ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

1407 W. North Temple, Suite 330
Salt Lake City, Utah 84116

June 18, 2019

VIA ELECTRONIC FILING
AND OVERNIGHT DELIVERY

Public Service Commission of Utah
Heber M. Wells Building, 4th Floor
160 East 300 South
Salt Lake City, UT 84114

Attention: Gary Widerburg
Commission Secretary

RE: In the Matter of Rocky Mountain Power's Demand-Side Management 2018 Annual Energy Efficiency and Peak Load Reduction Report – Docket No. 19-035-22

Dear Mr. Widerburg:

Pursuant to the Commission order dated February 16, 2017, in Docket No. 17-035-04, Rocky Mountain Power ("Company") hereby submits for filing its Demand-Side Management 2018 Annual Energy Efficiency and Peak Load Reduction Report ("2018 Report"). Appendix 8 to the 2018 Report is confidential in its entirety and is provided in accordance with the Utah Public Service Commission Rule 746-1-601.

In addition to the 2018 Report materials, enclosed with this letter is the Confidential Information Certificate that the Company desires parties in this docket to execute prior to obtaining access to confidential information.

It is respectfully requested that all formal correspondence and staff requests regarding this matter be addressed to:

By E-mail (preferred): datarequest@pacificorp.com
michael.snow@pacificorp.com

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

Informal inquiries may be directed to me at (801) 220-4214.

Sincerely,

Michael S. Snow
Manager, DSM Regulatory Affairs

Utah Energy Efficiency and Peak Reduction Annual Report

January 1, 2018 – December 31, 2018

Issued June 18, 2019

ROCKY MOUNTAIN POWER

POWERING YOUR GREATNESS

(This page intentionally left blank)

TABLE OF CONTENTS

List of Abbreviations and Acronyms

DSM	Demand-side Management
HCD	Utah Department of Workforce Services, Housing and Community Development Division
HVAC	Heating, Ventilation and Air Conditioning
IRP	Integrated Resource Plan
kWh	Kilowatt hour
LED	Lighting-emitting Diode
MW	Megawatt
MWh	Megawatt hour
NTG	Net-to-Gross
PCT	Participant Cost Test
PTRC	Total Resource Cost Test with 10 percent adder
RIM	Ratepayer Impact Measure Test
Schedule 193	Demand-Side Management Cost Adjustment
TRC	Total Resource Cost Test
UCT	Utility Cost Test
VFD	Variable Frequency Drive

EXECUTIVE SUMMARY

PacifiCorp is a multi-jurisdictional electric utility providing retail service to customers in Utah, California, Idaho, Oregon, Washington, and Wyoming. Rocky Mountain Power, a division of PacifiCorp ("Company"), serves approximately 915,000 customers in Utah. Rocky Mountain Power, working in partnership with its retail customers and with the approval of the Public Utilities Commission of Utah ("Commission"), acquires energy efficiency and peak reduction resources as cost effective alternatives to the acquisition of supply-side resources. These resources assist the Company in efficiently addressing load growth and contribute to the Company's ability to meet system peak requirements.

Company energy efficiency and peak reduction programs provide participating Utah customers with tools that enable them to reduce or assist in the management of their energy usage, while reducing the overall costs to the Company's customers. These resources are relied upon in resource planning as a least cost alternative to supply-side resources.

This report provides details on program results, activities, expenditures, and status of the Demand-Side Management Cost Adjustment tariff rider ("Schedule 193") revenue for the performance period from January 1, 2018 through December 31, 2018.[1] The Company, on behalf of its customers, invested $49.2 million in energy efficiency and peak reduction resource acquisitions during the reporting period. The investment yielded approximately 284,684 megawatt hours ("MWh") in first year energy savings,[2] 3,209,666 MWh of lifetime savings[3] from 2018 energy efficiency acquisitions and approximately 47 megawatts ("MW") of capacity reduction from energy efficiency savings[4] and maximum realized reductions associated with peak management activities of approximately 212 megawatts[5]. Net benefits based on the projected value of the energy savings over the life of the individual measures are estimated at $149.6 million [6].

The Demand-side Management ("DSM") portfolio was cost effective based on four of the five standard cost effectiveness tests[7] for the reporting period. The ratepayer impact cost test was less than 1.0 indicating near-term upward pressure was placed on the price per kilowatt-hour ("kWh") given a reduction in sales. The DSM portfolio cost effectiveness is provided in Table 1. Annual performance information for 2018 cost effectiveness, including inputs, is provided in detail in Appendix 2.

[1] Appendix 1 provides specific requirements from Docket No. 17-035-04 and where they are located in the annual report and appendices.
[2] Reported ex-ante savings are gross and at generation.
[3] Estimated lifetime savings of 2018 Energy Efficiency Acquisitions was calculated by multiplying First Year Acquisitions (measured at the generator) by the weighted average measure life of the portfolio of 11.3 years. No discount was assumed for possible savings degradation over the life of the measures. Savings are gross at generator.
[4] See Energy Efficiency Section for explanation on how the capacity contribution savings values are calculated.
[5] Realized load as measured at generation.
[6] See Table 1 – Utility Cost Test Net Benefits.
[7] Cost effectiveness results include realization rates and Net-to-Gross ("NTG") ratios.

Table 1 – DSM Portfolio Cost Effectiveness

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PacifiCorp Total Resource Test plus 10 percent (PTRC)[8]	2.37	$163,512,724
Total Resource Cost Test (TRC)[9]	2.15	$137,781,694
Utility Cost Test (UCT)[10]	2.39	$149,557,103
Participant Cost Test (PCT)[11]	3.28	$162,738,581
Ratepayer Impact Cost Test (RIM)[12]	0.98	($4,098,321)

2018 Performance Compared to Forecast

In Docket No 17-035-41 filed November 1, 2017, the Company filed its 2018 forecast for Class I load control and Class II energy efficiency programs against its Integrated Resource Plan ("IRP"). Overall, the Company achieved 98 percent of its Class I and Class II forecast. Table 2 compares the November filings to actual savings achieved.

