were down in 2016 from 2015 because the third-party contractor performed only four audits.

Auditors inspected the building shell, HVAC equipment, lighting systems, and operating schedules, if available, and reviewed the customer's past billing data. Additionally, these visits provided a venue for auditors to discuss incorporating specific business operating practices for energy savings, and to distribute energy efficiency program information.

**Marketing Activities**

Idaho Power sent out its annual mailing to 1,413 Oregon commercial customers in mid-September 2016 regarding the no-cost or low-cost energy audits, and the availability of Idaho Power's *Saving Energy Dollars* booklet.

**Cost-Effectiveness**

As previously stated, the Oregon Commercial Audits program is a statutory program offered under Oregon Schedule 82, the Commercial Energy Conservation Services Program. Because the required parameters of the Oregon Commercial Audit program are specified in Oregon Schedule 82 and the company abides by these specifications, this program is deemed to be cost-effective. Idaho Power claims no energy savings from this program.

**Customer Satisfaction and Evaluations**

Idaho Power conducted no customer satisfaction surveys or evaluations in 2016.

Historically, customers have been pleased with the audit process because the audits help identify energy-saving opportunities that may not be obvious to the business owner.

**2017 Program and Marketing Strategies**

The Oregon Commercial Audits program will continue to be an important avenue for Idaho Power to help customers identify energy-saving opportunities.

Idaho Power will continue to market the program through the annual customer notification.

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## Irrigation Sector Overview

The irrigation sector is comprised of agricultural customers operating water-pumping or water-delivery systems to irrigate agricultural crops or pasturage. End-use electrical equipment primarily consists of agricultural irrigation pumps and center pivots. The irrigation sector does not include water pumping for non-agricultural purposes, such as the irrigation of lawns, parks, cemeteries, golf courses, or domestic water supply.

In December 2016, the active and inactive irrigation service locations totaled 20,638 system-wide. This was an increase of 1.7 percent compared to 2015, primarily due to the addition of service locations for pumps and pivots to convert land previously furrow irrigated to sprinkler irrigation. Irrigation customers accounted for 1,948,079 MWh of energy usage in 2016, which was a decrease from 2015 of approximately 4.8 percent primarily due to variations in weather. This sector represented nearly 14 percent of Idaho Power's total electricity sales, and approximately 33 percent of July sales. Energy usage for this sector has not grown significantly in many years; however, there is substantial yearly variation in usage due primarily to the impact of weather on customer irrigation needs.

Idaho Power offers two programs to the irrigation sector:

1. Irrigation Efficiency Rewards, an energy efficiency program designed to encourage the replacement or improvement of inefficient systems and components
2. Irrigation Peak Rewards, a demand response program designed to provide a system peak resource

The Irrigation Efficiency Rewards program, including Green Motor Initiative, experienced increased annual savings, from 14,027 MWh in 2015 to 15,747 MWh in 2016. Annual savings were up in 2016 likely because several large projects were completed this year.

In 2016, the Irrigation Peak Rewards program was in its third full season of full operation after temporarily being suspended for the 2013 season. Idaho Power successfully recruited the majority of prior participants to continue their participation in 2016, with a small increase of 1.2 percent in eligible service points participating over 2015.

Table 16 summarizes the overall expenses and program performance for both the energy efficiency and demand response programs provided to irrigation customers.

Table 16. 2016 irrigation program summary

Program	Participants	Total Cost		Savings	
		Utility	Resource	Annual Energy (kWh)	Peak Demand (MW)
<b>Demand Response</b>					
Irrigation Peak Rewards.....	2,286 service points	\$ 7,600,076	\$ 7,600,076	n/a	303
<b>Total</b> .....		<b>\$ 7,600,076</b>	<b>\$ 7,600,076</b>	<b>n/a</b>	<b>303</b>
<b>Energy Efficiency</b>					
Green Motors—Irrigation.....	23 motor rewinds			73,617	
Irrigation Efficiency Rewards.....	851 projects	\$ 2,372,352	\$ 8,162,206	15,673,513	
<b>Total</b> .....		<b>\$ 2,372,352</b>	<b>\$ 8,162,206</b>	<b>15,747,130</b>	<b>303</b>

**Note:** See Appendix 3 for notes on methodology and column definitions.

Each year, the company conducts a customer relationship survey. Overall, 56 percent of Idaho Power irrigation customers surveyed in 2016 for the Burke Customer Relationship Survey indicated Idaho Power was meeting or exceeding their needs in offering energy efficiency programs. Fifty-three percent of survey respondents indicated Idaho Power is meeting or exceeding their needs with information on how to use energy wisely and efficiently. Sixty-seven percent of respondents indicated Idaho Power is meeting or exceeding their needs with encouraging energy efficiency with its customers. Overall, 41 percent of the irrigation survey respondents indicated they have participated in at least one Idaho Power energy efficiency program. Of irrigation survey respondents who have participated in at least one Idaho Power energy efficiency program, 93 percent are “very” or “somewhat” satisfied with the program.

### Training and Education

Idaho Power continued to market its irrigation programs by varying the location of workshops and offering new presentations to irrigation customers. In 2016, Idaho Power provided eight workshops promoting the Irrigation Efficiency Rewards program. Approximately 200 customers attended workshops in Twin Falls, Emmett, McCall, Homedale, Mini-Cassia, Shoshone, American Falls, and Oxbow. The company displayed exhibits at regional agricultural trade shows, including the Eastern Idaho Agriculture Expo, Western Idaho Agriculture Expo, the Agri-Action Ag show and the Treasure Valley Irrigation Conference.

Idaho Power sends out *Irrigation News* to all irrigation customers in Idaho and Oregon. The newsletter focuses on the Idaho Power Irrigation topics. This newsletter provides an opportunity to increase awareness, and to promote our Irrigation programs.

### Field Staff Activities

Idaho Power’s agricultural representatives offer customer education, training, and irrigation-system assessments and audits across the service area. Agricultural representatives also engage agricultural irrigation equipment dealers in training sessions, with the goal to share expertise about energy-efficient system designs, and to bring awareness about the program. Agricultural representatives and the irrigation segment coordinator, a licensed agricultural engineer, participate in annual training to maintain

or obtain their Certified Irrigation Designer and Certified Agricultural Irrigation Specialist accreditation. This training allows Idaho Power to maintain its high level of expertise in the irrigation industry and is sponsored by the nationally based Irrigation Association.

## Irrigation Efficiency Rewards

	2016	2015
<b>Participation and Savings</b>		
Participants (projects)	851	902
Energy Savings (kWh)*	15,747,130	14,027,411
Demand Reduction (MW)	n/a	n/a
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$1,672,328	\$1,714,399
Oregon Energy Efficiency Rider	\$634,101	\$61,295
Idaho Power Funds	\$65,923	\$60,018
Total Program Costs—All Sources	\$2,372,352	\$1,835,711
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	\$.018	\$0.016
Total Resource Levelized Cost (\$/kWh)	\$.063	\$0.085
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	4.95	6.00
Total Resource Benefit/Cost Ratio	3.21	3.84

\*2016 total includes 73,617 kWh of energy savings from 23 Green Motors projects.

### Description

Initiated in 2003, the Irrigation Efficiency Rewards program encourages energy-efficient equipment use and design in irrigation systems. Qualified irrigators in Idaho Power's Idaho and Oregon service areas can receive financial incentives and reduce their electricity usage through participation in the program. Two options help meet the needs for major or minor changes to new or existing systems: Custom Incentive and Menu Incentive.

#### Custom Incentive Option

The Custom Incentive Option addresses extensive retrofits or installation of an efficient new system.

**New Systems:** For a new system, the incentive is based on installation of a system Idaho Power determines to be more energy efficient than standard. Water source changes to an existing system are treated as a new system. The incentive is 25 cents per annual kWh saved, not to exceed 10 percent of the project cost.

**Existing Systems:** For existing system upgrades, the incentive is 25 cents per annual kWh saved or \$450 per kW demand reduction, whichever is greater. The incentive is limited to 75 percent of the total project cost.

The qualifying energy efficiency measures include any hardware changes that result in a reduction of the potential kWh use of an irrigation system.

Idaho Power reviews, analyzes, and makes recommendations on each project. All project information is reviewed for each completed project before final payment. Prior usage history, actual invoices, and, in most situations, post-usage demand data are used to verify savings and incentives.

### ***Menu Incentive Option***

The Menu Incentive Option covers a significant portion of the costs of repairing and replacing specific components that help the irrigation system use less energy. This option is designed for systems where small maintenance upgrades provide energy savings from 11 separate measures. These measures are as follows:

- New flow-control type nozzles
- New nozzles for impact, rotating, or fixed-head sprinklers
- New or rebuilt impact or rotating type sprinklers
- New or rebuilt wheel-line levelers
- New complete low-pressure pivot package
- New drains for pivots or wheel-lines
- New riser caps and gaskets for hand-lines, wheel-lines, and portable mainlines
- New wheel-line hubs
- New pivot gooseneck and drop tube
- Leaky pipe repair
- New center pivot base boot gasket

Payments are calculated on predetermined average kWh savings per component.

### **Program Activities**

Of the 851 irrigation efficiency projects completed in 2016, 728 were associated with the Menu Incentive Option, providing an estimated 10,357 MWh of energy savings and 2.02 MW of demand reduction. The Custom Incentive Option had 123 projects, of which 65 were new irrigation systems and 58 were on existing systems. This option provided 5,316 MWh of energy savings and 2.03 MW of demand reduction for the year.

### **Marketing Activities**

In addition to training and education mentioned in the overview section, Idaho Power agricultural representatives targeted visits with a selected number of customers who had not participated in the program to increase customer education. Idaho Power maintained a database of irrigation dealers and vendors for direct-mail communication. Irrigation dealers and vendors are a key component to the successful marketing of the program. Therefore, Idaho Power's face-to-face interactions and direct-mailings containing the most up-to-date program information, brochures, and dealer-specific meetings ensured correct program promotion.

In 2016, the company sent a copy of *Irrigation News* to all irrigation customers in Idaho and Oregon. The August 2016 newsletter focused on the Irrigation Efficiency Rewards program: why read dates are important and summary bill options. This newsletter provides an opportunity to increase transparency, and to promote the Irrigation Efficiency Rewards program.

Idaho Power also placed numerous ads in print agricultural publications including the *Argus Observer*, *Gem State Producer*, *Capital Press*, *Power County Press*, and *Potato Grower Magazine*; updated and distributed the program brochure; and used radio advertising during Agri-Action and FFA week.

### **Cost-Effectiveness**

Idaho Power calculates cost-effectiveness using different savings and benefits assumptions and measurements under the Custom Incentive Option and the Menu Incentive Option of Irrigation Efficiency Rewards.

Each application under the Custom Incentive Option received by Idaho Power undergoes an assessment to estimate the energy savings that will be achieved through a customer's participation in the program. On existing system upgrades, Idaho Power calculates the savings of a project by determining what changes are being made and comparing it to the service point's previous five years of electricity usage history on a case-by-case basis. On new system installations, the company uses standard practices as the baseline and determines the efficiency of the applicant's proposed project. Based on the specific equipment to be installed, the company calculates the estimated post-installation energy consumption of the system. The company verifies the completion of the system design through aerial photographs, maps, and field visits to ensure the irrigation system is installed and used in the manner the applicant's documentation describes.

Each application under the Menu Incentive Option received by Idaho Power also undergoes an assessment to ensure deemed savings are appropriate and reasonable. Payments are calculated on a prescribed basis by measure. In some cases, the energy-savings estimates in the Menu Incentive Option are adjusted downward from deemed RTF savings to better reflect known information on how the components are actually being used. For example, a half-circle rotation center pivot will only save half as much energy per sprinkler head as a full-circle rotation center pivot. All deemed savings are based on seasonal operating hour assumptions by region. If a system's usage history indicates it has lower operating hours than the assumptions, like the example above, the deemed savings are adjusted.

Based on the deemed savings from the RTF, all the measures offered under the Menu Incentive Option are cost-effective. Complete measure-level details for cost-effectiveness can be found in *Supplement 1: Cost-Effectiveness*.

### **Customer Satisfaction and Evaluations**

Idaho Power conducted no customer satisfaction surveys for this program.

In 2016, Idaho Power contracted with Leidos to conduct an impact and process evaluation of this program. The evaluation team conducted 46 desk reviews; 30 for a stratified sample of Menu Option

projects and 16 for a stratified sample of Custom Option projects. The team also completed site visits for 11 custom incentive projects.

The findings of the impact evaluation indicate a realization rate of 98 percent, with a relative precision of +/- 2.4 percent overall at 90 percent confidence, on the ex-post kWh savings for both the Menu Option and the Custom Option savings combined. The realization rate on the ex-post kW impacts was 97 percent for the Menu Option and 75 percent for the Custom Option, respectively. The overall combined realization rate for the program demand savings was 90 percent with a relative precision of +/-3.3 percent at 90 percent confidence. The realization rate is the percent comparison of the expected savings or load reduction to the realized savings or load reduction.

The process evaluation indicated that the program is well designed, well managed and well implemented. A summary of the results is in *Supplement 2: Evaluation*.

### **2017 Program and Marketing Strategies**

Marketing plans for 2017 include conducting six to eight customer-based irrigation workshops. Additionally, Idaho Power will continue to participate in four regional agricultural trade shows. Idaho Power will work closely with customers who have participated in the Irrigation Efficiency Rewards program, and continue to take photos for program promotion highlighting efficient irrigation system designs.

Idaho Power will continue to promote the program in agriculturally focused editions of newspapers and magazines, and to provide valuable information in its *Irrigation News* newsletter.

## Irrigation Peak Rewards

	2016	2015
<b>Participation and Savings</b>		
Participants (participants)	2,286	2,259
Energy Savings (kWh)	n/a	n/a
Demand Reduction (MW)	303	305
<b>Program Costs by Funding Source</b>		
Idaho Energy Efficiency Rider	\$1,082,113	\$1,018,139
Oregon Energy Efficiency Rider	\$218,906	\$222,614
Idaho Power Funds	\$6,299,056	\$6,018,079
Total Program Costs—All Sources	\$7,600,076	\$7,258,831
<b>Program Levelized Costs</b>		
Utility Levelized Cost (\$/kWh)	n/a	n/a
Total Resource Levelized Cost (\$/kWh)	n/a	n/a
<b>Benefit/Cost Ratios</b>		
Utility Benefit/Cost Ratio	n/a	n/a
Total Resource Benefit/Cost Ratio	n/a	n/a

### Description

Idaho Power’s Irrigation Peak Rewards program is a voluntary program available only to Idaho and Oregon agricultural irrigation customers with metered service locations that have participated in the past. Initiated in 2004, the purpose of the program is to minimize or delay the need to build new supply-side resources. By reducing demand on the most extreme load days in the most extreme summer conditions, the Irrigation Peak Rewards program can reduce the amount of generation and transmission resources Idaho Power needs to build.

The program pays irrigation customers a financial incentive to interrupt the operation of specified irrigation pumps with the use of one or more load control devices. Historically, the Irrigation Peak Rewards program provides approximately 300 MW of load reduction during the program season of June 15 through August 15, which is nearly 9 percent of Idaho Power’s all-time system peak.

The program offers two interruption options: an Automatic Dispatch Option and a Manual Dispatch Option. To participate in the Automatic Dispatch Option, either an advanced metering infrastructure (AMI) or a cellular control device is attached to the customer’s electrical panel that allows Idaho Power to remotely control the pumps. To participate in the Manual Dispatch Option, Idaho Power must determine that the service location cannot take advantage of the current installation and communication technology, or the service point offers at least 1,000 cumulative horse power (hp). These customers must nominate a particular amount of kW reduction by June 1 of the program year.

For either interruption option, load control events could occur up to four hours per day, up to 15 hours per week, but no more than 60 hours per season. Customers will experience at least three events per season between 1:00 p.m. and 9:00 p.m. on weekdays and Saturday.

The incentive structure consists of fixed and variable payments. The fixed incentive is paid to those who participate during each of the first three events. A variable incentive is paid to those who participate in subsequent events. Customers who participate from 5:00 p.m. until 9:00 p.m. can receive a higher variable incentive.

Program rules allow customers the ability to opt out of dispatch events up to five times per service point. The first three opt outs each incur a penalty of \$5 per kW, while the remaining two each incur a penalty of \$1 per kW based on the current month's billing kW. The opt-out penalty may be prorated to correspond with the dates of program operation, and are accomplished through manual bill adjustments. The penalties will never exceed the amount of the incentive that would have been paid with full participation.

### **Program Activities**

Idaho Power filed a request in December 2015 to modify the existing Irrigation Peak Rewards program to allow the company to use more of its AMI technology for load control as well as to allow greater flexibility for some customers to participate in the Manual Dispatch Option. After approval in Idaho and Oregon in February 2016, Idaho Power decided not to renew the contract with program provider, EnerNOC/M2M Communications.