[8] The PTRC is the total resource cost test with an additional 10 percent added to the benefit side of the benefit/cost formula to account for non-quantified environmental and non-energy benefits of conservation resources over supply side alternatives.
[9] The TRC considers the benefits and costs from the perspective of all utility customers, comparing the total costs and benefits from both the utility and utility customer perspectives. It's assumed to be the closest in valuation methodology to how supply-side resources are valued.
[10] The UCT provides a benefit to cost perspective from the utility only, comparing the total utility cost incurred to the benefit/value of the energy and capacity saved and contains no customer costs or benefits in calculation of the ratio.
[11] The PCT compares the portion of the resource paid directly by participants to the savings realized by the participants.
[12] The RIM examines the impact of energy efficiency expenditures on non-participating ratepayers overall. Unlike supply-side investments, energy efficiency programs reduce energy sales. Reduced energy sales can lower revenue requirements while putting near-term upward pressure on rates as the remaining fixed costs are spread over fewer kilowatt-hours.

Table 2
2018 Forecast to Actual Savings Comparison

Utah 2018 DSM Programs	2017 IRP for 2018 (Gross - at Gen)		2018 Forecast (Gross - at Gen)		2018 Actual (Gross - at Gen)	
	MWH	MW	MWH	MW	MWH	MW
Class 1 - Load Control Programs						
A/C Load Control		115		114		239
Irrigation Load Control		20		13		19
Total Class 1		**135**		**127**		**258**
Class 2 - Residential Programs						
Low Income			250	-	223	-
Home Energy Reports			52,000	9	39,282	7
wattsmart Homes			69,450	12	65,116	11
Total Residential Class 2	**N/A**		**121,700**	**21**	**104,622**	**18**
Class 2 - Non-Residential Programs						
wattsmart Business			171,130	31	180,063	33
Total Non-Residential Class 2	**N/A**		**171,130**	**31**	**180,063**	**33**
Total Class 2	**240,790**	**43**	**292,830**	**52**	**284,684**	**51**
Total Class 2 Estimated Range			**280,000 - 318,000**			
Total Class 2 w/incremental HER savings			**240,830**	**43**	**245,402**	

2018 Performance

Program and Sector level results for 2018 are provided in Table 3.

Table 3[13]
Utah Program Results for January 1, 2018 – December 31, 2018[14]

Load Management Programs	MW/Yr Savings (at site)	MW/Yr Savings (at gen)	Program Expenditures
Cool Keeper	219	239	$ 4,372,853
Irrigation Load Control	18	19	$ 439,906
Total Load Management	**237**	**258**	**$ 4,812,759**
Energy Efficiency Programs	**kWh/Yr Savings (at site)**	**kWh/Yr Savings (at gen)**	**Program Expenditures**
Low Income Weatherization	204,235	223,265	$ 52,212
Home Energy Reporting	35,934,000	39,282,330	$ 1,033,101
wattsmart Homes	59,565,726	65,116,061	$ 11,125,821
Total Residential	**95,703,961**	**104,621,656**	$ 12,211,134
*watt*smart Business Agricultural	2,204,892	2,408,558	$ 696,393
*watt*smart Business Commercial	124,043,388	134,850,048	$ 22,031,161
*watt*smart Business Industrial	40,440,287	42,804,021	$ 7,089,883
Total *watt* smart Business	**166,688,567**	**180,062,627**	**$ 29,817,438**
Total Energy Efficiency	**262,392,528**	**284,684,283**	**$ 42,028,572**
Other Portfolio Expenditures			
Outreach and Communications			$ 1,412,862
Portfolio - EM&V Non-Residential			$ 426,120
Portfolio - EM&V Residential			$ 185,309
Portfolio - Systems Support			$ 161,261
Portfolio Potential Study			$ 71,461
Portfolio Energy Code Training			$ 63,208
Total Utah Program Expenditures			**$ 49,161,552**

[13] Reported savings are ex-ante.
[14] The values at generation include line losses between the customer site and the generation source. The Company's line losses by sector for 2017 are 9.32 percent for residential, 8.71 percent for commercial, 5.85 percent for industrial and 9.24 percent for irrigation.

REGULATORY ACTIVITIES

During the reporting period, the Company made a number of filings with the Commission to be in compliance with various reporting requirements and to modify DSM programs. The Company also provided various reports and evaluations to the DSM Steering Committee.

- On January 31, 2018, the Company circulated its quarterly DSM Balancing Account Report for the fourth quarter of 2017 to the DSM Steering Committee.

- On April 25, 2018, the Company circulated its quarterly DSM Balancing Account Report for the first quarter of 2018 to the DSM Steering Committee.

- On May 17, 2018, a 45-day notice was posted on the Company's website to make modifications to the *watt*smart Business program through the "up to" incentive process established in Docket No. 16-035-T03. Key modifications included reducing lighting incentives in the Mid-Market and Lighting System Retrofit programs. Notice of these changes was also sent to the DSM Steering Committee on May 17, 2018. Modifications for the reduced lighting incentives went into effect July 1, 2018.

- On May 18, 2018, the 2017 Energy Efficiency and Peak Reduction Report was filed in Docket No. 18-035-19. The Commission acknowledged the report as being compliant with reporting requirements in its correspondence issued July 9, 2018.

- On July 2, 2018, the Company filed its DSM Spring Semi-Annual Forecast Report in Docket No. 18-035-27. The Commission acknowledged the report as being compliant with reporting requirements in its correspondence issued August 20, 2018.

- On July 20, 2018, the Company circulated its quarterly DSM Balancing Account Report for the second quarter of 2018 to the DSM Steering Committee.

- On August 15, 2018, a 45-day notice was posted on the Company's website to make modifications to the *wattsmart Homes* program through the "up to" incentive process established in Docket No. 15-035-T13. Key modifications included reducing incentives for portable evaporative coolers. Notice of these changes was also sent to the DSM Steering Committee on August 15, 2018. Modifications for the reduced portable evaporative cooler incentives went into effect September 29, 2018.

- On November 1, 2018, the Company circulated its quarterly DSM Balancing Account Report for the third quarter of 2018 to the DSM Steering Committee.

- On November 1, 2018, the Company filed its DSM Fall Semi-Annual Forecast Report in Docket No. 18-035-27. The Commission acknowledged the report as being compliant with reporting requirements in its correspondence issued December 20, 2018.

- On November 1, 2018, an advice letter was filed in Docket No. 18-035-T05 to adjust Schedule 193 rates and issue a one-time refund to customers. The Commission approved the adjustment and refund in its order issued December 6, 2018, with an effective date of January 1, 2019.

- On November 28, 2018, the Company filed for approval of its 2019 Strategic Communications and Outreach Plan for DSM programs in Docket No. 18-035-45. The Commission approved the plan in its order issued December 20, 2018, with an effective date of January 1, 2019.

Advisory Group and Steering Committee Activities:

Consistent with the discussion in Docket No. 12-035-69, the Company seeks input regarding its energy efficiency programs from both the Utah DSM Steering Committee and the Utah DSM Advisory Group. Both groups include representatives from a variety of constituent organizations. Members of the Steering Committee, who are not already governed by Commission confidentiality rules, signed Confidentiality Agreements with the Company in order to provide input on issues involving sensitive, confidential or proprietary information.

The Company consulted with the DSM Steering Committee and DSM Advisory Group throughout 2018 on various matters and held formal, in-person meetings on the following matters:

March 19, 2018 – DSM Steering Committee
- Provided an update on the Small Business Direct program;
- Discussed proposed changes to the *wattsmart Homes* program;
- Reviewed 2017 total preliminary results; and
- Discussed the concept of having a 3-year DSM Strategic Plan.

June 26, 2018 – DSM Steering Committee
- Provided an update on lighting trends;
- Provided an update on the *Home Energy Reports* program; and
- Reviewed the semi-annual report.

June 26, 2018 – DSM Advisory Group
- Provided an overview of DSM organization changes;
- Reviewed the 2017 DSM Annual Report; and
- Reviewed program evaluations published in 2017.

September 6, 2018 – DSM Steering Committee
- Provided an update on the *Home Energy Reports* program;
- Reviewed the impending *Home Energy Reports* program evaluation;
- Provided an update on the *Cool Keeper* program;
- Reviewed the analysis completed on the *Cool Keeper* program; and
- Began discussion on the role of the Steering Committee.

October 30, 2018 – DSM Advisory Group

- Discussed 2019 DSM strategies;
- Provided information on lighting market trends;
- Discussed the lighting program

October 30, 2018 – DSM Steering Committee

- Reviewed action and follow-up items from previous meetings;
- Reviewed the November 1, 2019 Forecast Report;
- Discussed proposed adjustments to the Schedule 193 rates;
- Discussed proposed changes to the *wattsmart Homes* program;
- Discussed proposed changes to the *watt*smart Business program;
- Provided an update on the *Home Energy Reports* program; and
- Provided an update on demand response.

December 12, 2018 – DSM Steering Committee

- Provided an overview of program available to limited income households;
- Provided a summary of the State-wide Weatherization Assistance Program; and
- Discussed possible changes to the *Low Income Weatherization* program.

DSM EXPENDITURES

Energy efficiency and peak reduction activities are funded by revenue collected through Schedule 193. Expenditures are charged as incurred. The DSM balancing account is the mechanism used for managing Schedule 193 revenues collected and tracking the offsetting DSM incurred expenses. The balancing account summary for 2018 is shown in Table 4.

Table 4
Schedule 193 Balancing Account Summary

Month	Monthly Program Costs	Monthly Net Accrued Costs*	Rate Recovery	Carrying Charge	Cash Basis Accumulated Balance	Accrual Based Accumulated Balance
Balance Dec. 2017					$ 319,739	$ 4,389,495
Jan-18	$ 3,568,395	$ 522,546	$ (2,527,092)	$ 6,450	$ 1,367,492	$ 5,959,794
Feb-18	$ 3,374,756	$ (255,983)	$ (4,648,748)	$ 5,607	$ 99,108	$ 4,435,427
Mar-18	$ 4,020,585	$ (809,314)	$ (4,833,974)	$ (2,361)	$ (716,642)	$ 2,810,363
Apr-18	$ 3,506,710	$ (239,128)	$ (4,946,239)	$ (11,024)	$ (2,167,194)	$ 1,120,683
May-18	$ 3,627,311	$ 581,878	$ (4,830,193)	$ (21,249)	$ (3,391,325)	$ 478,429
Jun-18	$ 4,220,629	$ 699,578	$ (6,141,276)	$ (33,399)	$ (5,345,372)	$ (776,039)
Jul-18	$ 5,022,885	$ 384,297	$ (7,999,387)	$ (52,448)	$ (8,374,322)	$ (3,420,692)
Aug-18	$ 4,164,510	$ 868,008	$ (8,327,454)	$ (80,248)	$ (12,617,514)	$ (6,795,876)
Sep-18	$ 2,671,925	$ 454,900	$ (7,382,831)	$ (114,918)	$ (17,443,337)	$ (11,166,799)
Oct-18	$ 4,757,938	$ (305,047)	$ (5,424,165)	$ (136,434)	$ (18,245,999)	$ (12,274,507)
Nov-18	$ 6,769,886	$ (2,282,310)	$ (4,975,604)	$ (133,152)	$ (16,584,869)	$ (12,895,688)
Dec-18	$ 5,518,134	$ 134,805	$ (5,686,626)	$ (127,935)	$ (16,881,296)	$ (13,057,310)
2018 Total	**$ 51,223,665**	**$ (245,770)**	**$ (67,723,589)**	**$ (701,111)**		

*December 2018 total accrual was $3,823,986

Column Explanations:

Monthly Program Costs - Monthly expenditures for all DSM program activities posted in 2018.

Monthly Net Accrued Costs - Monthly net change of program costs incurred during the period not yet posted.

Rate Recovery - Revenue collected through Schedule 193.

Carrying Charge - Monthly carrying charge based on "Cash Basis Accumulated Balance" of the account.

Cash Basis Accumulated Balance - A running total of account activities. A negative accumulative balance means cumulative revenue exceeds cumulative expenditures; positive accumulative balance means cumulative expenditures exceed cumulative revenue.

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

PLANNING PROCESS

Integrated Resource Plan

The Company develops a biennial integrated resource plan ("IRP") as a means of balancing cost, risk, uncertainty, supply reliability/deliverability and long-run public policy goals.[15] The plan presents a framework of future actions to ensure the Company continues to provide reliable, reasonably priced service to customers. Energy efficiency and peak management opportunities are incorporated into the IRP based on their availability, characteristics and costs.