Idaho Power enrolled 2,286 service points in the program in 2016, an increase of 1 percent over 2015. The enrolled service points accounted for approximately 82 percent of the eligible service points (where there is a load control device installed). The incentive rate remained the same in 2016. The customer's incentive is a demand credit of \$5.00/kW and an energy credit of \$0.0076/kWh applied to the monthly bills for the period of June 15 through August 15. The demand credit is calculated by multiplying the monthly billing kW by the demand-related incentive amount. The energy credit is calculated by multiplying the monthly billing kWh usage by the energy-related incentive amount. Credits were prorated for periods when reading/billing cycles did not align with the program season dates from June 15 to August 15. The incentive structure also includes a "variable" payment for more than three events of \$0.148/event kWh, with an increased variable credit of \$0.198/event kWh for service points that voluntarily participate in the "extended" 9 p.m. interruption period.

The three load control events occurred June 29, July 27, and July 29, 2016 with the highest load reduction occurring on June 29, providing an estimated 316.9 MW at the generation level.

### **Marketing Activities**

Idaho Power used workshops, trade shows, and direct-mailings to encourage past participants to re-enroll in the program. See the Irrigation Sector Overview section. The company updated an informational flyer to increase appeal and readability by using a brochure format. Idaho Power mailed the new brochure, program enrollment application, and program agreement, to all eligible participants in February 2016.

## Cost-Effectiveness

Idaho Power determines cost-effectiveness for its demand response program under the terms of IPUC Order No. 32923 and OPUC Order No. 13-482. Under the terms of the orders and the settlement, all of Idaho Power's demand response programs were cost-effective for 2016.

The Irrigation Peak Rewards program was dispatched for 12 event hours and achieved a maximum demand reduction of 302.7 MW. The total expense for 2016 was \$7,600,075 and would have been approximately \$10.8 million if the program was fully used for 60 hours.

In 2016, the cost of operating the three demand response programs was \$9.47 million. Idaho Power estimates that if the three programs were dispatched for the full 60 hours, the total costs would have been approximately \$12.87 million and would have remained cost-effective. A complete description of Idaho Power cost-effectiveness of its demand response programs is included in *Supplement 1: Cost-Effectiveness*.

## Customer Satisfaction and Evaluations

On the June 29 event, the program experienced two unexpected problems. The AMI signal to the load control device was not able to process all of the necessary commands because the communication settings were incorrect. The issue was discovered near the beginning of the event, and was corrected within two hours of the event starting time. Additionally, the EnerNOC/M2M device notification process did not work as intended, consequently not all of the participants were notified. EnerNOC/M2M corrected the issue, and it did not happen in subsequent events.

Each year, Idaho Power produces an internal annual report for the Irrigation Peak Rewards program. This report includes a load-reduction analysis, cost-effectiveness information, and program changes. A copy is included in *Supplement 2: Evaluation*.

In 2016, Idaho Power conducted a potential realization rate analysis and, as in past years, that potential event date has a large influence on the expected realization rate. Table 18 shows the season in two-week blocks and the potential realization rate associated with each. The rate drops off significantly in August due to a higher percentage of pumps turned off during the baseline period. The 2016 counterfactual realization rate peaked the last two weeks of June. The analysis determined that the highest realization rate of 76.9 percent occurred June 29. A further breakdown of the load reduction for each event by is shown in Table 17.

Table 17. Irrigation Peak Rewards program load reduction for each 2016 event by program option

Event	Automatic Dispatch Option (MW)	Manual Dispatch Option (MW)	Total Load (MW)
June 29	233,589	69,171	302,760
July 27	177,685	66,911	244,569
July 29	185,180	64,096	249,275

Table 18. Irrigation Peak Rewards 2016 potential realization rate

<b>2016 Season Timeframe</b>	<b>Average Potential Realization Rate</b>
June 15–June 30 .....	68.82%
July 1–July 15 .....	62.42%
July 16–July 31 .....	58.89%
August 1– August 15 .....	55.66%

### **2017 Program and Marketing Strategies**

The company is in the process of exchanging all of the EnerNOC/M2M communication devices with load control units that work with its AMI meters or company designed cell phone-controlled devices. Once the exchanges are complete, the program will no longer use EnerNOC/M2M to provide services for the program. This change out of devices is expected to reduce overall program costs and potentially reduce the complexity of coordinating communications and load control commands.

Idaho Power will continue to recruit past participants in this program for the 2017 irrigation season. The company will conduct six to eight workshops throughout its service area to familiarize customers with the program details and eligibility requirements. Each eligible customer will be sent a comprehensive packet containing an informational brochure, sign-up worksheet, and contract agreement encouraging their participation. Idaho Power agricultural representatives will continue one-on-one customer contact to inform and encourage program participation.

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## OTHER PROGRAMS AND ACTIVITIES

Idaho Power recognizes the value of energy efficiency awareness and education to create behavioral change to help customers use energy wisely. The goal of other programs and activities is to promote energy efficiency programs, projects, and behavior in customers. These awareness efforts increase customer demand for, and satisfaction with, Idaho Power's programs and activities. These activities include customer outreach, marketing, research, project development, and education programs. This category includes the Residential Energy Efficiency Education Initiative, Easy Savings Program, Commercial Education, and Educational Distributions.

### Building-Code Improvement

Since 2005, the State of Idaho has been adopting a state-specific version of the IECC. The Idaho Building Code Board convened another Energy Code Collaborative in late 2015 in an effort to address implementation of the new series of building-related codes.

The Idaho Building Code Board requested the collaborative review of the 2015 codes and suggested recommendations to the board regarding adoption of codes. The first meeting occurred on December 2, 2015 and three subsequent meetings occurred in 2016.

Idaho Power participated and offered support in those collaborative meetings, which was attended by members of the building industry, local building officials, code development officials, and other interested stakeholders. The Energy Code Collaborative is an ongoing effort in which Idaho Power will continue to participate. Additional meetings will be scheduled in 2017.

### Energy Efficiency Advisory Group

Formed in 2002, EEAG provides input on enhancing existing DSM programs and on implementing energy efficiency programs. Currently, EEAG consists of 13 members from Idaho Power's service area and the Northwest. Members represent a cross-section of customers from the residential, industrial, commercial, and irrigation sectors, as well as representatives from low-income households, environmental organizations, state agencies, public utility commissions, and Idaho Power. EEAG meetings are generally open to the public and attract a diverse audience. Idaho Power appreciates the input from the group, and acknowledges the commitment of time and resources the individual members give to participate in EEAG meetings and activities.

EEAG met four times in 2016: February 18, May 5, August 30, and November 3. Additionally, EEAG held two conference calls on February 16 and November 28. During these meetings, Idaho Power discussed and requested feedback on new program ideas and new measure proposals, marketing methods, and specific measure details; provided a status of the Idaho and Oregon Rider funding and expenses; gave an update of ongoing programs and projects; and supplied general information on DSM issues and other important issues occurring in the region. Idaho Power relies on input from EEAG to provide a customer and public-interest view of energy efficiency and demand

response programs and expenses. A summary of each meeting and phone call is below; the complete notes from the 2016 EEAG meetings are included in *Supplement 2: Evaluation*.

February 16, 2016: EEAG members participated in a confidential conference call to discuss the *2015 Flex Peak Program One-Time Report*. This report was submitted to the IPUC by May 7, 2016, and compares the current Flex Peak Program to the prior program managed by EnerNOC.

February 18, 2016: Darrel Anderson, President and CEO of Idaho Power, addressed the group and thanked members of EEAG for their time and guidance throughout the years. He commented that Idaho Power has benefited by having the EEAG as a resource that brings new thoughts and ideas about energy efficiency. CLEAResult presented results of the demand response program evaluations. Idaho Power sought feedback from the group on two programs: See ya later, refrigerator<sup>®</sup> and the Multifamily Direct Install project (Multifamily Energy Savings Program). The group supported continuing See ya later, refrigerator<sup>®</sup> in 2016, and provided good ideas for other measures that could be included in the Multifamily Direct Install project. Idaho Power also discussed its website redesign; spring 2016 residential energy efficiency ad campaign tactics, including a new customer pledge; and results from an **empowered** community survey to gauge customers' interest in making energy-saving improvements to their homes.

May 5, 2016: Idaho Power demonstrated its myAccount web tool, and handed out an abridged home assessment form for the group to fill out. The Energy Savings Pledge (later named the Smart-saver Pledge) was discussed and EEAG was asked for feedback on behavioral change options that could be included in the pledge. The group provided several options that pledge participants could choose from. Idaho Power presented its Program Planning Update, and asked EEAG for feedback on a couple of new residential ideas it is researching. The group suggested Idaho Power continues the Multifamily Direct Install project and continues to look for ways to encourage the installation of DHPs into new multi-family housing units if they appear to be cost-effective. The history of the Idaho and Oregon Rider was presented to the group and included the financial history for both Idaho and Oregon balances since their inception. Idaho Power provided EEAG with results from the spring residential energy efficiency ad campaign, further discussed plans for the Smart-saver Pledge, and reviewed Idaho Power's social media channels and specific energy efficiency posts and ads on each channel.

August 30, 2016: EEAG member and CSHQA president, Kent Hanway, hosted this meeting at the CSHQA office on Broad Street in Boise. Along with a presentation of the building's energy efficiency measures, EEAG members and guest were given a tour of the building. A presentation covering 2017 preliminary cost-effectiveness provided a summary of all programs and how anticipated changes may impact programs for 2017. Idaho Power updated the group on activities related to customer alerts and home energy reports, and presented the results of an analysis conducted by the company to quantify the estimated value of deferral of transmission and distribution investments that could occur as a result of energy-efficiency efforts. Idaho Power discussed results from an **empowered** community survey about the spring residential energy efficiency ad campaign, plans for the fall ad campaign, and 2017 marketing efforts.

November 3, 2016: EEAG members were given an update on the development of a home energy report pilot to be deployed in 2017. EEAG was asked for feedback on target audience type for these reports. The Commercial Program Performance presentation highlighted energy savings and participation and feedback was requested from EEAG regarding some possible changes to the Flex Peak Program for 2017. Idaho Power provided an update about its various surveys and how they impact marketing, shared results from the fall residential energy efficiency ad campaign and Smart-saver Pledge, discussed plans for new Commercial and Industrial Energy Efficiency Program ads, and shared some new initiatives and successes from 2016. The company presented the non-cost-effective aspects of the Home Improvement Program and advised EEAG of the company's plan no longer offer the program.

November 28, 2016: A conference call was held to discuss Idaho Power's recommendations to decrease the collection percentage of the Rider.

## Green Motors Initiative

Idaho Power participates in the Green Motors Practices Group's (GMPG) Green Motors Initiative (GMI). Under the GMI, service center personnel are trained and certified to repair and rewind motors in an effort to improve reliability and efficiency. If a rewind returns a motor to its original efficiency, the process is called a "Green Rewind." By rewinding a motor under this initiative, customers may save up to 40 percent when compared to buying a new motor. The GMI is available to Idaho Power's agricultural, commercial, and industrial customers.

Twenty-one service centers in Idaho Power's service area have the training and equipment to participate in the GMI, and perform an estimated 1,200 Green Rewinds annually. Of the 21 service centers, currently nine have signed on as GMPG members. The GMPG will work to expand the number of service centers participating in the GMI, leading to market transformation and an expected kWh savings in southern Idaho and eastern Oregon.

Under the initiative, Idaho Power pays service centers \$2 per hp for each National Electrical Manufacturers Association (NEMA)-rated motor up to 5,000 hp that received a verified Green Rewind. Half of that incentive is passed on to customers as a credit on their rewind invoice. The GMPG requires all member service centers to sign and adhere to the GMPG Annual Member Commitment Quality Assurance agreement. The GMPG is responsible for verifying quality assurance.

In 2016, a total of 37 motors were rewound under the GMI. Table 19 provides a breakdown of energy savings and the number of motors by customer segment.

Table 19. 2016 Green Motor Initiative savings, by sector and state

Sector	State	Number of Motors	Sum of kWh Savings
Irrigation	ID	22	72,871
	OR	1	746
<b>Irrigation Total</b>		<b>23</b>	<b>73,617</b>
Commercial and Industrial	ID	12	50,955
	OR	2	72,745
<b>Commercial and Industrial Total</b>		<b>14</b>	<b>123,700</b>
<b>Grand Total</b>		<b>37</b>	<b>197,317</b>

## Idaho Power's Internal Energy-Efficiency Commitment

Idaho Power continues to upgrade the company's substation buildings across its service area. Focus for 2017 will be to provide energy-efficient heating and cooling, and to develop a plan to replace all T-12 lighting with LED fixtures in substation buildings.

Renovation projects continued at CHQ in downtown Boise in 2016. The company remodeled the eighth floor, and exchanged the old T-12 parabolic lighting fixtures with T-8 lighting. Remodels continue to incorporate energy efficiency measures, such as lower partitions, lighting retrofits, and automated lighting controls. In 2017, Idaho Power plans to remodel the ninth floor of the CHQ.

Also in 2106, the new Twin Falls Operation Center was constructed to replace the 1951-built center used to house the South-East Region operations staff. The design incorporates LED lighting, energy-efficient heating and cooling by way of a VRF design, and lighting control that includes daylight harvesting to reduce power consumption. The building also features a rooftop solar array to offset the amount of energy the building uses from the grid.

In 2016, Idaho Power redesigned the HVAC delivery system for the Maintenance and Electrical Shops; construction on these projects is planned for 2018. Idaho Power estimates that with these improvements the shops may reduce their usage by 300,000 kWh in coming years.

Idaho Power continued its major sustainability initiative by installing more electric vehicle (EV) charging stations at the company's EV Workplace Charging Center at CHQ and at several operations centers. The company continues to provide a variety of models of EV charging stations to promote awareness, use, and information dissemination about EVs. More employees now have the opportunity to charge their EV while at work. In addition to adding more EVs to the Idaho Power fleet, employees' personal use of EVs will further promote the financial and environmental benefits of EVs.

Idaho Power's internal energy efficiency projects and initiatives are funded by non-rider funds.

## Local Energy Efficiency Funds

The purpose of LEEF is to provide modest funding for short-term projects and activities that do not fit within other categories of energy efficiency programs, but still provide energy savings or a defined benefit to the promotion of energy-efficient behaviors or activities.

Idaho Power received two applications for LEEF in 2016. Both applications were reviewed and found to be standard practice, and not appropriate for LEEF. A residential program specialist followed up with these applicants, and directed them to the residential energy efficiency resources found on Idaho Power's website. One project involved replacing all lighting in the applicant's house with LED lighting. The other project involved replacing single-pane windows with new, more energy-efficient windows.

## Market Transformation

Market transformation is an effort to change the existing market for energy efficiency goods and services by engaging and influencing large national companies to manufacture or supply more energy-efficient equipment. Market transformation can also attempt to identify barriers and opportunities to increase the market adoption of efficiency. Idaho Power achieves market transformation savings primarily through its participation in the NEEA.

### *Northwest Energy Efficiency Alliance*

Idaho Power has been a funding member of NEEA since its inception in 1997. NEEA's role in this process is to look to the future to find emerging opportunities and to create a path forward to make those opportunities a reality in the region.

NEEA's current, five-year funding cycle began 2015. In this cycle the 2015 to 2019 NEEA business plan is forecast to obtain 145 average megawatt (aMW) of regional energy savings at a cost savings of about \$3 million over the next five years to Idaho Power customers as compared to the previous five-year business plan. The NEEA plan also offered some optional programs and activities to prevent overlap of activities when local utilities have the capability to provide the same services at a lower cost or more effectively.

Idaho Power participates in all of NEEA's committees and workgroups including representation on the Regional Portfolio Advisory Committee and the Board of Directors. In 2016, Idaho Power continued to help with the implementation of the Commercial and Industrial Lighting Regional Market Plan.

NEEA performs several MPERs on various energy efficiency efforts each year. In addition to the MPERs, NEEA provides market-research reports, through third-party contractors, for energy efficiency initiatives throughout the Pacific Northwest. Copies of these reports are included on the CD accompanying *Supplement 2: Evaluation* and on NEEA's website under Market Effects Evaluation.

## NEEA Marketing

As stated in Idaho Power's agreement with NEEA for the 2015 to 2019 funding cycle: "Idaho Power will fund, create, and deliver specific market transformation activities for all initiatives that are relevant for the Idaho Power service area." In 2016, these activities included educating residential customers on heat pump technology and heat pump water heaters, and promoting reduced wattage T-8 lightbulbs to business customers.

Idaho Power placed an article about heat pump technology and included heat pump water heaters as an example in its summer *Energy Efficiency Guide*. The company also issued a *News Briefs* article titled *New, More-Efficient Heat Pump Water Heater!* on heat pump water heaters to media April 25, and promoted the products on social media and in the October issue of *Connections*.

To promote reduced wattage lightbulb replacement, Idaho Power published an article in its fall *Energy @ Work* newsletter, placed a promo pod linking to a newly developed flyer (PDF) on the company's Retrofits web page, and wrote an article that was included in BOMA's member email in November.

## Residential NEEA Activities

Idaho Power participates in the Residential Advisory Committee, Efficient Homes Workgroup, the Manufactured Homes Interest Group, the Retail Products Platform (RPP) Initiative, the DHP research project, the Smart Water Heat Initiative (previously known as the HPWH Initiative), Efficient Homes Workgroup, the Super Efficient Dryers Workgroup, the Northwest Regional Strategic Market Plan for Consumer Products group, and Northwest Regional Retail Collaborative. During 2016, NEEA combined the Efficient Homes Workgroup and the Manufactured Homes Interest Group and renamed it the Better Built NW Workgroup.