PacifiCorp divides energy efficiency and peak management resources into four general classes:

- **Class 1 DSM – Resources from fully dispatchable or scheduled firm capacity product offerings/programs** – After a customer agrees to participate in a Class 1 DSM program, the timing and persistence of the load reduction is involuntary on their part within the agreed upon limits and parameters of the program. Program examples include residential and small commercial central air conditioner load control programs that are dispatchable, and irrigation load management and interruptible or curtailment programs (which may be dispatchable or scheduled firm, depending on the particular program design or event noticing requirements).

- **Class 2 DSM – Resources from non-dispatchable, firm energy and capacity product offerings/programs** – Class 2 DSM programs are those for which sustainable energy and related capacity savings are achieved through facilitation of technological advancements in equipment, appliances, lighting and structures, or repeatable and predictable voluntary actions on a customer's part to manage the energy use at their facility or home. Class 2 DSM programs generally provide financial or service incentives to customers to improve the efficiency of existing or new customer-owned facilities through: (1) the installation of more efficient equipment, such as lighting, motors, air conditioners, or appliances; (2) upgrading building efficiency through improved insulation levels, windows, etc.; or (3) behavioral modifications, such as strategic energy management efforts at business facilities and home energy reports for residential customers. The savings endure (are considered firm) over the life of the improvement or customer action. Program examples include comprehensive commercial and industrial new and retrofit energy efficiency programs, comprehensive home improvement retrofit programs, strategic energy management and home energy reports.

- **Class 3 DSM – Resources from price responsive energy and capacity product offerings/programs** – Class 3 DSM programs seeks to achieve short-duration (hour by hour) energy and capacity savings from actions taken by customers voluntarily, based on a financial incentive or signal. As a result of their voluntary nature, participation tends to be low and savings are less predictable, making Class 3 DSM resources less suitable to

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

incorporate into resource planning, at least until their size and customer behavior profile provide sufficient information for a reliable diversity result (predictable impact) for modeling and planning purposes. Savings typically only endure for the duration of the incentive offering and, in many cases, loads tend to be shifted rather than being avoided. The impacts of Class 3 DSM resources may not be explicitly considered in the resource planning process; however, they are captured naturally in long-term load growth patterns and forecasts. Program examples include time-of-use pricing plans, critical peak pricing plans, and inverted block tariff designs

- **Class 4 DSM—Non-incented behavioral-based savings achieved through broad energy education and communication efforts –** Class 4 DSM programs promote reductions in energy or capacity usage through education. These efforts seek to help customers better understand how to manage their energy usage through no-cost actions such as conservative thermostat settings and turning off appliances, equipment and lights when not in use. The programs are also used to increase customer awareness of additional actions they might take to save energy and the service and financial tools available to assist them. Similar to Class 3 DSM resources, the impacts of Class 4 programs may not be explicitly considered in the resource planning process; however, they are captured naturally in long-term load growth patterns and forecasts. Program examples include Company brochures with energy savings tips, customer newsletters focusing on energy efficiency, case studies of customer energy efficiency projects, and public education campaigns.

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

As technical support for the IRP, the Company engages a third-party consultant to conduct a DSM Potential Assessment ("Potential Assessment").[16] The study primarily seeks to develop reliable estimates of the magnitude, timing and cost of DSM resources likely available to PacifiCorp over the 20-year planning horizon of the IRP. The main focus of the Potential Assessment is on resources with sufficient reliability characteristics that are anticipated to be technically feasible and considered achievable during the IRP's 20-year planning horizon. By definition, the estimated achievable technical potential is the energy efficiency potential that may be achievable to acquire during the 20-year planning horizon prior to cost effectiveness screening.

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

[16] PacifiCorp's Demand-side Resource Potential Assessments can be found at http://www.pacificorp.com/es/dsm.html.

Cost effectiveness

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

Program cost effectiveness is performed using a Company specific modeling tool, created by a third party consultant. The tool is designed to incorporate PacifiCorp data and values such as avoided costs, and generally follows the methodology specified in California's Standard Practice Manual. The analysis assesses the costs and benefits of DSM resource programs from different stakeholder perspectives, including participants and non-participants, based on four tests described in the Standard Practice Manual (TRC, UCT, PCT and RIM) as well as an additional fifth test, PTRC. Utah observes the UCT as the primary cost effectiveness test.

PEAK REDUCTION PROGRAMS

Peak Reduction programs assist the Company in balancing the timing of customer energy requirements during heavy summer use hours. Peak reduction programs are intended to defer the need for higher cost investments in delivery infrastructure and peak generation resources that would otherwise be needed to serve those loads for a few select hours each year. These programs help the Company maximize the efficiency of the Company's existing electrical system and reduce costs for all customers.

Programs targeting capacity-related resources are often specific to end use loads most prevalent in a given jurisdiction, such as the agricultural pumping and residential cooling loads in Utah. In 2018, the Company offered the *Irrigation Load Control* program (Schedule 105) for the agricultural sector and the *Cool Keeper* program (Schedule 114) for the residential and small commercial sectors.

The Peak Reduction Programs achieved a total of 212 MW of maximum realized demand reduction (gross at generation) in 2018. Cost effectiveness results for the reporting period are provided in Table 5.

Table 5
Cost Effectiveness for Load Control Portfolio[17]

Benefit/Cost Test	Benefit/Cost Ratio
PTRC	Pass
TRC	Pass
UCT	Pass
PCT	N/A
RIM	Pass

Irrigation Load Control

The *Irrigation Load Control* program is offered to irrigation customers receiving electric service on Schedule 10, Irrigation and Soil Drainage Pumping Power Service. Participants enroll with a third party administrator and allow the curtailment of their electricity usage in exchange for an incentive. Customer incentives are based on a site's average available load during load control program hours adjusted for the number of opt outs or non-participation. The program is available May 29 through August 17 and its hours are from 12 pm to 8 pm Mountain Time, Monday through Friday, and do not include holidays. For most participants, their irrigation equipment is set up with a dispatchable two-way control system giving the Company control over their loads. Participants

[17] Decrement values or avoided costs are considered confidential on load control programs. Cost effectiveness ratios and inputs will be available under a protective agreement. A "Pass" designation equates to a benefit to cost ratio of 1.0 or better.

are provided a day-ahead notification of control events and have the choice to opt-out of a limited number of dispatch events per season.

A summary of the program's cost effectiveness results, performance and participation for the 2018 program are provided in Tables 6 and 7.

Table 6
Cost Effectiveness for Irrigation Load Control

Benefit/Cost Test	Benefit/Cost Ratio
PTRC	Pass
TRC	Pass
UCT	Pass
PCT	N/A
RIM	Pass

Table 7
Irrigation Load Control Program Performance

Total Enrolled MW (Gross – at Gen)	39
Maximum Potential MW (at Gen)	19
Average Realized load MW (at Gen)	10
Maximum Realized load MW (at Gen)	11
Participation Customers	53
Participation (Sites)	239

Program Management

The program manager who is responsible for the *Irrigation Load Control* programs in Utah is also responsible for the *Irrigation Load Control* program in Idaho and the *Cool Keeper* program in Utah along with *Home Energy Reports* program in Utah, Idaho and Wyoming. For each state the program manager is responsible for managing the program administrator, the cost effectiveness of the program, contracting with program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending changes to increase participation.

Program Administration

EnerNoc administers and manages the *Irrigation Load Control* program through a pay-for-performance structure and is responsible for all aspects of the program, including

- Customer satisfaction including call center support,
- Marketing to maintain a minimum level of megawatt reductions,
- Field operations including installation and maintenance of the EnerNOC devices,
- Management of participation data and reporting to actively manage the program,
- Quality control of the Irrigation Load Control device infrastructure,

- A platform to dispatch the communication network, and
- Customer incentives.

Irrigation Load Control Events and Performance

There were eleven load control events initiated in 2018. The date, time and estimated impact for each event is provided in Table 8.

Table 8
Irrigation Load Control Events

Date	Event	Event Times	Load Reduction - Utah at Gen (MW)
7/6/2018	1	4:00PM - 8:00PM	8
7/9/2018	2	3:00PM - 7:00PM	11
7/12/2018	3	3:00PM - 7:00PM	11
7/18/2018	4	4:00PM - 8:00PM	9
7/20/2018	5	3:00PM - 7:00PM	8
7/23/2018	6	4:00PM - 8:00PM	11
7/25/2018	7	3:00PM - 7:00PM	11
7/31/2018	8	4:00PM - 8:00PM	10
8/6/2018	9	3:00PM - 7:00PM	11
8/8/2018	10	4:00PM - 8:00PM	10
8/14/2018	11	4:00PM - 8:00PM	9

Program Changes

No program changes occurred during 2018.

Evaluation

An analysis of the 2016 – 2017 Irrigation Load Control program was completed in 2018 and was shared with the DSM Steering Committee.

Cool Keeper

The *Cool Keeper* program is an air conditioner direct load management program targeting residential and qualifying commercial customers (equipment size equal to or less than 15 tons) who cool their homes and businesses with electric central air conditioners. On select summer weekday afternoons, when electricity demand is at its highest, the *Cool Keeper* control equipment installed on a participating customer's cooling equipment is sent a signal to cycle the operation of the air conditioners compressor "off and on" for brief periods each hour in coordination with the

air conditioners of other participating customers. For their participation, customers receive an annual bill credit of $5 to $40 per air conditioner depending on the size of the air conditioner and when the customer signed up. If the customer signs up prior to June 1, the incentive is $20 or $40 and depends on the size of the A/C unit. After June 1, the incentive is pro-rated.

The Cool Keeper load control system operates through two-way communications equipment with a wireless mesh network for improved control, measurement and verification of program performance.

A summary of the program's cost effectiveness, performance and participation are provided in Tables 9 and 10 below.

Table 9
Cost Effectiveness for Cool Keeper

Benefit/Cost Test	Benefit/Cost Ratio
PTRC	Pass
TRC	Pass
UCT	Pass
PCT	NA
RIM	Pass

Table 10
Program Performance for Cool Keeper

Total Enrolled MW (at Gen)	239
Maximum Potential MW (at Gen)	239
Average Realized Load MW (at Gen)	139
Maximum Realized MW (Gross – at Gen)	201
Total Participation	105,633

Cool Keeper Load Control Events and Performance

There were seven control events initiated in 2018. The date, time and estimated impact for each event is provided in Table 11. During the 2018 control season, the Company modified the cycling strategy for events approximately 30 minutes or less. For short events, the cycling strategy was modified to a 100% cycling compared to a 50% cycling for longer events. The modified cycling strategy is allowing the program to curtail significantly more load over shorter periods of time without creating a negative customer experience. The program called more events during 2018 compared to previous years, but the length of each event was significantly shorter. The majority of customers are unaware control events are occurring and there is no noticeable increase to the temperature in their residence. Customer satisfaction for the overall program was very high during 2018 based on customer surveys performed by the program administrator.

Table 11
Cool Keeper Load Control Events

Date	Event	Event Times	Estimated Load Reduction - Utah at Gen (MW)
June 4, 2018	1	5:33PM-5:45PM	144
June 6, 2018	2	2:24PM-2:29PM	71
June 27, 2018	3	3:58PM-4:28PM	142
June 27, 2018	4	4:47PM-4:53PM	66
June 28, 2018	5	2:53PM- 3:29PM	159
July 18, 2018	6	5:09PM-5:14PM	192
July 18, 2018	7	6:30PM-6:35PM	201

Program Management

The program manager who is responsible for the *Cool Keeper* program in Utah is also responsible for the *Irrigation Load Control* programs in Utah and Idaho along with *Home Energy Reports* in Utah, Idaho and Wyoming. The program manager is responsible for managing the program administrators, the cost effectiveness of the program, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions set out in each tariff or state's compliance requirements.

Program Administration

The *Cool Keeper* program is administered by GoodCents and Eaton. GoodCents is responsible for:

- Field operations including trouble calls, installation, and maintenance of the Cool Keeper devices,
- Customer satisfaction including call center support,
- Management of Cool Keeper participation data and reporting to actively manage the program,
- Quality control of the Cool Keeper device infrastructure to ensure a 99% availability of active devices, and
- Marketing to maintain a minimum level of participation and megawatt reductions.