NEEA provides Better Built NW builder and contractor training, manages the regional-homes database, develops regional marketing campaigns, and coordinates energy-efficient new construction activities with utilities in Idaho, Montana, Oregon, and Washington.

In 2016, NEEA completed the sun setting of their ENERGY STAR® Homes Northwest program. All single-family and multi-family builders seeking ENERGY STAR certification must now go through the national EPA ENERGY STAR Homes program. NEEA will continue oversight of a regional database for utilities to access ENERGY STAR Home certifications for incentive payments and will continue working towards the creation of a single-family Residential Performance Path program to offer utilities flexibility in program design and the opportunity to capture all above building code savings on residential new construction projects.

In 2016, NEEA formed the Super Efficient Dryers Initiative to support the acceleration of heat pump dryers into the market and Idaho Power participated in the workgroup. The initiative focuses on influencing manufacturer product development and executing strategies to overcome the barriers of this new technology. Barriers include a high incremental cost, limited consumer awareness, and product availability. The initiative offers incentives to reduce the retail price. A second goal of the initiative is

lab and field-testing to better understand how heat pump dryers perform in real-world conditions, evaluate consumer preferences, and gather data to support RTF provisional energy savings.

Idaho Power participated in RETAC which met quarterly to review the emerging technology pipeline for BPA, NEEA, and the Northwest Power and Conservation Council (NWPCC) Seventh Power Plan. RETAC is developing a regional database to increase coordination among the utilities to identify and track emerging technologies; plan and conduct research; and develop, implement, and assess pilots and field demonstrations.

Idaho Power continued participation in the RBSA. The purpose of the RBSA is to determine common attributes of residential homes, and develop a profile of the existing residential buildings in the Northwest.

### **Commercial and Industrial NEEA Activities**

NEEA continued to provide support for commercial and industrial energy efficiency activities in Idaho in 2016, which included partial funding of the IDL for trainings and additional tasks.

The Idaho Building Code Board requested the Idaho Code Collaborative review the 2015 codes and make a recommendation to the board on adoption. NEEA facilitated the Code Collaborative meetings and Idaho Power participated.

NEEA facilitated regional webinars for the Commercial Code Enhancement (CCE) initiative for new construction to discuss how utilities can effectively align code changes and utility programs. NEEA is using the code collaborative in Idaho and Montana as examples of success for other regions.

NEEA facilitated the conference planning committee and, along with Idaho Power, supported the 2016 Idaho Energy and Green Building Conference held in Boise on November 1 and 2, 2016. Idaho Power had two active members on the conference planning committee.

NEEA's work on SEM in the commercial and industrial sectors continued in 2016. The primary focus in 2016 was to consolidate all of the SEM templates, guidelines, and documents into the new SEM Hub website.

NEEA's work with the Refrigerating Engineers & Technicians Association (RETA) on the RETA certified refrigeration energy specialist (CRES) certification process continued in 2016. A new CRES contractor was hired in 2016 to work with RETA marketing of the RETA CRES certification, improving the RETA CRES training materials, and improving the RETA CRES practice exams.

Idaho Power kept abreast on NEEA's initiatives in the commercial lighting arena via periodic conference calls and in-person meetings. Idaho Power continued participation as a member of the NEEA Commercial Lighting Program Manager Work Group.

The Reduced Wattage Lamp Replacement (RWLR) initiative achieved some success in 2016, especially in Idaho. NEEA worked with 20 branches across five electrical distributor organizations in Idaho Power's service area, with new distributors added to the initiative in 2016. Preliminary data shows

the 2016 market penetration of reduced wattage T-8 lightbulb in the company's service area is between 30 to 33 percent, which is higher than the average 22 percent penetration across all four Pacific Northwest states. Overall, linear fluorescent lightbulb sales continue to decline at roughly 10 percent per year. Market sales of linear LEDs are increasing, which is having an impact on the RWLR initiative; however, NEEA estimates 2017 will continue to see good participation from distributors in reduced wattage T-8 sales.

In 2016, the NEEA Top-Tier Trade Ally (TTTA) training was renamed NXT Level. Ultimately, the plan is to offer lighting trade allies throughout the region the opportunity for multi-tiered training, each level building on the one before, over the next few years. NEEA rolled out Level 1 on-line training to the Idaho Power service area June 2016. Level 1 is geared toward more seasoned trade allies. In October, the company's first trade ally completed the course and received the Level 1 designation. Several other trade allies in the Idaho Power service area are in process of taking the course.

Idaho Power continued participation in the Regional Strategic Market Planning Collaborative for commercial and industrial lighting. The collaborative formed in 2015 to create regional strategic market plans in four market segments. Commercial and industrial lighting was the first segment of focus because it was identified as the collaborative's top priority. Idaho Power is represented on a steering committee formed to monitor and oversee the progress of the regional commercial and industrial lighting plan.

The NEEA Existing Building Renewal (EBR) pilot project in Boise, which began in 2013 and phased through 2016, saw no significant results in 2016. The project has not resulted in any Idaho Power incentive applications.

NEEA completed several assessment studies related to irrigated agriculture to support their scanning activities. Idaho Power has kept apprised of these activities, and has reviewed each of these assessments. Copies of the reports are included on the CD accompanying *Supplement 2: Evaluation* and on NEEA's website under NEEA Market Effects Evaluations.

### **NEEA Funding**

In 2016, Idaho Power began the second year of the 2015 to 2019 *Regional Energy Efficiency Initiative Agreement* with NEEA. Per this agreement, Idaho Power is committed to fund NEEA based on a quarterly estimate of expenses up to the five-year total direct funding amount of \$16.5 million in support of NEEA's implementation of market transformation programs in Idaho Power's service area. Of this amount in 2016, 100 percent was funded through the Idaho and Oregon Riders.

In 2016, Idaho Power paid \$2,676,387 to NEEA. The Idaho jurisdictional allocation of the payments was \$2,542,567, while \$133,820 was paid for the Oregon jurisdiction. Other expenses associated with Idaho Power's participation in NEEA activities, such as administration and travel, were paid from Idaho and Oregon Riders.

Final NEEA savings for 2016 will be released in June 2017. Preliminary estimates reported by NEEA for 2016 indicate Idaho Power's share of regional market transformation MWh savings for 2016 is

24,616 MWh. These savings are reported in two categories; codes- and standards-related savings of 20,060 MWh and non-codes and standards related savings of 4,556 MWh.

In the *Demand-Side Management 2015 Annual Report*, preliminary funding share estimated savings reported were 21,900 MWh. The revised estimate included in this report for 2015 final funding share NEEA savings is 23,039 MWh. These saving include savings from code-related initiatives as well as non-code-related initiatives. Idaho Power relies on NEEA to report the energy savings and other benefits of NEEA's regional portfolio of initiatives. For further information about NEEA, visit their website at [nea.org](http://nea.org).

## Program Planning Group

In 2014, Idaho Power convened an internal PPG to explore new opportunities to expand current DSM programs and offerings. The group consisted of residential program specialists, commercial and industrial engineers, energy efficiency analysts, marketing specialists, energy efficiency program leaders, and the research and analysis leader. The PPG does not perform program execution. Instead, the group's role is to determine if a measure has energy-saving potential, has market adoption potential, and is potentially cost-effective.

Throughout 2016, the group met regularly to explore new ideas to promote energy efficiency including evaluating new potential programs and measures. Idaho Power incorporated five new ideas from the PPG into the overall portfolio of residential program offerings: 1) mailing energy efficiency kits, 2) initiating a multi-family direct-install project, 3) installing smart thermostats, and 4) distributing clothes drying racks for educational purposes. The first three offerings will continue to be available in 2017. Idaho Power will evaluate the drying rack offering for its long-term viability.

In the commercial sector, the company began the school cohort. In November 2016, Idaho Power recruited school districts to establish a structured energy program where each district will have an individualized initiative and develop a program to implement energy efficiency measures and behaviors at their schools.

Three other PPG ideas were presented to EEAG and are being considered for implementation in 2017: 1) Home Energy Reports, mailed to customers to inform them of their energy use and how it compares to others; 2) an on-line marketplace for customers to review and purchase energy-efficient appliances; and 3) installation of a thermostatic shower valve to reduce hot water use. Each of these measures has an element of behavior change.

Idaho Power will continue to use the PPG to review, evaluate, and deliver new energy efficiency offerings in 2017 and beyond.

## Regional Technical Forum

The RTF is a technical advisory committee to the NWPCC, established in 1999 to develop standards to verify and evaluate energy efficiency savings. Since 2004, Idaho Power has supported the RTF by

providing annual financial support, regularly attending monthly meetings, participating in sub-committees, and sharing research and data beneficial to the forum's efforts.

The forum is made up of both voting members and corresponding members from investor-owned and public utilities, consultant firms, advocacy groups, Energy Trust of Oregon, and BPA, all with varied expertise in engineering, evaluation, statistics, and program administration. The RTF advises the NWPC during the development and implementation of the regional power plan in regards to the following listed in the RTF charter:

- Developing and maintaining a readily accessible list of eligible conservation resources, including the estimated lifetime costs and savings associated with those resources and the estimated regional power system value associated with those savings.
- Establishing a process for updating the list of eligible conservation resources as technology and standard practices change, and an appeals process through which utilities, trade allies, and customers can demonstrate that different savings and value estimates should apply.
- Developing a set of protocols by which the savings and system value of conservation resources should be estimated with a process for applying the protocols to existing or new measures.
- Assisting the Council in assessing: 1) the current performance, cost and availability of new conservation technologies and measures; 2) technology development trends; and 3) the effect of these trends on the future performance, cost and availability of new conservation resources.
- Tracking regional progress toward the achievement of the region's conservation targets by collecting and reporting on regional research findings and energy savings annually.

When possible, Idaho Power uses the savings estimates, measure protocols, and supporting work documents provided by the RTF, and when the work products are applicable to the Idaho climate zones and load characteristics. In 2016, Idaho Power staff participated in all RTF meetings as a voting member and the RTF Policy Advisory Committee.

During 2016, RTF impacted measure changes include savings tier additions to DHPs, updates to multi-family weatherization and new construction measures, updates to low-flow showerhead savings, and the addition of connected or "smart" thermostats as a supported RTF measure. All implementations of changes were accounted for in planning and budgeting for 2017. Idaho Power considered the multi-family weatherization measure updates when it decided to sunset the Home Improvement Program. A complete list of RTF decisions in 2016 can be accessed at [rtf.nwccouncil.org](http://rtf.nwccouncil.org).

## Residential Energy Efficiency Education Initiative

Idaho Power recognizes the value of general energy efficiency awareness and education in creating behavioral change and customer demand for, and satisfaction with, its programs. The Residential Energy Efficiency Education Initiative (REEEI) promotes energy efficiency to the residential sector. The company achieves this by creating and delivering educational materials and programs that result in

wise and informed choices regarding energy use and increase Idaho Power's energy efficiency program participation.

REEEI continued to produce semiannual *Energy Efficiency Guides* in 2016. Idaho Power distributed these guides primarily via insertion in local newspapers and at events across Idaho Power's service area. The *Winter Energy Efficiency Guide* was published and distributed by 16 newspapers in Idaho Power's service area the week of January 26, in accordance with the new distribution plan outlined in 2015. The *Boise Weekly* also inserted the guide, increasing circulation by 30,000, which focused on ways to find the truth about energy-saving claims, seven ways to improve a home's energy efficiency, ventilation and lighting for optimum health and efficiency, and tips for hiring a home improvement contractor. The information was applicable to all residential customers, but the design was adapted and enhanced for particular usefulness and appeal to the senior population. Idaho Power included a story from the guide in the *January News Briefs* and promoted it that month on KPVI during the energy efficiency news segment.

The *Summer Energy Efficiency Guide* was delivered nearly 222,000 homes the week of July 24, 2016. This guide focused on saving energy as a family and highlighted why Idaho Power promotes energy efficiency, energy-saving computer settings, behavior change, smart technology, and making saving energy fun for the whole family. The guide also featured a mini home assessment so customers could gauge how energy efficient their behaviors were.

The release of the summer guide received public relations support through numerous communication channels, including an item in Idaho Power's weekly *News Briefs* email to all media in the Idaho Power service area on July 18 and 25, promotion on KTVB and KPVI in the July energy efficiency news segments, on Idaho Power's social media accounts, and using banner ads and native ads on the Idaho Statesman website. A banner ad appears as a traditional advertisement; a native ad is formatted as an on-line news article, with several paragraphs of text, but is, in fact, paid media. The native ad includes a disclaimer that reads "Advertisement."

In 2016, the company distributed over 6,000 guides, including issues from past years, at energy efficiency presentations and events, which continued to reinforce the overall value of these guides. On its website, Idaho Power provides a link to the most current seasonal guide, and to a list of historical guides.

REEEI distributed energy efficiency messages through a variety of other communication methods during 2016. Idaho Power increased customer awareness of energy-saving ideas via continued distribution of the third printing of the 96-page booklet *30 Simple Things You Can Do to Save Energy*, a joint publishing project between Idaho Power and The Earthworks Group. In 2016, the program distributed 2,595 English and 480 Spanish copies directly to customers. This was accomplished via community events and local libraries; by customer representatives during in-home visits; by participating contractors in the Home Improvement Program, Energy House Calls program, H&CE Program, and Fridge and Freezer Recycling Program; through direct web requests; and in response to inquiries received by Idaho Power's Customer Service Center. Agency partners also used the books to educate clients about Energy Efficiency. Additionally, more than 34,000 customers had an opportunity

to request the booklet and/or the most recent *Energy Efficiency Guide* when they ordered their ESK online.

Idaho Power continues to recognize that educated employees are effective advocates for energy efficiency and Idaho Power's energy efficiency programs. Idaho Power customer relations and energy-efficiency staff reached out to each of Idaho Power's geographical regions and the Customer Service Center to speak with customer representatives and other employees to discuss educational initiatives and answer questions about the company's energy efficiency programs.

The Kill A Watt™ Meter Program remained active in 2016. Idaho Power's Customer Service Center and field staff continued to encourage customers to learn about the energy used by specific appliances and activities within their homes by visiting a local library to check out a Kill A Watt meter. The Kill A Watt meters were mentioned on live television studio news programs on KTVB and KPVI in Idaho Power's monthly energy efficiency segments.

As in previous years, Idaho Power continued to strengthen the energy education partnership with secondary school educators through continued participation on the Idaho Science, Technology, Engineering and Mathematics (iSTEM) Steering Committee. In 2016, 16 teachers completed the four-day, two-credit professional development seminar, Energy for Future Citizens, facilitated by Idaho Power and co-sponsored by Intermountain Gas and the Idaho National Laboratory (INL). Among other things, participating teachers received a classroom kit containing Kill A Watt meters and other tools to facilitate student learning related to energy efficiency and wise energy use.

Idaho Power continued to engage customers in energy efficiency discussions at many community events throughout Idaho Power's service area. In February, Idaho Power participated in the Smart Women, Smart Money conference for the second year and educated nearly 2,000 women about the benefits of energy-efficient choices and LED lighting. In February, March, April, and May Idaho Power participated in the Twin Falls Home and Garden Show, the College of Southern Idaho's Sustainability Show, the Centennial Ribbon Cutting at the Twin Falls Visitor Center, Platt's Super Tool Day, Pocatello's Spring Home Show and the Portneuf Valley Community Environmental Fair—actively promoting wise energy use and participation in energy efficiency programs while distributing over 16,000 LED lightbulbs at these specific events.

In September 2016, Idaho Power participated in the FitOne Expo in Boise, Idaho. The event continued to be important to the initiative due to the size of the audience and because Idaho Power's prior participation confirmed the demographics of attendees appear to align with the company's residential energy efficiency target audience. In 2016, Idaho Power staff at the event once again focused attendee attention on the benefits of LED lighting technology, distributed LED lightbulbs, and promoted participation in the ESK program.

Idaho Power further increased its energy efficiency presence in the community by providing energy efficiency and program information through 92 outreach activities, including events, presentations, trainings, and other activities. In addition, Idaho Power customer representatives delivered 189 presentations to local organizations addressing energy efficiency programs and wise

energy use. In 2016, Idaho Power's Community Education team provided 91 presentations on *The Power to Make a Difference* to 2,350 students and 53 classroom presentations on *Saving a World Full of Energy* to 1,411 students. The community education representatives and other staff also completed 14 senior citizen presentations on energy efficiency programs and shared information about saving energy to 592 senior citizens in the company's service area. Additionally, Idaho Power's energy efficiency program managers responded with detailed answers to 364 customer questions about energy efficiency and related topics received via Idaho Power's website.

As part of National Energy Awareness Month in October, Idaho Power held its sixth annual student art contest in the Idaho Power service area, bringing energy education into the classroom and inspiring students and families to think more about energy. This year, the contest set a new record with more than 2,239 entries representing all regions. The contest, which featured "Ways to Save Energy" as one of the highlighted categories, was promoted in a late September *News Briefs* and results were publicized in *Connections*. Regional and overall winning students and their teachers were recognized.

The Residential Energy Efficiency Education Initiative continued to provide energy efficiency tips in response to media inquiries and in support of Idaho Power's #TipTuesday posts. In addition to supplying information for various Idaho Power publications, such as the *News Scans* weekly employee newsletter, the *Connections* customer newsletter, and Idaho Power's Facebook page, energy efficiency tips, and content was provided for weekly *News Briefs* and monthly KTVB (Boise) and KPVI (Pocatello) live news segments.