Eaton is responsible for:

- Manufacture and delivery of the Cool Keeper devices,
- Installation, operation, and maintenance of the wireless mesh communication network,
- Quality control of the wireless mesh network,
- A hosted solutions platform to dispatch and monitor the health of the communication network, and
- Program analytics including the ability to gain insight into the system and identify Cool Keeper devices which are no longer communicating.

Program Changes

No program changes in 2018.

Evaluation

An analysis of the 2016 – 2017 A/C Cool Keeper program was completed in 2018. The analysis was shared with the DSM Steering Committee.

ENERGY EFFICIENCY PROGRAMS

Energy Efficiency programs are offered to all major customer sectors: residential, commercial, industrial and agricultural. The overall energy efficiency portfolio included four programs: *wattsmart Homes* – Schedule 111, *Home Energy Reports, Low Income Weatherization* – Schedule 118, and *Non-Residential Energy Efficiency* (*watt*smart Business) – Schedule 140. In addition to the energy efficiency programs, the Company, on behalf of customers, invested in outreach and education for the purpose of promoting the efficient use of electricity and improving program performance.

Energy efficiency savings are reported as ex-ante, gross and at site. The portfolio was cost effective from four of the five cost tests. The ratepayer impact test was less than 1.0 indicating that there is near term upward pressure placed on the price per kWh given a reduction in sales. Cost effectiveness results of the 2018 energy efficiency portfolio is provided in Table 12.

Table 12
Cost Effectiveness for Energy Efficiency Portfolio

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	1.10	$7,898,056
TRC	1.00	$230,178
UCT	1.73	$32,329,986
PCT	3.05	$142,414,181
RIM	0.38	($123,034,229)

Table 13 provides a program-level summary of gross and net savings acquired in 2018 at site and at generation.

Table 13
Energy Efficiency Gross and Net Savings[18]

Program	Gross kWh Savings at Site	Net kWh Savings at Site	Gross kWh Savings at Gen	Net kWh Savings at Gen
Low Income	204,235	204,235	223,265	223,265
Home Energy Reporting	35,934,000	35,215,320	39,282,330	38,496,684
wattsmart Homes	59,565,726	37,822,054	65,116,061	41,346,313
*watt*smart Business	166,688,567	139,556,259	180,062,627	150,773,075
Total	262,392,528	212,797,868	284,684,283	230,839,337

[18] Net savings include realization rates and NTG ratios.

Estimated Peak Contributions

The reported capacity reduction of 47 MW (at generation) for energy efficiency programs during 2018 represents the estimated MW impact of the energy efficiency portfolio during PacifiCorp's system peak period. An energy-to-capacity conversion factor developed from Class 2 DSM selections in the 2017 IRP is used to translate 2018 energy savings to estimated demand reduction during the system peak. The use of this factor in the MW calculation assumes that the energy efficiency resources acquired through the Company's programs have the same average load profile as those energy efficiency resources selected in the 2017 IRP. Use of this factor in determining the MW contribution of energy efficiency programs is detailed in Table 14.

Table 14
Estimated Peak Contribution

Description	Value
First year energy efficiency program MWh savings acquired during 2018	284,684
Conversion factor: Coincident MW/MWh	0.000165
Estimated coincident peak MW contribution of 2018 energy efficiency acquisitions	47.09

RESIDENTIAL PROGRAMS

The residential energy efficiency portfolio was comprised of three programs: *wattsmart Homes* (formerly Home Energy Savings), *Home Energy Reports*, and *Low Income Weatherization.* Residential savings decreased by approximately 26% from 2017.

The residential portfolio was cost effective based on two of the five standard cost effectiveness tests for the 2018 reporting period. The marginal cost effectiveness for the TRC and PTRC is largely due to the reduction in avoided costs calculated for the 2017 IRP and increased customer reported costs for specific measure groups in *wattsmart Homes* program. The RIM was less than 1.0 indicating that there is near term upward pressure placed on the price per kWh given a reduction in sales.

Table 15 shows the cost effectiveness results for the residential portfolio. Includes all residential-sector portfolio costs.

Table 15
Cost Effectiveness for Residential Portfolio

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	0.88	($2,890,755)
TRC	0.80	($4,859,037)
UCT	1.59	$7,286,382
PCT	2.94	$43,232,800
RIM	0.33	($39,756,110)

wattsmart Homes

The *wattsmart Homes* program is designed to provide access to and incentives for more efficient products and services installed or received by customers in new or existing homes, multi-family housing units or manufactured homes for residential customers under Electric Service Schedules 1, 2, or 3. Landlords who own property where the tenant is billed under Electric Service Schedules 1, 2, or 3 also qualify for the program. Program cost effectiveness is provided in Table 16 below.

Table 16
Cost Effectiveness for *wattsmart Homes*

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	0.85	($3,455,353)
TRC	0.77	($5,256,797)
UCT	1.62	$6,888,622
PCT	2.76	$39,085,827
RIM	0.33	($36,040,853)

Program participation by measure category is provided in Table 17 and by delivery channel in Table 18.

Table 17
Program Performance by Measure Categories (Units)

Measure Category	Total kWh (at Site)	Total Incentive	Total Quantity
Building Shell	196,652	$ 122,511	1,315,100 (sq ft)
Energy Kits	590,477	$ 19,579	2,485
HVAC	9,588,063	$ 1,919,294	20,548
Lighting	43,615,579	$ 3,490,343	2,048,704
Water Heating	7,604	$ 2,690	5
Whole Building	4,361,710	$ 1,200,762	37
Whole Home	1,205,641	$ 564,600	3,314
Grand Total	**59,565,726**	**$ 7,319,779**	

Table 18
Program Performance by Delivery Channel

Delivery Channel	Total kWh (at Site)	Total Incentive	Total Quantity
Downstream	**8,663,974**	**$ 2,527,630**	
Building Shell	196,652	$ 122,511	1,315,100 (sq ft)
Energy Kits	590,477	$ 19,579	2,485
HVAC	2,301,890	$ 617,489	11,239
Water Heating	7,604	$ 2,690	5
Whole Building	4,361,710	$ 1,200,762	37
Whole Home	1,205,641	$ 564,600	3,314
Midstream	**7,286,173**	**$ 1,301,805**	
HVAC	7,286,173	$ 1,301,805	9,309
Upstream	**43,615,579**	**$ 3,490,343**	
Lighting	43,615,579	$ 3,490,343	2,048,704
Grand Total	**59,565,726**	**$ 7,319,779**	

The New Homes residential program is combined with the *wattsmart Homes* program. Consistent with previous annual reports, Table 19 shows the single family and multifamily participation rates. In 2018, the multifamily new construction program design changed to a custom program with incentives paid per kWh savings for above code builds.