The initiative completed the program design phase of the ESK program and implemented the new program. Each kit was shipped with a mini-home assessment to cross-market other energy efficiency programs, promote the use of myAccount and help families learn about other energy-saving behavior changes. Savings and expenses have been reported under Educational Distributions.

The initiative continued to coordinate LED lightbulb distributions aimed at getting the newest lighting technology into customer hands along with customer education and answers to their common questions. At events and presentations, company staff distributed over 24,900 LEDs in custom packaging that highlighted the advantages of energy-efficient lighting and encouraged participation in Idaho Power's myAccount on-line portal. LED lightbulbs were mentioned on nine of the news segments on KTVB and KPVI. The energy savings resulting from this effort and from the SEEK for the school year 2015 to 2016, are reported in the Educational Distributions program section of this report.

In 2016, the initiative implemented the Drying Rack Pilot Project—a behavioral change program with the goal of helping customers reduce their automatic clothes dryer use by 25 percent or more. Educational messages to support the behavior change were delivered to customers at the point of enrollment, when drying racks were picked up and during the project period. Additional information about the project can be found in the Educational Distributions program in this report.

In the fall, the initiative conducted a survey with the **empowered** community to learn more about customers' shower behaviors—in particular, details around how they warm up the water prior to taking a shower. Information from the survey may be used to improve potential future offerings such as the

addition of a thermostatic shower valve as an educational distribution option. A copy of the survey can be found in *Supplement 2: Evaluation*.

The initiative's 2017 goals are to increase program participation and promote education and energy saving ideas that result in energy-efficient, conservation-oriented behaviors and choices. In addition to producing and distributing educational materials, the initiative will continue to manage the company's Educational Distributions program responsible for distributing educational measures that have associated savings. Examples of activities conducted under Educational Distributions include LED lighting education, distribution of LED lightbulbs to customers, the SEEK program, the Drying Rack Project and the ESK program. In addition to these activities, the initiative plans to implement a home energy report pilot project.

The initiative will continue to work with the PPG to explore additional behavioral program opportunities that may include distribution of thermostatic shower valves, increased promotion of myAccount, or a pilot program to test other behavioral messages.

### ***Evaluation and Best Practices Review***

In 2016, the company contracted with Leidos to perform a process evaluation and best practices review of the REEEI. Leidos found that REEEI is comprised of 23 different activities, efforts and elements that educate, inform, and persuade residential electric customers to install energy-efficient measures and to take other actions that decrease energy use. They also found the initiative both investigates and engages in various behavioral change strategies.

Leidos also found Idaho Power has a comprehensive presence on both traditional and social media channels. The 23 initiative elements reach over 415,000 customers in a variety of ways ranging from: 1) in-person contacts and presentations, courtesy of five community educational and approximately 20 customer representatives in the field daily; 2) newsletters, guides, mailers, conventional broadcasting, social media; and 3) gamification reward systems, sponsorships, educational materials and training.

Interviews with Idaho Power staff and initiative efforts indicate a strong focus on driving customers to use the myAccount on-line portal located on the company website, where customers check on energy use via near real-time smart-meters, billing and account information with links to tools, rebates and other resources that aid in understanding their energy use and reduction strategies. Daily customer logins to myAccount have steadily increased over the last four and a half years, from 2,000 logins in mid-2012, to about 5,000 in late-2016. Moreover, the number of myAccount registrations per month is also increasing, from 2,000 to 4,000 accounts per month in 2010 through 2011, up to 3,000 to 5,000 per month more recently.

Idaho Power is marketing energy-savings programs and activities by linking them to home improvement, money savings, comfort, and other NEBs to capture interest in energy efficiency and move it to top-of-mind. Surveys conducted with external program managers, subject-matter experts, and Idaho Power staff rated their customers' non-energy motivational drivers on a 10-point scale.

“Saving money” was rated highest (9.4), followed by improved comfort (9.1), health and safety (7.6), and being/feeling “green” and reducing environmental impacts (7.3).

External program managers, subject-matter experts, and Idaho Power staff rated marketing channels that involve person-to-person interaction and active learning environments higher than more passive, informal channels, to reach and educate customers. On a 10-point scale, situations where strong in-group social identity exists were rated most effective/useful (8.0), followed by on-line customer utility accounts (7.7), universities and college settings (7.6), public or community events, on-line energy dashboards and smart or real-time meters (all 7.3).

Leidos estimates conservatively that Idaho Power staff conducted over 590 in-person (or webinar) outreach activities, training sessions and events recorded in the Outreach Tracker database (from early 2012 to mid-2016) with an average attendance of 8091 people per event.

The SEEK and *The Power to Make a Difference* presentation (given by Idaho Power staff 124 times to 3,359 students in 2015) are also features of REEEI. Both received numerous positive comments from customers and build strong customer-utility relations. “The children always express that they tried everything included [in the kits] with their parents or family members. The adults express they are happy to have the free materials especially the lightbulbs and showerheads...teachers cannot thank us enough for this program!” Eighteen high school teachers participated in a three-day professional development seminar (facilitated by iSTEM) that empowered teachers with information and classroom tools to teach students to think critically about energy, including; the science of energy, energy generation and sources, wise energy use and social impacts.

A literature review of best practices regarding energy education programs was performed and indicated there are four basic types of behavioral change programs and strategies: 1) informational programs, 2) socially interactive approaches, 3) education and training, and 4) a stacked approach. Leidos states the four types of behavioral change strategies are well represented in the breadth of REEEI elements described in the final report.

The final report can be found in *Supplement 2: Evaluation*.

## University of Idaho Integrated Design Lab

Idaho Power is a founding supporter of the IDL. The IDL is dedicated to the development of high-performance, energy-efficient buildings in the Intermountain West. Idaho Power has worked with the IDL since its inception in 2004 to educate the public about how energy-efficient business practices benefit the business and the customer. In 2016, Idaho Power entered into an agreement with the IDL to perform the following tasks and services.

### **Foundational Services**

The goal of this task was to provide energy efficiency technical assistance and project-based training to building industry professionals and customers. When the IDL receives requests for their involvement in

building projects, the projects are categorized into one of three types. Phase I projects are simple requests that can be addressed with minimal IDL time. Phase II projects are more complex requests that require more involvement and resources from the lab. Phase III projects are significantly more complex and must be co-funded by the customer.

In 2016, the IDL provided technical assistance on a total of 38 projects in the Idaho Power service area. There were 32 Phase I projects, five Phase II projects, and one Phase III project. An additional three projects, currently in early stages, and the full scope of work is yet to be determined. Overall, 44 percent of the projects were on new buildings, 38 percent were on existing buildings and 18 percent were not building specific. The report is located in the IDL section of *Supplement 2: Evaluation*.

### **Lunch & Learn**

The goal of the Lunch & Learn task was to educate architects, engineers, and other design and construction professionals about energy efficiency topics through a series of educational lunch sessions.

In 2016, the IDL scheduled 20 technical training lunches in Boise, and Ketchum. The trainings were coordinated directly with architecture and engineering firms and organizations; a total of 161 architects, engineers, interior designers, project managers, and others attended.

Eighteen lunches were offered in Boise, and two in Ketchum. The topics of the lunches (and number of each) were: The Classroom of the Future: A DOE project (1); New Design Recommendations for Exterior Lighting (1); Case Study—Daimler Truck North America (1); Passive House Standard for Multifamily Projects (1); Life Sciences Building Path to High-Performance Design and Construction (1); Integrated Design Principles (1); Daylight Performance Metrics for Human Health, Productivity, and Satisfaction (1); Cold Feet: Managing Controls and Condensation with Simulating Radiant Slab Cooling (1); Daylight in Buildings: Schematic Design Methods (1); Radiant Heating and Cooling Design Considerations (1); Benchmarking and Energy Goal Setting (1); Integrated Design Case Studies (2); Hybrid Ground Source Heat Pump (2); and Daylight in Buildings: Getting the Details Right (5). The report is located in the IDL section of *Supplement 2: Evaluation*.

### **Building Simulation Users Group**

The goal of this task was to facilitate the Idaho BSUG, which is designed to improve the energy efficiency-related simulation skills of local design and engineering professionals.

In 2016, six monthly BSUG sessions were hosted by IDL. The sessions were attended by 73 professionals in person and were made available remotely, attended by 48 professionals. Evaluation forms were completed by attendees for each session. On a scale of 1 to 5, with 5 being “excellent” and 1 being “poor,” analyzing results from the first six questions, the average session rating was 4.34 for 2016. For the final question “The content of the presentation was...” on a scale of 1 to 5, with 1 being “too basic,” 3 being “just right,” and 5 being “too advanced,” the average session rating was 3.15 for 2016.

Each presentation was archived on the BSUG 2.0 website along with general BSUG-related content. The BSUG 2.0 site logged 994 page views with 234 specific to Idaho users in 2016. The report is located in the IDL section of *Supplement 2: Evaluation*.

### ***New Construction (Building Efficiency) Verification***

The goal of this task was to continue random installation verification of over 10 percent of New Construction program participants who received incentives. This consisted of conducting a full review of documentation and complete on-site inspections to validate whether noted systems and components had been installed. The purpose of this verification was to confirm program guidelines and requirements were adequately facilitating participants to provide accurate and precise information with regard to energy efficiency measure installations.

This task also included the review of all daylight photo-control incentives to verify site conditions and improve the quality of design and installation.

The IDL completed on-site field verifications for the New Construction program as summarized in the New Construction Customer Satisfaction and Evaluations section presented earlier in this report. The verification report is located in the IDL section of *Supplement 2: Evaluation*.

### ***Tool Loan Library***

The TLL gives customers access to equipment that enables them to measure and monitor energy consumption on various systems within their operation. The goal of this task was to operate and maintain measurement equipment, including a web-based equipment tool loan-tracking system, and to provide technical training on how each tool is intended to be used.

The inventory of the TLL now consists of over 900 individual pieces of equipment. In 2016, two new tools and eight manuals were added to the library. Additionally, 25 tools were calibrated in 2016. The tools and manuals are available for customers, engineers, architects, and contractors in Idaho Power's service area to borrow at no cost to aid in the evaluation of energy efficiency projects and equipment they are considering.

There were 49 tool loan requests in 2016, which included a total of 206 tools loaned. The tools were loaned to 30 unique customers, including engineering firms, equipment representatives, educational institutions, industrial plants, and office/commercial facilities. The report is located in the IDL section of *Supplement 2: Evaluation*.

### ***Building Metrics Labeling***

The goal of this task was to continue the support and promotion of the Building Metrics Labeling (BML) sheet, a graphical display of four building metrics on a single sheet that was developed in a task that began in 2012. The metrics displayed are Energy Use Intensity, ENERGY STAR<sup>®</sup> score, Walk Score<sup>®</sup>, and Space Daylit Area. The purpose of the BML sheet is to increase awareness of building energy use and to promote energy efficiency during the sale or lease of commercial properties. The final version of the BML tool became available for public use in early 2014.

The IDL continued support and maintenance of the sheet in 2016. The tool was discussed and/or flyers were distributed at twenty Lunch & Learn presentations to architecture or engineering firms and organizations, multiple Central Addition Planning meetings hosted by the USGBC, six BSUG events, and during calls or visits to five building owners within the Central Addition (LIV District). One-on-one support was also available if requested, but no requests were made in 2016. The report is located in the IDL section of *Supplement 2: Evaluation*.

### **Heat Pump Calculator/Climate Design Tools**

This task was a continuation of work done in a task that began in 2013 and continued through 2016. The goal of the original task was to develop an Excel-based heat pump analysis tool to calculate energy use and savings based on site-specific variables for commercial buildings. Previously, IDL identified a lack of sophisticated heat pump energy-use calculators available with the capability of comparing the energy use of heat pumps in commercial buildings against other technologies in a quick, simple fashion.

The calculator has been updated to reflect feedback from validation testing, including an improved user interface and the ability to integrate Typical Meteorological Year, version three (TMY3) weather files for locations where that data is available. A few years ago, the IDL completed a set of Climate Design Tools intended to inform sustainable design and calculate the impacts of five innovative types of systems: earth tubes, passive heating, cross ventilation, stack ventilation, and night flush ventilation/thermal mass. In 2015, the IDL integrated three of the five climate design tools into the Heat Pump Calculator. This unification produced a single platform life-cycle analysis tool for several energy efficiency measures not currently well-supported with other tools in the industry.

The work in 2016 included the unification of two additional climate design tools to the calculator and the addition of seven unique weather files for sites around Idaho. The report for this task is located in the IDL section of *Supplement 2: Evaluation*.

### **Daylight Training**

New in 2016, this task involved advance preparation work to provide daylight training sessions for local professionals in 2017. The training will enhance knowledge of, and appreciation for, daylight, and keep professionals informed of the latest advances in daylighting technologies.

The 2016 preparation included recommissioning lighting controls in the IDL, gathering of installed lighting controls manuals, writing a protocol for demonstration, and reviewing new lighting control technologies. A market-needs assessment was performed in the third quarter of 2016 to determine the need for a daylight training class, as well as to help develop the curriculum. Initial marketing began in November 2016 for the 2017 sessions. The report for this task is located in the IDL section of *Supplement 2: Evaluation*.

**2017 IDL Strategies**

In 2017, the IDL will continue or expand work on the Foundational Services, Lunch & Learn sessions, BSUG, Building Efficiency Verifications, TLL, Heat Pump Calculator, and Daylight Training tasks. IDL will also provide work on one new task in 2017, an Absorption Chiller Feasibility Study.

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## REGULATORY OVERVIEW

Idaho Power believes there are three essential components of an effective regulatory model for DSM: 1) the timely recovery of DSM program costs, 2) the removal of financial disincentives, and 3) the availability of financial incentives. By working with its stakeholders and regulators through negotiations and filings, Idaho Power seeks to move DSM regulatory treatment toward achieving all of these goals.

### Timely Recovery of DSM Program Costs: Energy Efficiency Rider and Prudence Determination of Expenditures

Since 2002, Idaho Power has recovered most of its DSM program costs through the Rider with the intended result of providing a more timely recovery of DSM expenditures. In addition, since January 1, 2012, Idaho demand response program incentives expenses have been included in base rates and tracked in the annual PCA mechanism.

#### ***Annual DSM Expense Review Filing and Order No. 33583***

On March 15, 2016, Idaho Power filed Case No. IPC-E-16-03 with the IPUC requesting an order finding the company had prudently incurred \$35,196,964 in DSM expenses in 2015, including \$28,495,701 in Rider expenses and \$6,701,263 in demand response program incentives. The filing included three reports: *Demand-Side Management 2015 Annual Report, Supplement 1: Cost-Effectiveness*, and *Supplement 2: Evaluation*. Due to previous IPUC decisions in Order Nos. 32667, 32690, and 32953 to defer Idaho Power's request to deem prudent the increases in the company's Rider-funded labor-related expenses for 2011 and 2012, Idaho Power did not request a prudence determination for labor-related expenses of \$441,856 in the 2015 filing. The 2015 labor-related expenses of \$441,856 bring the cumulative balance of increases in Rider-funded labor-related expenses that have not yet received a prudence determination to \$1,313,407 through 2015. Idaho Power plans to request a prudence determination on these amounts in its 2016 DSM prudence request.

In Order No. 33583, dated September 14, 2016, the IPUC deemed \$35,196,964 as prudently incurred.

Since 2012, the company has experienced a mismatch in Rider funding levels compared to expenditures in that the Rider has been collecting more than the company has been spending on its DSM efforts. As part of Order No. 33583, the IPUC directed Idaho Power to work with staff and other stakeholders to examine an adjustment to the Rider percentage and to submit a proposal for revising the Rider percentage to the commission no later than December 30, 2016.

Following collaboration with the parties to the case (staff, Industrial Customers of Idaho Power [ICIP] and Idaho Conservation League [ICL]) and a conference call with EEAG, on December 22, 2016, Idaho Power filed an application in Case No. IPC-E-16-33 requesting an order approving: 1) a decrease to the Rider collection percentage from 4 to 3.75 percent of base rate revenues, effective March 1, 2017; 2) a \$13 million refund of previously collected Rider funds to be included in the 2017/2018 PCA effective June 1, 2017, and 3) the elimination of the annual transfer of \$4 million of Rider funds through

the PCA. The annual transfer of \$4 million of Rider funds through the PCA is more fully described in the following paragraph.

### **Energy Efficiency Rider-Funds Transfer**

On April 15, 2016, Idaho Power filed the annual PCA Case No. IPC-E-16-08 with the IPUC. As part of that case, the company proposed that the commission approve a transfer of \$3,970,036 from the Rider to customers as a credit, or reduction, in the 2016/2017 PCA on customers' bills. In Order No. 33526, the commission approved the transfer. This transfer is needed to maintain the revenue neutrality associated with the June 2014 update to the normalized level of net power supply expense included in base rates approved by Order No. 33000.

### **Removal of Financial Disincentives: Fixed-Cost Adjustment**

To address the removal of financial disincentives, Idaho Power has in place a fixed-cost adjustment (FCA) mechanism in Idaho. Under the FCA, rates for Idaho residential and small general-service customers are adjusted annually up or down to recover or refund the difference between the fixed costs authorized by the IPUC in the most recent general rate case and the fixed costs Idaho Power received the previous year through actual energy sales. This mechanism removes the financial disincentive that exists when Idaho Power promotes energy efficiency programs designed to reduce customer usage. The FCA addresses, for residential and small general-service customers, the percentage of fixed costs that are recovered through their volumetric energy charges.

On May 27, 2016, the IPUC issued Order No. 33527 approving the company's request to implement FCA rates beginning June 1, 2016, for the 2015 fixed-cost deferrals. The overall rate adjustment was a 2.2 percent increase for residential and small general-service customers to collect a combined \$28 million. This adjustment was an increase of \$11 million from the previous year's FCA. Residential customers pay an FCA of 0.5416 cents per kWh, while small general-service customers pay an FCA of 0.6875 cents per kWh. The rate will be in place until May 31, 2017.

### **Promotion of Energy Efficiency through Electricity Rate Design**

Idaho Power believes rates offered to customers should reflect their cost of service to provide cost-based price signals, and encourage the wise and efficient use of energy.

Since 2012, Idaho Power has offered a Time-of-Day (TOD) Pilot pricing plan to residential customers in Idaho. The overall goal of this TOD pricing plan is to use the AMI system to offer customers a choice of pricing plans while providing them with tools to manage their energy use, to provide the company with the opportunity to further study the effects of a time-variant rate on customers' use, and to help shape the company's future communication efforts. The plan provides participants the opportunity to shift their usage from higher-priced, on-peak time periods to lower-priced, off-peak time periods and possibly lower their bills. As of the end of 2016, approximately 1,300 Idaho customers were TOD plan participants. A description of this plan is at Idaho Power's website ([idahopower.com/TOD](http://idahopower.com/TOD)).

## GLOSSARY OF ACRONYMS

A/C—Air Conditioning/Air Conditioners  
ADM—ADM Associates, Inc.  
Ads—Advertisement  
AEG—Applied Energy Group  
AMI—Advanced Metering Infrastructure  
aMW—Average Megawatt  
ARCA—Appliance Recycling Center of America  
ASHRAE—American Society of Heating, Refrigeration, and Air Conditioning Engineers  
B/C—Benefit/Cost  
BCA—Building Contractors Association  
BCASEI—Building Contractors Association of Southeast Idaho  
BCASWI—Building Contractors Association of Southwestern Idaho  
BML—Building Metrics Labeling  
BOMA—Building Owners and Managers Association  
BOP—Builder Option Package  
BPA—Bonneville Power Administration  
BPI—Building Performance Institute  
BSUG—Building Simulation Users Group  
CAP—Community Action Partnership  
CAPAI—Community Action Partnership Association of Idaho, Inc.  
CAZ—Combustion Appliance Zone  
CCE—Commercial Code Enhancement  
CCOA—Aging, Weatherization and Human Services  
CCNO—Community Connection of Northeast Oregon, Inc.  
CEI—Continuous Energy Improvement  
CEL—Cost-Effective Limit  
CFL—Compact Fluorescent Lamp/Lightbulb  
CFM—Cubic Feet per Minute  
CHQ—Corporate Headquarters (Idaho Power)  
CINA—Community in Action  
CLEAResult—CLEAResult Consulting, Inc.  
COP—Coefficient of Performance  
CR&EE—Customer Relations and Energy Efficiency  
CRES—Certified Refrigeration Energy Specialist  
DHP—Ductless Heat Pump  
DOE—Department of Energy  
DSM—Demand-Side Management  
EA5—EA5 Energy Audit Program  
EBR—Existing Building Renewal  
ECM—Electronically Commutated Motors

EEAG—Energy Efficiency Advisory Group  
EICAP—Eastern Idaho Community Action Partnership  
EL ADA—El Ada Community Action Partnership  
EM&V—Evaluation, Measurement, and Verification  
EPA—Environmental Protection Agency  
ESK—Energy-Savings Kit  
EV—Electric Vehicle  
FCA—Fixed-Cost Adjustment  
ft<sup>2</sup>—Square Feet  
ft<sup>3</sup>—Cubic Feet  
GIS—Geographic Information System  
GMI—Green Motors Initiative  
GMPG—Green Motors Practice Group  
gpm—Gallons per Minute  
H&CE—Heating & Cooling Efficiency Program  
HP—Hewlett Packard  
hp—Horsepower  
HPS—Home Performance Specialist  
HPWH—Heat Pump Water Heater  
HSPF—Heating Seasonal Performance Factor  
HUD—Housing and Urban Development  
HVAC—Heating, Ventilation, and Air Conditioning  
IBCA—Idaho Building Contractors Association  
IBOA—International Building Operators Association  
ICIP—Industrial Customers of Idaho Power  
ICL—Idaho Conservation League  
IDHW—Idaho Department of Health and Welfare  
IDL—Integrated Design Lab (in Boise)  
IECC—International Energy Conservation Code  
INL—Idaho National Laboratory  
IPMVP—International Performance Measurement and Verification Protocol  
IPUC—Idaho Public Utilities Commission  
IRP—Integrated Resource Plan  
ISHE—International Society of Healthcare Engineers  
iSTEM—Idaho Science, Technology, Engineering and Mathematics  
JACO—JACO Environmental, Inc.  
kW—Kilowatt  
kWh—Kilowatt-hour  
LED—Light-Emitting Diode  
LEEF—Local Energy Efficiency Funds  
LIHEAP—Low Income Home Energy Assistance Program  
MOU—Memorandum of Understanding  
MPER—Market Progress Evaluation Report

MVBA—Magic Valley Builders Association  
MW—Megawatt  
MWh—Megawatt-hour  
MWSOC—Municipal Water Supply Optimization Cohort  
n/a—Not Applicable  
NEB—Non-Energy Benefit  
NEEA—Northwest Energy Efficiency Alliance  
NEEM—Northwest Energy Efficient Manufactured  
NEMA—National Electrical Manufacturers Association  
NPR—National Public Radio  
NSH—Next Step Home  
NTG—Net to Gross  
NWPCC—Northwest Power and Conservation Council  
O&M—Operation and Maintenance  
OHCS—Oregon Housing and Community Services  
OPUC—Public Utility Commission of Oregon  
ORS—Oregon Revised Statute  
OSV—On-Site Verification  
PCA—Power Cost Adjustment  
PCT—Participant Cost Test  
PLC—Powerline Carrier  
PNWS—AWWA—Pacific Northwest Section American Water Works Association  
PPG—Program Planning Group  
PRV—Pressure Regulating Valve  
PSC—Permanent Split Capacitor  
PTCS—Performance Tested Comfort System  
QA—Quality Assurance  
QC—Quality Control  
RAP—Resource Action Programs  
RBSA—Residential Building Stock Assessment  
REEEI—Residential Energy Efficiency Education Initiative  
RESNET—Residential Services Network  
RETA—Refrigerating Engineers and Technicians Association  
RETAC—Regional Emerging Technologies Advisory Committee  
Rider—Idaho Energy Efficiency Rider and Oregon Energy Efficiency Rider  
RIM—Ratepayer Impact Measure  
RPP—Retail Products Platform  
RTF—Regional Technical Forum  
RWLR—Reduced Wattage Lamp Replacement  
SCCAP—South Central Community Action Partnership  
SCE—Streamlined Custom Efficiency  
SEEK—Students for Energy Efficiency Kit  
SEEM—Simplified Energy Enthalpy Model

SEICAA—Southeastern Idaho Community Action Agency  
SEM—Strategic Energy Management  
SIR—Savings-to-Investment Ratio  
SRVBCA—Snake River Valley Building Contractors Association  
SWIOS—Southwest Idaho Operators Conference  
TLED—Tube LED  
TLL—Tool Loan Library  
TMY3—Typical Meteorological Year, version three  
TOD—Time of Day  
TRC—Total Resource Cost  
TRM—Technical Reference Manual  
TTTA—Top-Tier Trade Ally  
UC—Utility Cost  
UES—Unit Energy Savings  
UM—Utility Miscellaneous  
US—United States  
USGBC—US Green Building Council  
VFD—Variable-Frequency Drive  
VRF—Variable Refrigerant Flow  
W—Watt  
WAP—Weatherization Assistance Program  
WAQC—Weatherization Assistance for Qualified Customers  
WEFTEC—Water Environment Federation Technical Exhibition and Conference  
WHF—Whole-House Fan  
WSOC—Water Supply Optimization Cohort  
WWECC—Wastewater Energy Efficiency Cohort

# APPENDICES

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### Appendix 1. Idaho Rider, Oregon Rider, and NEEA payment amounts (January–December 2016)

<b>Idaho Energy Efficiency Rider <sup>a</sup></b>	
2016 Beginning Balance	\$ 6,554,074
2016 Funding plus Accrued Interest as of 12-31-16	39,437,692
<b>Total 2016 Funds</b>	<b>45,991,766</b>
2016 Expenses as of 12-31-16	(31,291,579)
Rider Transfer to PCA (IPUC Order 33306)	(3,970,036)
<b>Ending Balance as of 12-31-2016</b>	<b>\$ 10,730,151</b>
<b>Oregon Energy Efficiency Rider</b>	
2016 Beginning Balance	\$ (4,482,485)
2016 Funding plus Accrued Interest as of 12-31-16	1,099,211
<b>Total 2016 Funds</b>	<b>(3,383,273)</b>
2016 Expenses as of 12-31-16	(2,168,868)
<b>Ending Balance as of 12-31-2016</b>	<b>\$ (5,552,141)</b>
<b>NEEA Payments</b>	
2016 NEEA Payments as of 12-31-2016	\$ 2,676,387
<b>Total</b>	<b>\$ 2,676,387</b>

<sup>a</sup> Liability accounts

**Appendix 2. 2016 DSM expenses by funding source (dollars)**

Sector/Program	Idaho Rider	Oregon Rider	Non-Rider Funds	Total
<b>Energy Efficiency/Demand Response</b>				
<b>Residential</b>				
A/C Cool Credit .....	\$ 632,079	\$ 41,833	\$ 429,383	\$ 1,103,295
Easy Savings .....	–	–	127,587	127,587
Educational Distributions .....	2,334,206	56,164	2,514	2,392,884
Energy Efficient Lighting .....	3,009,970	63,200	7,538	3,080,708
Energy House Calls .....	188,253	15,815	2,368	206,437
ENERGY STAR® Homes Northwest .....	138,203	1,510	2,445	142,158
Fridge and Freezer Recycling Program (See ya later, refrigerator®) .....	250,535	4,555	2,826	257,916
Heating & Cooling Efficiency Program/DHP Pilot .....	545,454	27,184	22,275	594,913
Home Energy Audit .....	278,959	–	10,853	289,812
Home Improvement Program .....	309,799	–	14,225	324,024
Multifamily Energy Savings Program .....	55,758	–	3,288	59,046
Oregon Residential Weatherization .....	–	3,906	24	3,930
Rebate Advantage .....	103,056	6,392	1,602	111,050
Shade Tree Program .....	70,669	–	5,973	76,642
Simple Steps, Smart Savings™ .....	147,055	3,535	3,194	153,784
Weatherization Assistance for Qualified Customers .....	–	–	1,289,809	1,289,809
Weatherization Solutions for Eligible Customers .....	1,226,540	56,571	40,681	1,323,793
<b>Commercial/Industrial</b>				
Building Efficiency .....	1,863,584	42,559	25,079	1,931,222
Custom Efficiency .....	7,664,563	237,146	80,916	7,982,624
Easy Upgrades .....	4,791,852	228,834	19,505	5,040,190
Flex Peak Program .....	105,116	247,897	414,984	767,997
Oregon Commercial Audit .....	–	7,717	–	7,717
<b>Irrigation</b>				
Irrigation Efficiency Rewards .....	1,672,328	634,101	65,923	2,372,352
Irrigation Peak Rewards .....	1,082,113	218,906	6,299,056	7,600,076
<b>Energy Efficiency/Demand Response Total .....</b>	<b>\$ 26,470,093</b>	<b>\$ 1,897,824</b>	<b>\$ 8,872,049</b>	<b>\$ 37,239,965</b>
<b>Market Transformation</b>				
NEEA .....	2,542,567	133,820	–	2,676,387
<b>Market Transformation Total .....</b>	<b>\$ 2,542,567</b>	<b>\$ 133,820</b>	<b>\$ –</b>	<b>\$ 2,676,387</b>
<b>Other Programs and Activities</b>				
Residential Energy Efficiency Education Initiative .....	259,301	12,071	18,806	290,179
Energy Efficiency Direct Program Overhead .....	238,767	16,965	37,307	293,039
<b>Other Programs and Activities Total .....</b>	<b>\$ 498,068</b>	<b>\$ 29,036</b>	<b>\$ 56,114</b>	<b>\$ 583,218</b>
<b>Indirect Program Expenses</b>				
Commercial/Industrial Energy Efficiency Overhead .....	222,704	16,653	86,715	326,072
Energy Efficiency Accounting & Analysis .....	848,975	49,358	251,197	1,149,530
Energy Efficiency Advisory Group .....	14,365	806	954	16,125
Residential Energy Efficiency Overhead .....	783,384	44,818	35,987	864,189
Special Accounting Entries .....	(88,576)	(3,447)	–	(92,024)
<b>Indirect Program Expenses Total .....</b>	<b>\$ 1,780,851</b>	<b>\$ 108,187</b>	<b>\$ 374,854</b>	<b>\$ 2,263,893</b>
<b>Grand Total .....</b>	<b>\$ 31,291,579</b>	<b>\$ 2,168,868</b>	<b>\$ 9,303,017</b>	<b>\$ 42,763,464</b>

## Appendix 3. 2016 DSM program activity

Program	Participants	Total Costs		Savings		Measure Life (Years)	Nominal Levelized Costs <sup>a</sup>		
		Utility <sup>b</sup>	Resource <sup>c</sup>	Annual Energy (kWh)	Peak Demand <sup>d</sup> (MW)		Utility (\$/kWh)	Total Resource (\$/kWh)	
<b>Demand Response</b>									
A/C Cool Credit <sup>1</sup> .....	28,315 homes	\$ 1,103,295	\$ 1,103,295	n/a	34	n/a	n/a	n/a	
Flex Peak Program <sup>1</sup> .....	137 sites	767,997	767,997	n/a	42	n/a	n/a	n/a	
Irrigation Peak Rewards <sup>1</sup> .....	2,286 service points	7,600,076	7,600,076	n/a	303	n/a	n/a	n/a	
<b>Total</b> .....		<b>\$ 9,471,367</b>	<b>\$ 9,471,367</b>	<b>n/a</b>	<b>378</b>				
<b>Energy Efficiency</b>									
<b>Residential</b>									
Easy Savings .....	2,001 kits	\$ 127,587	\$127,587	402,961		9	\$0.035	\$0.035	
Educational Distributions .....	67,065 kits/lightbulbs	2,392,884	2,392,884	15,149,605		10	0.016	0.016	
Energy Efficient Lighting .....	1,442,561 lightbulbs	3,080,708	10,770,703	21,093,813		11	0.014	0.049	
Energy House Calls .....	375 homes	206,437	206,437	509,859		18	0.029	0.029	
ENERGY STAR <sup>®</sup> Homes Northwest .....	110 homes	142,158	297,518	150,282		36	0.051	0.107	
Fridge and Freezer Recycling Program (See ya later, refrigerator <sup>®</sup> ) .....	1,539 refrigerators/freezers	257,916	257,916	632,186		6	0.062	0.062	
Heating & Cooling Efficiency Program .....	486 projects	594,913	1,404,625	1,113,574		20	0.036	0.085	
Home Energy Audit .....	539 audits	289,812	289,812	207,249		11	n/a	n/a	
Home Improvement Program .....	482 projects	324,024	1,685,301	500,280		45	0.034	0.178	
Multifamily Energy Savings Program .....	3 projects	59,046	59,046	149,760		10	0.040	0.040	
Oregon Residential Weatherization .....	7 homes	3,930	5,900	2,847		30	0.079	0.118	
Rebate Advantage .....	66 homes	111,050	148,142	411,272		25	0.016	0.022	
Simple Steps, Smart Savings <sup>™</sup> .....	7,880 appliances/showerheads	153,784	379,752	577,320		11	0.025	0.063	
Weatherization Assistance for Qualified Customers .....	246 homes/non-profits	1,289,809	1,934,415	746,162		25	0.105	0.158	
Weatherization Solutions for Eligible Customers .....	232 homes	1,323,793	1,323,793	621,653		25	0.130	0.130	
<b>Sector Total</b> .....		<b>\$ 10,357,850</b>	<b>\$21,283,831</b>	<b>42,259,823</b>		<b>8</b>	<b>\$ 0.029</b>	<b>\$ 0.059</b>	
<b>Commercial</b>									
Custom Projects (Custom Efficiency) .....	196 projects	\$ 7,982,624	\$ 16,123,619	47,518,871		11	\$ 0.013	\$ 0.026	
Green Motors—Industrial .....	14 motor rewinds			123,700		16	n/a	n/a	
New Construction (Building Efficiency) .....	116 projects	1,931,222	4,560,826	12,393,249		12	0.014	0.033	
Retrofits (Easy Upgrades) .....	1,577 projects	5,040,190	8,038,791	28,124,779		11	0.016	0.026	
<b>Sector Total</b> .....		<b>\$ 14,954,036</b>	<b>\$ 28,723,235</b>	<b>88,160,599</b>		<b>14</b>	<b>\$ 0.014</b>	<b>\$ 0.026</b>	

**Appendix 3. 2016 DSM program activity (continued)**

Program	Participants	Total Costs		Savings		Measure Life (Years)	Nominal Levelized Costs <sup>a</sup>	
		Utility <sup>b</sup>	Resource <sup>c</sup>	Annual Energy (kWh)	Peak Demand <sup>d</sup> (MW)		Utility (\$/kWh)	Total Resource (\$/kWh)
<b>Irrigation</b>								
Green Motors—Irrigation .....	23 motor rewinds			73,617		11	n/a	n/a
Irrigation Efficiency Reward .....	851 projects	\$ 2,372,352	\$ 8,162,206	15,673,513		8	\$ 0.018	\$ 0.063
<b>Sector Total</b> .....		<b>\$ 2,372,352</b>	<b>\$ 8,162,206</b>	<b>15,747,130</b>		<b>8</b>	<b>\$ 0.018</b>	<b>\$ 0.062</b>
<b>Energy Efficiency Portfolio Total</b> .....		<b>\$ 27,684,239</b>	<b>\$ 58,169,272</b>	<b>146,176,552</b>		<b>12</b>	<b>\$ 0.017</b>	<b>\$ 0.036</b>
<b>Market Transformation</b>								
Northwest Energy Efficiency Alliance .....		\$ 2,676,387	\$ 2,676,387	24,615,600				
<b>Other Programs and Activities</b>								
<b>Residential</b>								
Residential Energy Efficiency Education Initiative .....		\$ 290,179	\$ 290,179					
Shade Tree Project .....	2,070 trees	76,642	76,642					
<b>Commercial</b>								
Oregon Commercial Audits .....	7 audits	7,717	7,717					
<b>Other</b>								
Energy Efficiency Direct Program Overhead .....		293,039	293,039					
<b>Total Program Direct Expense</b> .....		<b>\$ 40,499,570</b>	<b>\$ 70,984,603</b>	<b>170,792,152</b>	<b>378</b>			
Indirect Program Expenses .....		2,263,893						
<b>Total DSM Expense</b> .....		<b>\$ 42,763,464</b>						

<sup>a</sup> Levelized Costs are based on financial inputs from Idaho Power’s 2013 IRP, and calculations include line-loss adjusted energy savings.