Table 19
Whole Home Measure Category
Single Family and Multifamily Participation

New Construction Measures	Total kWh (at Site)	Total Incentives	Total Quantity
Single Family			
Central Air Conditioner	6,981	$ 3,900	39
Gas Furnace w/ ECM	37,929	$ 21,150	141
Whole Home ENERGY STAR Certification	41,200	$ 12,875	515
Whole Home HERS Index 56-62	441,807	$ 229,425	1,311
Whole Home HERS Index 49-55	545,266	$ 242,700	809
Whole Home HERS Index <= 48	40,740	$ 17,000	28
Total Single Family	**1,113,923**	**$ 527,050**	**2,843**
Multi Family			
Central Air Conditioner	-	$ -	-
Gas Furnace w/ ECM	259	$ 100	1
Whole Home ENERGY STAR Certification	8,880	$ 4,000	200
Whole Home HERS Index 56-62	69,542	$ 31,900	319
Whole Home HERS Index 49-55	56,244	$ 25,800	129
Whole Home HERS Index <= 48	1,962	$ 900	3
Total Multi Family	**136,887**	**$ 62,700**	**652**
Grand Total	**1,250,810**	**$ 589,750**	**3,495**

The new custom multifamily offering approved in October 2017 started delivering savings in 2018 which included low income and market rate properties. Table 20 provides savings results for the custom multifamily program in 2018.

Table 20
Whole Building Measure Category
Custom Multifamily Offering

Custom Multifamily	Total kWh (at Site)	Total Incentive
Low Income	**2,206,684**	**$ 662,005**
New Construction	773,544	$ 232,063
Retrofit	1,433,140	$ 429,942
Market Rate	**2,155,026**	**$ 538,757**
New Construction	1,434,189	$ 358,547
Retrofit	720,837	$ 180,209
Grand Total	**4,361,710**	**$ 1,200,762**

Program Management

The program manager who is responsible for the *wattsmart Homes* program in Utah is also responsible for the program in Idaho and Wyoming. For each program and in each state the program manager is responsible for program cost effectiveness, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending tariff changes in the terms and conditions.

Program Administration

The *wattsmart Homes* program is administered by CLEAResult, Nexant and ICAST, who are responsible for:

- Retailers – CLEAResult identifies, recruits, supports and assists retailers to increase the sale of energy efficient lighting, appliances and electronics. CLEAResult enters into promotion agreements with each manufacturer and retailer for the promotion of discounted LED bulbs, evaporative coolers and room air conditioners. The agreements include specific retail locations, products receiving incentives and not-to-exceed annual budgets.
- Trade ally engagement – CLEAResult provides participating weatherization and HVAC trade allies with program materials, training, and regular updates. Nexant provides participating central air conditioner and gas furnace distributors and trade allies with program materials, training and regular updates.
- Inspections – CLEAResult and Nexant recruit and hire inspectors to verify the installation of measures. A summary of the inspection processes is in Appendix 3.
- Multifamily new construction and retrofit – ICAST identifies, recruits, supports and assists builders, developers, and property owners and managers to include energy efficiency products during the build phase and/or as part of renovating properties.

- Manage savings acquisition to targets within budget.
- Continual improvement of program operations and customer satisfaction.
- Incentive processing and call-center operations – CLEAResult receives requests for incentives, determines whether the applications are completed, works directly with customers when information is incorrect and/or missing from the application and processes the application for payment. Nexant receives requests for central air conditioner and gas furnace incentives, determines eligibility requirements are met, works directly with distributors and trade allies when information is incorrect and/or missing and processes the application for payment. ICAST and local Home Energy Rating Score ("HERS") raters provide modeling services for calculating kWh savings above codes and standards. ICAST receives requests for incentives, determines eligibility requirements are met, works directly with builders and HERS raters when information is incorrect and/or missing and processes the application for payment.
- Program specific customer communication and outreach – A summary of the communication and outreach conducted by CLEAResult, ICAST and Nexant on behalf of the Company are outlined in Appendix 7.

Infrastructure

Multiple retailers and trade allies help deliver energy efficient products on behalf of the Company. The list of participating and non-participating retailers and trade allies by delivery channel and measure is provided in Appendix 4.

Program Changes

In 2018, the *wattsmart Homes* program offered instant incentives via coupon downloads for smart thermostats in participating online and brick and mortar retailers. Additionally, heat pump water heaters were transitioned to retail midstream.

In an effort to prepare for the expiration of the CLEAResult contract and to have the ability to improve program performance quickly, a Request for Proposal ("RFP") for Master Service Agreements ("MSA") was issued and awarded to six different firms who qualify to manage either all aspects of the program or specific deliveries, such as marketing and engineering services.

In the fourth quarter, an RFP was issued to the qualified bidders of the MSA firms to implement the Company's residential program broken down by services categories. Six proposals were received. Two bidders, Evergreen Incorporated and CLEAResult won the bids and are positioned to begin program implementation.

Evaluation

An RFP was issued and awarded for evaluation activities for program years 2017-2018, with results anticipated the end of 2019.

Home Energy Reports Program

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

Program cost effectiveness is provided in Table 21.

Table 21
Cost effectiveness for Home Energy Reports Program

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	1.63	$652,886
TRC	1.48	$499,615
UCT	1.48	$499,615
PCT	N/A	N/A
RIM	0.31	($3,347,722)

Table 22 summarizes the savings and participation by wave. The "legacy" group is defined as the July 2012 initial participant wave, the "expansion" group is defined as the August 2014 participant expansion wave, the "refill" group is defined as the additional customers added in August 2016 and the "refill 2" group is defined as the new refill customers who were added to receive electronic only report starting in November 2018.