<sup>b</sup> The Total Utility Cost is the cost incurred by Idaho Power to implement and manage a DSM program.

<sup>c</sup> The Total Resource Cost is the total expenditures for a DSM program from the point of view of Idaho Power and its customers as a whole.

<sup>d</sup> Demand response program reductions are reported with 9.7-percent peak loss assumptions.

<sup>1</sup> Peak demand is the peak performance of the program during summer 2016.

<sup>2</sup> Savings are preliminary estimates provided by NEEA. Final savings for 2016 will be provided by NEEA May 2017.

#### Appendix 4. Historical DSM expense and performance, 2002–2016

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Demand Response</b>											
A/C Cool Credit											
2003.....	204	\$ 275,645	\$ 275,645			0.0					
2004.....	420	287,253	287,253			0.5					
2005.....	2,369	754,062	754,062			3					
2006.....	5,369	1,235,476	1,235,476			6					
2007.....	13,692	2,426,154	2,426,154			12					
2008.....	20,195	2,969,377	2,969,377			26					
2009.....	30,391	3,451,988	3,451,988			39					
2010.....	30,803	2,002,546	2,002,546			39					
2011.....	37,728	2,896,542	2,896,542			24					
2012.....	36,454	5,727,994	5,727,994			45					
2013.....	n/a	663,858	663,858			n/a					
2014.....	29,642	1,465,646	1,465,646			44					
2015.....	29,000	1,148,935	1,148,935			36					
2016.....	28,315	1,103,295	1,103,295			34					
<b>Total .....</b>		<b>\$26,408,770</b>	<b>\$ 26,408,770</b>								
Flex Peak Program											
2009.....	33	528,681	528,681			19					
2010.....	60	1,902,680	1,902,680			48					
2011.....	111	2,057,730	2,057,730			59					
2012.....	102	3,009,822	3,009,822			53					
2013.....	100	2,743,615	2,743,615			48					
2014.....	93	1,563,211	1,563,211			40					
2015.....	72	592,872	592,872			26					
2016.....	137	767,997	767,997			42					
<b>Total .....</b>		<b>\$13,166, 608</b>	<b>\$ 13,166,608</b>								
Irrigation Peak Rewards											
2004.....	58	344,714	344,714			6					
2005.....	894	1,468,282	1,468,282			40					
2006.....	906	1,324,418	1,324,418			32					

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Demand Response</b>											
Irrigation Peak Rewards											
2007.....	947	\$ 1,615,881	\$ 1,615,881			37					
2008.....	897	1,431,840	1,431,840			35					
2009.....	1,512	9,655,283	9,655,283			160					
2010.....	2,038	13,330,826	13,330,826			250					
2011.....	2,342	12,086,222	12,086,222			320					
2012.....	2,433	12,423,364	12,423,364			340					
2013.....	n/a	2,072,107	2,072,107			n/a					
2014.....	2,225	7,597,213	7,597,213			295					
2015.....	2,259	7,258,831	7,258,831			305					
2016.....	2,286	7,600,076	7,600,076			303					
<b>Total .....</b>		<b>\$ 78,209,056</b>	<b>\$ 78,209,056</b>								
<b>Residential Efficiency</b>											
Ductless Heat Pump Pilot											
2009.....	96	202,005	451,605	409,180	0.05	18	\$ 0.031	\$ 0.086			
2010.....	104	189,231	439,559	364,000	0.04	20	0.044	0.103			
2011.....	131	191,183	550,033	458,500	0.05	20	0.028	0.081			
2012.....	127	159,867	617,833	444,500	0.05	20	0.024	0.094			
2013.....	215	237,575	992,440	589,142	0.07	15	0.032	0.132			
2014.....	179	251,446	884,211	462,747	0.05	15	0.042	0.148			
<b>Total .....</b>	<b>852</b>	<b>\$ 1,231,307</b>	<b>\$ 3,935,681</b>	<b>2,728,069</b>		<b>15</b>	<b>\$ 0.044</b>	<b>\$ 0.138</b>			
Easy Savings Kits											
2015.....	2,068	127,477	127,477	624,536		10	0.021	0.021			
2016.....	2,001	127,587	127,587	402,961		9	0.035	0.035			
<b>Total .....</b>	<b>4,069</b>	<b>\$ 255,063</b>	<b>\$ 255,063</b>	<b>1,027,497</b>		<b>9</b>	<b>\$0.033</b>	<b>\$0.033</b>	<b>2.24</b>	<b>2.24</b>	
Educational Distributions											
2015.....	28,197	432,185	432,185	1,669,495		10	0.026	0.026			
2016.....	67,065	2,392,884	2,392,884	15,149,605		10	0.016	0.016			
<b>Total .....</b>		<b>\$ 2,825,069</b>	<b>\$ 2,825,069</b>	<b>16,819,100</b>		<b>10</b>	<b>\$0.021</b>	<b>\$0.021</b>	<b>3.41</b>	<b>3.41</b>	

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Residential Efficiency</b>											
Energy Efficiency Packets											
2002.....	2,925	755	755	155,757			7	0.001	0.001		
<b>Total .....</b>	<b>2,925</b>	<b>\$ 755</b>	<b>\$ 755</b>	<b>155,757</b>			<b>7</b>	<b>\$ 0.001</b>	<b>\$ 0.001</b>	<b>4.24</b>	<b>2.05</b>
Energy Efficient Lighting											
2002.....	11,618	243,033	310,643	3,299,654	0.38		7	0.012	0.015		
2003.....	12,662	314,641	464,059	3,596,150	0.41		7	0.014	0.021		
2004.....											
2005.....	43,760	73,152	107,810	1,734,646	0.20		7	0.007	0.010		
2006.....	178,514	298,754	539,877	6,302,794	0.72		7	0.008	0.014		
2007.....	219,739	557,646	433,626	7,207,439	0.82		7	0.012	0.017		
2008.....	436,234	1,018,292	793,265	14,309,444	1.63		7	0.011	0.013		
2009.....	549,846	1,207,366	1,456,796	13,410,748	1.53		5	0.020	0.024		
2010.....	1,190,139	2,501,278	3,976,476	28,082,738	3.21		5	0.020	0.031		
2011.....	1,039,755	1,719,133	2,764,623	19,694,381	2.25		5	0.015	0.024		
2012.....	925,460	1,126,836	2,407,355	16,708,659	1.91		5	0.012	0.025		
2013.....	1,085,225	1,356,926	4,889,501	9,995,753	1.14		8	0.016	0.058		
2014.....	1,161,553	1,909,823	7,148,427	12,882,151	1.47		8	0.018	0.066		
2015.....	1,343,255	2,063,383	4,428,676	15,876,117	1.81		10	0.013	0.028		
2016.....	1,442,561	3,080,708	10,770,703	21,093,813	2.41		11	0.014	0.049		
<b>Total .....</b>	<b>9,640,321</b>	<b>\$ 17,470,970</b>	<b>\$ 40,491,837</b>	<b>174,194,487</b>			<b>8</b>	<b>\$ 0.012</b>	<b>\$ 0.027</b>	<b>4.32</b>	<b>1.87</b>
Energy House Calls											
2002.....	17	26,053	26,053	25,989	0.00		20	0.082	0.082		
2003.....	420	167,076	167,076	602,723	0.07		20	0.023	0.023		
2004.....	1,708	725,981	725,981	2,349,783	0.27		20	0.025	0.025		
2005.....	891	375,610	375,610	1,775,770	0.20		20	0.017	0.017		
2006.....	819	336,701	336,701	777,244	0.09		20	0.035	0.035		
2007.....	700	336,372	336,372	699,899	0.08		20	0.039	0.039		
2008.....	1,099	484,379	484,379	883,038	0.10		20	0.045	0.045		
2009.....	1,266	569,594	569,594	928,875	0.11		20	0.052	0.052		
2010.....	1,602	762,330	762,330	1,198,655	0.14		20	0.054	0.054		

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Residential Efficiency</b>											
Energy House Calls											
2011.....	881	483,375	483,375	1,214,004	0.14		20	0.027	0.027		
2012.....	668	275,884	275,884	1,192,039	0.14		18	0.016	0.016		
2013.....	411	199,995	199,995	837,261	0.10		18	0.016	0.016		
2014.....	297	197,987	197,987	579,126	0.07		18	0.030	0.030		
2015.....	362	214,103	214,103	754,646	0.09		18	0.020	0.020		
2016.....	375	206,437	206,437	509,859	0.06		18	0.029	0.029		
<b>Total.....</b>	<b>11,516</b>	<b>\$ 5,361,876</b>	<b>\$ 5,361,877</b>	<b>14,328,911</b>			<b>18</b>	<b>\$ 0.032</b>	<b>\$ 0.032</b>	<b>2.47</b>	<b>2.47</b>
ENERGY STAR <sup>®</sup> Homes Northwest											
2003.....		13,597	13,597	0							
2004.....	44	140,165	335,437	101,200	0.01		25	0.103	0.246		
2005.....	200	253,105	315,311	415,600	0.05		25	0.045	0.056		
2006.....	439	469,609	602,651	912,242	0.10		25	0.038	0.049		
2007.....	303	475,044	400,637	629,634	0.07		25	0.056	0.047		
2008.....	254	302,061	375,007	468,958	0.05		25	0.048	0.059		
2009.....	474	355,623	498,622	705,784	0.08		25	0.039	0.055		
2010.....	630	375,605	579,495	883,260	0.10		25	0.033	0.051		
2011.....	308	259,762	651,249	728,030	0.08		32	0.020	0.051		
2012.....	410	453,186	871,310	537,447	0.06		35	0.046	0.089		
2013.....	267	352,882	697,682	365,370	0.04		36	0.053	0.104		
2014.....	243	343,277	689,021	332,682	0.04		36	0.055	0.111		
2015.....	598	653,674	1,412,126	773,812	0.09		36	0.046	0.099		
2016.....	110	142,158	297,518	150,282	0.02		36	0.051	0.107		
<b>Total.....</b>	<b>4,280</b>	<b>\$ 4,589,747</b>	<b>\$ 7,739,664</b>	<b>7,004,301</b>			<b>36</b>	<b>\$ 0.043</b>	<b>\$ 0.073</b>	<b>2.48</b>	<b>1.47</b>
ENERGY STAR Homes Northwest (gas heated)											
2014.....	282			195,372	0.04		22				
2015.....	69			46,872	0.09		22				
<b>Total.....</b>	<b>351</b>			<b>242,244</b>							

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Residential Efficiency</b>											
Fridge and Freezer Recycling Program/See ya later, refrigerator <sup>®</sup>											
2009 .....	1,661	\$ 305,401	\$ 305,401	1,132,802	0.13		8	\$ 0.041	\$ 0.041		
2010 .....	3,152	565,079	565,079	1,567,736	0.18		8	0.054	0.054		
2011 .....	3,449	654,393	654,393	1,712,423	0.20		8	0.046	0.046		
2012 .....	3,176	613,146	613,146	1,576,426	0.18		8	0.046	0.046		
2013 .....	3,307	589,054	589,054	1,442,344	0.16		6	0.061	0.061		
2014 .....	3,194	576,051	576,051	1,390,760	0.16		6	0.062	0.062		
2015 .....	1,630	227,179	227,179	720,208	0.08		6	0.048	0.048		
2016 .....	1,539	257,916	257,916	632,186	0.07		6	0.062	0.062		
<b>Total .....</b>	<b>21,108</b>	<b>\$ 3,788,219</b>	<b>\$ 3,788,219</b>	<b>10,174,885</b>			<b>6</b>	<b>\$ 0.068</b>	<b>\$ 0.068</b>	<b>1.21</b>	<b>1.21</b>
Heating & Cooling Efficiency Program											
2006.....		17,444	17,444								
2007.....	4	488,211	494,989	1,595	0.00		18	27.344	27.710		
2008.....	359	473,551	599,771	561,440	0.06		18	0.073	0.092		
2009.....	349	478,373	764,671	1,274,829	0.15		18	0.034	0.054		
2010.....	217	327,669	1,073,604	1,104,497	0.13		20	0.025	0.083		
2011.....	130	195,770	614,523	733,405	0.08		20	0.018	0.056		
2012.....	141	182,281	676,530	688,855	0.08		20	0.018	0.066		
2013.....	210	329,674	741,586	1,003,730	0.11		20	0.022	0.050		
2014.....	230	362,014	1,247,560	1,099,464	0.13		20	0.022	0.075		
2015.....	427	626,369	2,064,055	1,502,172	0.17		20	0.028	0.092		
2016.....	486	594,913	1,404,625	1,113,574	0.13		20	0.036	0.085		
<b>Total .....</b>	<b>2,553</b>	<b>\$ 4,076,270</b>	<b>\$ 9,699,358</b>	<b>9,083,561</b>			<b>20</b>	<b>\$ 0.037</b>	<b>\$ 0.087</b>	<b>2.87</b>	<b>1.20</b>
Home Energy Audit											
2013.....		88,740	88,740								
2014.....	354	170,648	170,648	141,077			10				
2015.....	351	201,957	201,957	136,002			10				
2016.....	539	289,812	289,812	207,249			11				
<b>Total .....</b>	<b>1,244</b>	<b>\$ 751,157</b>	<b>\$ 776,006</b>	<b>483,569</b>			<b>11</b>				

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Residential Efficiency</b>											
Home Improvement											
2008.....	282	123,454	157,866	317,814	0.04		25	\$ 0.029	\$ 0.037		
2009.....	1,188	321,140	550,148	1,338,876	0.15		25	0.019	0.032		
2010.....	3,537	944,716	2,112,737	3,986,199	0.46		45	0.016	0.035		
2011.....	2,275	666,041	2,704,816	917,519	0.10		45	0.038	0.155		
2012.....	840	385,091	812,827	457,353	0.05		45	0.044	0.093		
2013.....	365	299,497	1,061,314	616,044	0.07		45	0.025	0.090		
2014.....	555	324,717	896,246	838,929	0.10		45	0.020	0.055		
2015.....	408	272,509	893,731	303,580	0.03		45	0.046	0.152		
2016.....	482	324,024	1,685,301	500,280	0.06		45	0.034	0.177		
<b>Total .....</b>	<b>9,932</b>	<b>\$ 3,661,190</b>	<b>\$ 10,874,986</b>	<b>9,267,594</b>			<b>45</b>	<b>\$ 0.025</b>	<b>\$ 0.074</b>	<b>4.30</b>	<b>1.45</b>
Multifamily Energy Savings Program											
2016.....	3	59,046	59,046	149,760	0.02		10	0.040	0.040		
<b>Total .....</b>	<b>3</b>	<b>\$ 59,046</b>	<b>\$ 59,046</b>	<b>149,760</b>			<b>10</b>	<b>\$ 0.040</b>	<b>\$ 0.040</b>	<b>1.43</b>	<b>1.43</b>
Oregon Residential Weatherization											
2002.....	24	(662)	23,971	4,580			25	0.010	0.389		
2003.....		(943)									
2004.....	4	1,057	1,057								
2005.....	4	612	3,608	7,927	0.00		25	0.006	0.034		
2006.....		4,126	4,126								
2007.....	1	3,781	5,589	9,971	0.00		25	0.028	0.042		
2008.....	3	7,417	28,752	22,196	0.00		25	0.025	0.096		
2009.....	1	7,645	8,410	2,907	0.00		25	0.203	0.223		
2010.....	1	6,050	6,275	320	0.00		30	0.011	0.062		
2011.....	8	7,926	10,208	21,908	0.00		30	0.021	0.027		
2012.....	5	4,516	11,657	11,985	0.00		30	0.022	0.056		
2013.....	14	9,017	14,369	14,907	0.00		30	0.035	0.055		
2014.....	13	5,462	9,723	11,032	0.00		30	0.028	0.050		
2015.....	19	5,808	10,388	11,910	0.00		30	0.028	0.050		

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Residential Efficiency</b>											
Oregon Residential Weatherization											
2016.....	7	\$ 3,930	\$ 5,900	2,847	0.00		30	\$ 0.079	\$ 0.118		
<b>Total .....</b>	<b>89</b>	<b>\$ 65,742</b>	<b>\$ 144,033</b>	<b>122,490</b>			<b>30</b>	<b>\$ 0.037</b>	<b>\$ 0.082</b>	<b>2.94</b>	<b>1.34</b>
Rebate Advantage											
2003.....	73	27,372	79,399	227,434	0.03		45	0.008	0.022		
2004.....	105	52,187	178,712	332,587	0.04		45	0.010	0.034		
2005.....	98	46,173	158,462	312,311	0.04		45	0.009	0.032		
2006.....	102	52,673	140,289	333,494	0.04		45	0.010	0.027		
2007.....	123	89,269	182,152	554,018	0.06		45	0.010	0.021		
2008.....	107	90,888	179,868	463,401	0.05		45	0.012	0.025		
2009.....	57	49,525	93,073	247,348	0.03		25	0.015	0.029		
2010.....	35	39,402	66,142	164,894	0.02		25	0.018	0.031		
2011.....	25	63,469	85,044	159,325	0.02		25	0.024	0.033		
2012.....	35	37,241	71,911	187,108	0.02		25	0.012	0.024		
2013.....	42	60,770	92,690	269,891	0.03		25	0.014	0.021		
2014.....	44	63,231	89,699	269,643	0.03		25	0.014	0.020		
2015.....	58	85,438	117,322	358,683	0.04		25	0.014	0.020		
2016.....	66	111,050	148,142	411,272	0.05		25	0.016	0.022		
<b>Total .....</b>	<b>970</b>	<b>\$ 868,688</b>	<b>\$ 1,682,906</b>	<b>4,291,409</b>			<b>25</b>	<b>\$ 0.015</b>	<b>\$ 0.029</b>	<b>7.40</b>	<b>3.82</b>
Simple Steps Smart Savings											
2007.....		9,275	9,275	0							
2008.....	3,034	250,860	468,056	541,615	0.06		15	0.044	0.082		
2009.....	9,499	511,313	844,811	1,638,038	0.19		15	0.031	0.051		
2010.....	16,322	832,161	1,025,151	1,443,580	0.16		15	0.057	0.070		
2011.....	15,896	638,323	1,520,977	1,485,326	0.17		15	0.034	0.080		
2012.....	16,675	659,032	817,924	887,222	0.10		14	0.061	0.075		
2013.....	13,792	405,515	702,536	885,980	0.10		12	0.041	0.071		
2014.....	10,061	227,176	302,289	652,129	0.07		12	0.031	0.041		
2015.....	9,343	139,096	408,032	770,822	0.09		10	0.018	0.053		
2016.....	7,880	153,784	379,752	577,320	0.07		11	0.025	0.063		
<b>Total .....</b>	<b>102,502</b>	<b>\$ 3,826,535</b>	<b>\$ 6,468,669</b>	<b>8,882,032</b>			<b>11</b>	<b>\$ 0.050</b>	<b>\$ 0.085</b>	<b>1.93</b>	<b>1.14</b>

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Residential Efficiency</b>											
Weatherization Solutions for Eligible Customers											
2008.....	16	52,807	52,807	71,680	0.01		25	0.057	0.057		
2009.....	41	162,995	162,995	211,719	0.02		25	0.059	0.059		
2010.....	47	228,425	228,425	313,309	0.04		25	0.056	0.056		
2011.....	117	788,148	788,148	1,141,194	0.13		25	0.042	0.042		
2012.....	141	1,070,556	1,070,556	257,466	0.03		25	0.254	0.254		
2013.....	166	1,267,791	1,267,791	303,116	0.03		25	0.240	0.240		
2014.....	118	791,344	791,344	290,926	0.03		25	0.163	0.163		
2015.....	171	1,243,269	1,243,269	432,958	0.05		25	0.175	0.175		
2016.....	232	1,323,793	1,323,793	621,653	0.07		25	0.130	0.130		
<b>Total .....</b>	<b>1,049</b>	<b>\$ 6,929,127</b>	<b>\$ 6,929,128</b>	<b>3,644,021</b>			<b>30</b>	<b>\$ 0.132</b>	<b>\$ 0.132</b>	<b>0.74</b>	<b>0.74</b>
Window AC Trade-Up Pilot											
2003.....	99	6,687	10,492	14,454			12	0.051	0.079		
<b>Total .....</b>	<b>99</b>	<b>\$ 6,687</b>	<b>\$ 10,492</b>	<b>14,454</b>			<b>12</b>	<b>\$ 0.051</b>	<b>\$ 0.079</b>		
<b>Residential—Weatherization Assistance for Qualified Customers (WAQC)</b>											
WAQC—Idaho											
2002.....	197	235,048	492,139								
2003.....	208	228,134	483,369								
2004.....	269	498,474	859,482	1,271,677	0.15		25	0.029	0.050		
2005.....	570	1,402,487	1,927,424	3,179,311	0.36		25	0.033	0.045		
2006.....	540	1,455,373	2,231,086	2,958,024	0.34		25	0.037	0.056		
2007.....	397	1,292,930	1,757,105	3,296,019	0.38		25	0.029	0.040		
2008.....	439	1,375,632	1,755,749	4,064,301	0.46		25	0.025	0.032		
2009.....	427	\$ 1,260,922	\$ 1,937,578	4,563,832	0.52		25	0.021	0.033		
2010.....	373	1,205,446	2,782,597	3,452,025	0.39		25	0.026	0.060		
2011.....	273	1,278,112	1,861,836	2,648,676	0.30		25	0.036	0.053		
2012.....	228	1,321,927	1,743,863	621,464	0.07		25	0.159	0.210		
2013.....	245	1,336,742	1,984,173	657,580	0.08		25	0.152	0.226		
2014.....	244	1,267,212	1,902,615	509,620	0.06		25	0.185	0.277		

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Residential—(WAQC)</b>											
WAQC—Idaho											
2015.....	233	\$ 1,278,159	\$ 2,072,901	529,426	0.06		25	\$ 0.179	\$ 0.291		
2016.....	234	1,254,338	1,870,481	722,430	0.08		25	0.129	0.192		
<b>Total .....</b>	<b>4,877</b>	<b>\$ 16,690,936</b>	<b>\$ 25,662,398</b>	<b>28,474,386</b>			<b>25</b>	<b>\$ 0.043</b>	<b>\$ 0.067</b>	<b>2.79</b>	<b>1.82</b>
WAQC—Oregon											
2002.....	31	24,773	47,221	68,323	0.01		25	0.027	0.051		
2003.....	29	22,255	42,335	102,643	0.01		25	0.016	0.031		
2004.....	17	13,469	25,452	28,436	0.00		25	0.035	0.067		
2005.....	28	44,348	59,443	94,279	0.01		25	0.035	0.047		
2006.....							25				
2007.....	11	30,694	41,700	42,108	0.00		25	0.054	0.074		
2008.....	14	43,843	74,048	73,841	0.01		25	0.040	0.068		
2009.....	10	33,940	46,513	114,982	0.01		25	0.023	0.031		
2010.....	27	115,686	147,712	289,627	0.03		25	0.030	0.038		
2011.....	14	46,303	63,981	134,972	0.02		25	0.026	0.035		
2012.....	10	48,214	76,083	26,840	0.00		25	0.134	0.212		
2013.....	9	54,935	67,847	24,156	0.00		25	0.170	0.210		
2014.....	11	52,900	94,493	24,180	0.00		25	0.162	0.290		
2015.....	10	36,873	46,900	20,595	0.00		25	0.133	0.169		
2016.....	12	35,471	63,934	23,732	0.00		25	0.111	0.200		
<b>Total .....</b>	<b>233</b>	<b>\$ 603,703</b>	<b>\$ 897,662</b>	<b>1,068,714</b>			<b>25</b>	<b>\$ 0.042</b>	<b>\$ 0.062</b>	<b>2.79</b>	<b>1.87</b>
WAQC—BPA Supplemental											
2002.....	75	55,966	118,255	311,347	0.04		25	0.013	0.028		
2003.....	57	49,895	106,915	223,591	0.03		25	0.017	0.036		
2004.....	40	69,409	105,021	125,919	0.01		25	0.041	0.062		
<b>Total .....</b>	<b>172</b>	<b>\$ 175,270</b>	<b>\$ 330,191</b>	<b>660,857</b>			<b>25</b>	<b>\$ 0.020</b>	<b>\$ 0.037</b>	<b>5.75</b>	<b>3.05</b>
<b>WAQC Total .....</b>		<b>\$ 17,469,910</b>	<b>\$ 26,890,251</b>	<b>30,203,957</b>			<b>25</b>	<b>\$ 0.043</b>	<b>\$ 0.066</b>	<b>2.83</b>	<b>1.84</b>

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Commercial</b>											
Air Care Plus Pilot											
2003.....	4	\$ 5,764	\$ 9,061	33,976			10	\$ 0.021	\$ 0.033		
2004.....		344	344								
<b>Total .....</b>	<b>4</b>	<b>\$ 6,108</b>	<b>\$ 9,405</b>	<b>33,976</b>			<b>10</b>	<b>\$ 0.022</b>	<b>\$ 0.034</b>		
New Construction (Building Efficiency)											
2004.....		28,821	28,821								
2005.....	12	194,066	233,149	494,239	0.06	0.2	12	0.043	0.052		
2006.....	40	374,008	463,770	704,541	0.08	0.3	12	0.058	0.072		
2007.....	22	669,032	802,839	2,817,248	0.32	0.5	12	0.015	0.040		
2008.....	60	1,055,009	1,671,375	6,598,123	0.75	1.0	12	0.017	0.028		
2009.....	72	1,327,127	2,356,434	6,146,139	0.70	1.3	12	0.024	0.043		
2010.....	70	1,509,682	3,312,963	10,819,598	1.24	0.9	12	0.016	0.035		
2011.....	63	1,291,425	3,320,015	11,514,641	1.31	0.9	12	0.010	0.026		
2012.....	84	1,592,572	8,204,883	20,450,037	2.33	0.6	12	0.007	0.036		
2013.....	59	1,507,035	3,942,880	10,988,934	1.25	1.1	12	0.012	0.032		
2014.....	69	1,258,273	3,972,822	9,458,059	1.08	1.2	12	0.012	0.037		
2015.....	81	2,162,001	6,293,071	23,232,017	2.65		12	0.008	0.024		
2016.....	116	1,931,222	4,560,826	12,393,249	1.41		12	0.014	0.033		
<b>Total .....</b>	<b>748</b>	<b>\$ 14,900,273</b>	<b>\$ 39,163,849</b>	<b>115,616,825</b>			<b>12</b>	<b>\$ 0.014</b>	<b>\$ 0.037</b>	<b>5.55</b>	<b>2.11</b>
Retrofits (Easy Upgrades)											
2006.....		31,819	31,819								
2007.....	104	711,494	1,882,035	5,183,640	0.59	0.8	12	0.015	0.040		
2008.....	666	2,992,261	10,096,627	25,928,391	2.96	4.5	12	0.013	0.043		
2009.....	1,224	3,325,505	10,076,237	35,171,627	4.02	6.1	12	0.011	0.032		
2010.....	1,535	3,974,410	7,655,397	35,824,463	4.09	7.8	12	0.013	0.024		
2011.....	1,732	4,719,466	9,519,364	38,723,073	4.42		12	0.011	0.022		
2012.....	1,838	5,349,753	9,245,297	41,568,672	4.75		12	0.012	0.020		
2013.....	1,392	3,359,790	6,738,645	21,061,946	2.40		12	0.014	0.029		
2014.....	1,095	3,150,942	5,453,380	19,118,494	2.18		12	0.015	0.025		

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Commercial</b>											
Retrofits (Easy Upgrades)											
2015.....	1,222	\$ 4,350,865	\$ 7,604,200	23,594,701	2.69		12	\$ 0.017	\$ 0.029		
2016.....	1,577	5,040,190	8,038,791	28,124,779	3.21		12	0.016	0.026		
<b>Total .....</b>	<b>12,385</b>	<b>\$ 37,006,495</b>	<b>\$ 76,341,791</b>	<b>274,299,786</b>			<b>12</b>	<b>\$ 0.015</b>	<b>\$ 0.031</b>	<b>5.36</b>	<b>2.60</b>
Holiday Lighting											
2008.....	14	28,782	73,108	259,092	0.03		10	0.014	0.035		
2009.....	32	33,930	72,874	142,109	0.02		10	0.031	0.066		
2010.....	25	46,132	65,308	248,865	0.03		10	0.024	0.034		
2011.....	6	2,568	2,990	66,189	0.01		10	0.004	0.005		
<b>Total .....</b>	<b>77</b>	<b>\$ 111,412</b>	<b>\$ 214,280</b>	<b>716,255</b>			<b>10</b>	<b>\$ 0.019</b>	<b>\$ 0.037</b>	<b>2.89</b>	<b>1.50</b>
Oregon Commercial Audit											
2002.....	24	5,200	5,200								
2003.....	21	4,000	4,000								
2004.....	7	0	0								
2005.....	7	5,450	5,450								
2006.....	6										
2007.....		1,981	1,981								
2008.....		58	58								
2009.....	41	20,732	20,732								
2010.....	22	5,049	5,049								
2011.....	12	13,597	13,597								
2012.....	14	12,470	12,470								
2013.....	18	5,090	5,090								
2014.....	16	9,464	9,464								
2015.....	17	4,251	4,251								
2016.....	7	7,717	7,717								
<b>Total .....</b>	<b>212</b>	<b>\$ 95,059</b>	<b>\$ 95,059</b>								
Oregon School Efficiency											
2005.....		86	86								
2006.....	6	24,379	89,771	223,368	0.03		12	\$ 0.012	\$ 0.044		
<b>Total .....</b>	<b>6</b>	<b>\$ 24,465</b>	<b>\$ 89,857</b>	<b>223,368</b>			<b>12</b>	<b>\$ 0.012</b>	<b>\$ 0.044</b>		

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Industrial</b>											
Custom Projects (Custom Efficiency)											
2003.....		\$ 1,303	\$ 1,303								
2004.....	1	112,311	133,441	211,295	0.02		12	\$ 0.058	\$ 0.069		
2005.....	24	1,128,076	3,653,152	12,016,678	1.37		12	0.010	0.033		
2006.....	40	1,625,216	4,273,885	19,211,605	2.19		12	0.009	0.024		
2007.....	49	3,161,866	7,012,686	29,789,304	3.40	3.6	12	0.012	0.026		
2008.....	101	4,045,671	16,312,379	41,058,639	4.69	4.8	12	0.011	0.044		
2009.....	132	6,061,467	10,848,123	51,835,612	5.92	6.7	12	0.013	0.024		
2010.....	223	8,778,125	17,172,176	71,580,075	8.17	9.5	12	0.014	0.027		
2011.....	166	8,783,811	19,830,834	67,979,157	7.76	7.8	12	0.012	0.026		
2012.....	126	7,092,581	12,975,629	54,253,106	6.19	7.6	12	0.012	0.021		
2013.....	73	2,466,225	5,771,640	21,370,350	2.43	2.4	12	0.010	0.024		
2014.....	131	7,173,054	13,409,922	50,363,052	5.75	5.6	12	0.013	0.024		
2015.....	160	9,012,628	20,533,742	55,247,192	6.31		11	0.016	0.035		
2016.....	196	7,982,624	16,123,619	47,518,871	5.42		16	0.013	0.026		
<b>Total .....</b>	<b>1,422</b>	<b>\$ 67,424,957</b>	<b>\$148,052,531</b>	<b>522,434,936</b>			<b>12</b>	<b>\$ 0.014</b>	<b>\$ 0.031</b>	<b>5.75</b>	<b>2.62</b>
<b>Irrigation</b>											
Irrigation Efficiency Rewards											
2003.....	2	\$ 41,089	\$ 54,609	36,792	0.00	0.0	15	\$ 0.106	\$ 0.141		
2004.....	33	120,808	402,978	802,812	0.09	0.4	15	0.014	0.048		
2005.....	38	150,577	657,460	1,012,883	0.12	0.4	15	0.014	0.062		
2006.....	559	2,779,620	8,514,231	16,986,008	1.94	5.1	8	0.024	0.073		
2007.....	816	2,001,961	8,694,772	12,304,073	1.40	3.4	8	0.024	0.103		
2008.....	961	2,103,702	5,850,778	11,746,395	1.34	3.5	8	0.026	0.073		
2009.....	887	2,293,896	6,732,268	13,157,619	1.50	3.4	8	0.026	0.077		
2010.....	753	2,200,814	6,968,598	10,968,430	1.25	3.3	8	0.030	0.096		
2011.....	880	2,360,304	13,281,492	13,979,833	1.60	3.8	8	0.020	0.113		
2012.....	908	2,373,201	11,598,185	12,617,164	1.44	3.1	8	0.022	0.110		
2013.....	995	2,441,386	15,223,928	18,511,221	2.11	3.0	8	0.016	0.098		

#### Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Irrigation</b>											
Irrigation Efficiency Rewards											
2014.....	1,128	\$ 2,446,507	\$ 18,459,781	18,463,611	2.11	4.6	8	\$ 0.016	\$ 0.119		
2015.....	902	1,835,711	9,939,842	14,027,411	1.60	1.6	8	0.016	0.085		
2016.....	851	2,372,352	8,162,206	15,673,513	1.79		8	0.018	0.063		
<b>Total .....</b>	<b>9,713</b>	<b>\$ 25,521,929</b>	<b>\$114,541,128</b>	<b>160,287,765</b>			<b>8</b>	<b>\$ 0.023</b>	<b>\$ 0.105</b>	<b>4.93</b>	<b>1.61</b>
<b>Other Programs</b>											
Building Operator Training											
2003.....	71	\$ 48,853	\$ 48,853	1,825,000	0.21		5	\$ 0.006	\$ 0.006		
2004.....	26	43,969	43,969	650,000	0.07		5	0.014	0.014		
2005.....	7	1,750	4,480	434,167	0.05		5	0.001	0.002		
<b>Total .....</b>	<b>104</b>	<b>\$ 94,572</b>	<b>\$ 97,302</b>	<b>2,909,167</b>			<b>5</b>	<b>\$ 0.007</b>	<b>\$ 0.007</b>		
Commercial Education Initiative											
2005.....		3,497	3,497								
2006.....		4,663	4,663								
2007.....		26,823	26,823								
2008.....		72,738	72,738								
2009.....		120,584	120,584								
2010.....		68,765	68,765								
2011.....		89,856	89,856								
2012.....		73,788	73,788								
2013.....		66,790	66,790								
2014.....		76,606	76,606								
2015.....		65,250	65,250								
<b>Total .....</b>		<b>\$ 669,360</b>	<b>\$ 669,360</b>								
Comprehensive Lighting											
2011.....		2,404	2,404								
2012.....		64,094	64,094								
<b>Total .....</b>		<b>\$ 66,498</b>	<b>\$ 66,498</b>								

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Other Programs</b>											
Distribution Efficiency Initiative											
2005.....		21,552	43,969								
2006.....		24,306	24,306								
2007.....		8,987	8,987								
2008.....		(1,913)	(1,913)								
<b>Total</b> .....		<b>\$ 52,932</b>	<b>\$ 75,349</b>								
DSM Direct Program Overhead											
2007.....		\$ 56,909	\$ 56,909								
2008.....		169,911	169,911								
2009.....		164,957	164,957								
2010.....		117,874	117,874								
2011.....		210,477	210,477								
2012.....		285,951	285,951								
2013.....		380,957	380,957								
2014.....		478,658	478,658								
2015.....		272,858	272,858								
2016.....		293,039	293,039								
<b>Total</b> .....		<b>\$ 2,431,591</b>	<b>\$ 2,431,591</b>								
Green Motors Rewind—Industrial				123,700			7				
2016.....											
<b>Total</b> .....				<b>123,700</b>			<b>7</b>			<b>n/a</b>	<b>n/a</b>
Green Motors Rewind—Irrigation				73,617			19				
2016.....											
<b>Total</b> .....				<b>73,617</b>			<b>19</b>			<b>n/a</b>	<b>n/a</b>
Local Energy Efficiency Fund											
2003.....	56	5,100	5,100								
2004.....		23,449	23,449								
2005.....	2	14,896	26,756	78,000	0.01		10	\$ 0.024	\$ 0.042		
2006.....	480	3,459	3,459	19,027	0.00		7	0.009	0.009		
2007.....	1	7,520	7,520	9,000	0.00		7	0.135	0.135		

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Other Programs</b>											
Local Energy Efficiency Fund											
2008.....	2	22,714	60,100	115,931	0.01		15	0.019	0.049		
2009.....	1	5,870	4,274	10,340	0.00		12	0.064	0.047		
2010.....	1	251	251		0.00						
2011.....	1	1,026	2,052	2,028			30	0.036	0.071		
2012.....											
2013.....											
2014.....	1	9,100	9,100	95,834			18				
<b>Total .....</b>	<b>545</b>	<b>\$ 93,385</b>	<b>\$ 142,061</b>	<b>330,160</b>			<b>14</b>	<b>\$ 0.028</b>	<b>\$ 0.043</b>	<b>2.80</b>	<b>1.84</b>
Other C&RD and CRC BPA											
2002.....		\$ 55,722	\$ 55,722								
2003.....		67,012	67,012								
2004.....		108,191	108,191								
2005.....		101,177	101,177								
2006.....		124,956	124,956								
2007.....		31,645	31,645								
2008.....		6,950	6,950								
<b>Total .....</b>		<b>\$ 495,654</b>	<b>\$ 495,654</b>								
Residential Economizer Pilot											
2011.....		101,713	101,713								
2012.....		93,491	93,491								
2013.....		74,901	74,901								
<b>Total .....</b>		<b>\$ 270,105</b>	<b>\$ 270,105</b>								
Residential Education Initiative											
2005.....		7,498	7,498								
2006.....		56,727	56,727								
2007.....											
2008.....		150,917	150,917								
2009.....		193,653	193,653								

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Other Programs</b>											
Residential Education Initiative											
2010.....		\$ 222,092	\$ 222,092								
2011.....		159,645	159,645								
2012.....		174,738	174,738								
2013.....		416,166	416,166								
2014.....	6,312	423,091	423,091	1,491,225			10				
2015.....		149,903	149,903								
2016.....		290,179	290,179								
<b>Total .....</b>	<b>6,312</b>	<b>\$ 2,244,609</b>	<b>\$ 2,244,609</b>	<b>1,491,225</b>			<b>10</b>				
Shade Tree Project											
2014.....	2,041	147,290	147,290								
2015.....	1,925	105,392	105,392								
2016.....	2,070	76,642	76,642								
<b>Total .....</b>	<b>6,036</b>	<b>\$ 329,324</b>	<b>\$ 329,324</b>								
Solar 4R Schools											
2009.....		42,522	42,522								
<b>Total .....</b>		<b>\$ 42,522</b>	<b>\$ 42,522</b>								
<b>Market Transformation</b>											
Consumer Electronic Initiative											
2002.....		160,762	160,762								
<b>Total .....</b>		<b>\$ 160,762</b>	<b>\$ 160,762</b>								
NEEA											
2002.....		1,286,632	1,286,632	12,925,450	1.48						
2003.....		1,292,748	1,292,748	11,991,580	1.37						
2004.....		1,256,611	1,256,611	13,329,071	1.52						
2005.....		476,891	476,891	16,422,224	1.87						
2006.....		930,455	930,455	18,597,955	2.12						
2007.....		893,340	893,340	28,601,410	3.27						
2008.....		942,014	942,014	21,024,279	2.40						

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Market Transformation</b>											
NEEA											
2009.....		\$ 968,263	\$ 968,263	10,702,998	1.22						
2010.....		2,391,217	2,391,217	21,300,366	2.43						
2011.....		3,108,393	3,108,393	20,161,728	2.30						
2012.....		3,379,756	3,379,756	19,567,984	2.23						
2013.....		3,313,058	3,313,058	20,567,965	2.35						
2014.....		3,305,917	3,305,917	26,805,600	3.06						
2015.....		2,582,919	2,582,919	23,038,800	2.50						
2016.....		2,676,387	2,676,387	24,615,600	2.81						
<b>Total .....</b>		<b>\$ 28,804,600</b>	<b>\$ 28,804,600</b>	<b>289,653,011</b>							
<b>Annual Totals</b>											
2002.....		1,932,520	2,366,591	16,791,100	1.92	0					
2003.....		2,566,228	3,125,572	18,654,343	2.12	0					
2004.....		3,827,213	4,860,912	19,202,780	2.19	7					
2005.....		6,523,348	10,383,577	37,978,035	4.34	44					
2006.....		11,174,181	20,950,110	67,026,303	7.65	44					
2007.....		14,896,816	27,123,018	91,145,357	10.40	59					
2008.....		20,213,216	44,775,829	128,508,579	14.67	75					
2009.....		33,821,062	53,090,852	143,146,365	16.34	236					
2010.....		44,643,541	68,981,324	193,592,637	22.10	358					
2011.....		44,877,117	79,436,532	183,476,312	20.94	420					
2012.....		47,991,350	77,336,341	172,054,327	19.64	454					
2013.....		26,100,091	54,803,353	109,505,690	12.23	55					
2014.....		35,648,260	71,372,414	145,475,713	16.40	390					
2015.....		37,149,893	70,467,082	163,671,955	18.27	367					
2016.....		41,705,957	70,984,603	170,792,152	19.50	379					
<b>Total Direct Program.....</b>		<b>\$ 373,070,793</b>	<b>\$ 660,058,113</b>	<b>1,661,021,647</b>							

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Indirect Program Expenses</b>											
DSM Overhead and Other Indirect											
2002.....		128,855									
2003.....		(41,543)									
2004.....		142,337									
2005.....		177,624									
2006.....		309,832									
2007.....		765,561									
2008.....		980,305									
2009.....		1,025,704									
2010.....		1,189,310									
2011.....		1,389,135									
2012.....		1,335,509									
2013.....		741,287									
2014.....		1,065,072									
2015.....		1,891,042									
2016.....		2,263,893									
<b>Total.....</b>		<b>\$ 13,363,923</b>									
<b>Total Expenses</b>											
2002.....		2,061,375									
2003.....		2,524,685									
2004.....		3,969,550									
2005.....		6,700,972									
2006.....		11,484,013									
2007.....		15,662,377									
2008.....		21,193,521									
2009.....		34,846,766									
2010.....		45,832,851									
2011.....		46,266,252									
2012.....		49,326,859									

**Appendix 4. Historical DSM expense and performance, 2002–2016 (continued)**

Program/Year	Participants	Total Costs		Savings and Demand Reductions			Measure Life (Years)	Levelized Costs <sup>a</sup>		Program Life Benefit/Cost Ratios <sup>b</sup>	
		Utility Cost <sup>c</sup>	Resource Cost <sup>d</sup>	Annual Energy (kWh)	Average Energy <sup>e</sup> (aMW)	Peak Demand <sup>f</sup> (MW)		Total Utility (\$/kWh)	Total Resource (\$/kWh)	Utility	Total Resource
<b>Total Expenses</b>											
2013.....		\$ 26,841,378									
2014.....		36,713,333									
2015.....		39,040,935									
2016.....		42,763,464									
<b>Total 2002–2016.....</b>		<b>\$ 385,228,330</b>									

<sup>a</sup> Levelized Costs are based on financial inputs from Idaho Power's 2013 *Integrated Resource Plan* and calculations include line loss adjusted energy savings.

<sup>b</sup> Program life benefit/cost ratios are provided for active programs only.

<sup>c</sup> The Total Utility Cost is all cost incurred by Idaho Power to implement and manage a DSM program.

<sup>d</sup> The Total Resource Cost is the total expenditures for a DSM program from the point of view of Idaho Power and its customers as a whole.

<sup>e</sup> Average Demand = Annual Energy/8,760 annual hours.

<sup>f</sup> Peak Demand is reported for programs that directly reduce load or measure demand reductions during summer peak season. Peak demand reduction for demand response programs is reported at the generation level assuming 13 percent peak line losses.

<sup>1</sup> Savings are preliminary funder share estimates. Final results will be provided by NEEA in May 2017.

**Appendix 5. 2016 DSM program activity by state jurisdiction**

Program	Idaho			Oregon		
	Participants	Utility Costs	Demand Reduction/ Annual Energy Savings (MW)	Participants	Utility Costs <sup>a</sup>	Demand Reduction/ Annual Energy Savings(MW)
<b>Demand Response</b>						
A/C Cool Credit .....	27,947 homes	\$ 1,061,450	33	368 homes	\$ 41,845	0.4
Flex Peak Program.....	128 sites	520,088	29	9 sites	247,909	13
Irrigation Peak Rewards .....	2,236 service points	7,378,725	295	50 service points	221,351	7
<b>Total.....</b>		<b>\$ 8,960,263</b>	<b>357</b>		<b>\$ 511,104</b>	<b>21</b>
<b>Energy Efficiency</b>						
<b>Residential</b>						
Easy Savings.....	2,001 kits	127,587	402,961	– kits	–	–
Educational Distributions .....	65,749 kits/bulbs	2,336,721	14,680,660	1,316 kits/bulbs	56,164	468,945
Energy Efficient Lighting .....	1,405,052 bulbs	3,017,507	20,646,094	37,509 bulbs	63,200	447,719
Energy House Calls.....	343 homes	190,621	470,535	32 homes	15,815	39,324
ENERGY STAR® Homes Northwest .....	110 homes	140,648	150,282	– homes	1,510	–
Fridge and Freezer Recycling Program .....	1,527 refrigerators/ freezers	253,362	627,104	12 refrigerators/fr eezers	4,555	5,082
Heating & Cooling Efficiency Program .....	469 projects	567,729	1,073,380	17 projects	27,184	40,194
Home Energy Audit .....	539 audits	289,812	207,249	audits		
Home Improvement Program.....	482 projects	324,024	500,280	projects		
Multifamily Energy Savings Program .....	3 projects	59,046	149,760	projects		
Oregon Residential Weatherization .....				7 homes	3,930	2,847
Rebate Advantage.....	62 homes	104,658	385,528	4 homes	6,392	25,744
Simple Steps, Smart Savings™ .....	7,822 appliances/ showerheads	150,249	570,581	94 appliances/sh owerheads	3,535	6,739
Weatherization Assistance for Qualified Customers.....	234 homes/ non-profits	1,254,338	722,430	12 homes/non- profits	35,471	23,732
Weatherization Solutions for Eligible Customers.....	232 homes	1,323,793	621,653	homes		
<b>Sector Total</b>		<b>\$ 10,140,095</b>	<b>41,208,496</b>		<b>\$ 217,756</b>	<b>1,060,326</b>
<b>Commercial</b>						
Custom Projects (Custom Efficiency).....	185 projects	7,745,408	46,614,955	11 projects	237,216	903,916
Green Motors—Industrial.....	2 motor rewinds		50,955	2 motor rewinds	0	72,745
New Construction (Building Efficiency) .....	113 projects	1,888,663	12,254,358	3 projects	42,559	138,891
Retrofits (Easy Upgrades) .....	1,518 projects	4,811,357	27,040,532	59 projects	228,834	1,084,247
<b>Sector Total</b>		<b>\$ 14,445,428</b>	<b>85,960,800</b>		<b>\$ 508,608</b>	<b>2,199,799</b>

**Appendix 5. 2016 DSM program activity by state jurisdiction (continued)**

Program	Idaho			Oregon		
	Participants	Utility Costs	Demand Reduction/ Annual Energy Savings	Participants	Utility Costs	Demand Reduction/ Annual Energy Savings
<b>Irrigation</b>						
Green Motors—Irrigation .....	22 motor rewinds		72,871	1 motor rewind		746
Irrigation Efficiency Rewards .....	798 projects	\$ 1,737,168	12,860,872	53 projects	\$ 635,185	2,812,641
<b>Sector Total</b> .....		<b>\$ 1,737,168</b>	<b>12,933,743</b>		<b>\$ 635,185</b>	<b>2,813,387</b>
<b>Market Transformation</b>						
Northwest Energy Efficiency Alliance <sup>1</sup> .....		2,542,567	23,384,820		133,820	1,230,780
<b>Other Programs and Activities</b>						
<b>Residential</b>						
Energy Efficiency Education Initiative .....		278,108			12,071	
Shade Tree Project.....		76,642			–	
<b>Commercial</b>						
Oregon Commercial Audits .....		–			7,717	
<b>Other</b>						
Energy Efficiency Direct Program Overhead .....		276,074			16,964	
<b>Total Program Direct Expense</b>		<b>\$ 38,456,344</b>			<b>\$ 2,043,225</b>	
Indirect Program Expenses.....		2,147,479			116,414	
<b>Total Annual Savings</b> .....			<b>163,487,859</b>			<b>7,304,292</b>
<b>Total DSM Expense</b> .....		<b>\$ 40,603,823</b>			<b>\$ 2,159,639</b>	

<sup>a</sup> Levelized Costs are based on financial inputs from Idaho Power's *2013 Integrated Resource Plan* and calculations include line loss adjusted energy savings.

<sup>1</sup> Savings are preliminary funder share estimates provided by NEEA. Final savings for 2016 will be provided by NEEA May 2017.

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