Table 22
Savings and Participation for Home Energy Reports

	Legacy	Expansion	Refill	Refill 2	Total
2018 Savings kWh	17,036,000	15,341,000	3,545,000	12,000	**35,934,000**
Participation as of Dec. 2018	60,684	133,969	27,587	100,051	**321,197**

Reports were initially provided to approximately 240,360 customers in 2018. In November 2018, an additional wave of participants was added, at which point there were approximately 325,130 recipients of reports. The number of participants decrease over time due to customer attrition related to general customer churn (customer move-outs) and customers requesting to be removed from the program. In 2018, only 0.34% of customers (1,095 customers) have requested to be removed from the program. As of December 2018, there were 321,197 customers who were active recipients of Home Energy Reports.

Program Management

The program manager who is responsible for the *Home Energy Reports* program in Utah is also responsible for the program in Idaho and Wyoming as well as *Irrigation Load Control* program in Idaho and Utah and *Cool Keeper* program in Utah. For each program and in each state the program manager is responsible for the cost effectiveness of the program, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and continually improving the program.

Program Administration

The *Home Energy Reports* program is administered by Bidgely. Bidgely's Utility Artificial Intelligence platform leverages energy disaggregation to provide customers with personalized information regarding their energy usage by appliance and how their usage compares to similar homes. Furthermore, users receive recommendations on how to save energy and money by making small behavioral changes to their energy consumption. The Company contracted with Bidgely to provide energy savings, software services and delivery of energy reports to customers.

Bidgely is responsible for the following:

- Design and distribute paper and electronic reports. (All participating customers either receive paper reports or an email report based upon their preferences.)
- Maximizing email treatment for customers receiving electronic reports.
- Deploying and maintaining a web portal – All participants have access to a web portal containing the same information about their usage provided in the report. In addition, all Utah residential customers (including non-participants) have access to the web portal which contains other benefits such as the ability for customers to update their home profile (for more accurate comparisons) and suggestions on ways to save energy.

Program Changes

In January 2018, Bidgely was issued a contract to be the new program administrator. The new design and functionality was introduced in 2018 and provided an enhanced customer experience.

Evaluation

A process and impact evaluation was published in August 2018 and covered program years 2016 – 2017. Key findings included:

- Overall realization rate of 98 percent for the combined legacy, expansion and refill waves.
- Savings increased in the expansion and refill waves, but slightly decreased for the legacy wave.
- Longer program tenure is correlated with a shorter time spent reading the reports.
- The program was not cost effective from the UCT and TRC perspective at 0.92.

The results of the evaluation can be viewed at http://www.pacificorp.com/es/dsm/utah.html.

Low Income Weatherization

The *Low Income Weatherization* program provides energy efficiency services to income-eligible households through a partnership with the Utah Department of Workforce Services, Housing and Community Development Division ("HCD"). Services are provided at no cost to the program participants.

In 2018, the program achieved savings at site of 204,234 kWh and served 245 homes. The measures installed through the *Low Income Weatherization* program are limited to those that reduce electricity use in participant's homes. Since the majority of homes served are not electrically heated and do not have electric water heaters, the Company funds mostly lighting and refrigerator replacement costs.

Cost effectiveness results for 2018 are provided in Table 23.

Table 23
Cost Effectiveness for Low Income Weatherization

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	2.86	$97,020
TRC	2.60	$83,454
UCT	2.60	$83,454
PCT	N/A	N/A
RIM	0.43	($182,225)

Total savings, measure type and the corresponding numbers of homes that installed the measure type are provided in Table 24.

Table 24
Total Savings, Homes Served and Measure Counts

Total kWh Savings @ Site	204,234
Participation – Total number of Homes Served	245
Measure Type Installed in Each Home	**#**
Furnace Fans	87
Duct Sealing/Insulation	1
Refrigerator Testing on Models not Replaced	106
Refrigerator Replacements	47
LED Bulbs (total installed)	3,516

Program Management

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

Program Administration

The Company currently has a contract in place with HCD to provide services through the *Low Income Weatherization* program. The state agency receives federal funds and subcontracts with seven non-profit agencies that install energy efficiency measures in the homes of income eligible households throughout the Company's service area. Company funding of 50 percent of the cost of approved measures is leveraged by HCD with the federal funding they receive, allowing more homes to be served each year.

By contract with the Company, HCD and their subcontracting local agencies are responsible for the following:

- Income Verification – The local agencies determine if participants are income eligible based on HCD guidelines. Household's interested in obtaining weatherization services apply through the agencies. The current income guidelines can be viewed at https://www.energy.gov/sites/prod/files/2018/03/f49/WPN-18-3.pdf.
- Energy Audit – Agencies use a United States Department of Energy approved audit tool to determine the cost effective measures to install in the participant's homes (audit results must indicate a savings to investment ratio of 1.0 or greater).
- Installation of Measures – Agencies install the energy efficiency measures.
- Post Inspections – Agencies inspect 100 percent of completed homes. HCD also inspects a random sample of homes. See Appendix 3 for verification summary.
- Billing Notification – HCD is required to submit a billing to Company within 60 days after job completion. They include a form indicating the measures installed and associated cost on each completed home along with their invoice.

Program Changes

No programmatic changes occurred in 2018. Program specifics were discussed during a DSM Steering Committee meeting in December 2018.

Evaluation

There were no evaluation actives for the *Low Income Weatherization* program in 2018.

NON-RESIDENTIAL ENERGY EFFICIENCY

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

The program was cost effective from every test perspective except the RIM. Cost effectiveness results for 2018 is provided in Table 25 and is show with and without sector-level portfolio costs.

Table 25
Cost Effectiveness for Non-Residential Energy Efficiency

Benefit/Cost Test	Includes Evaluation Costs		Excludes Evaluation Costs	
	Benefit/Cost Ratio	Net Benefits	Benefit/Cost Ratio	Net Benefits
PTRC	1.25	$12,497,602	1.26	$12,923,723
TRC	1.14	$6,798,007	1.15	$7,224,127
UCT	1.88	$26,752,397	1.91	$27,178,517
PCT	3.10	$99,181,381	3.10	$99,181,381
RIM	0.41	($81,569,327)	0.42	($80,317,684)

Total incentives, savings and completed projects are provided in Tables 26 - 28 by customer sector, measure category and delivery channel.

Table 26
Participation by Sector

Sector	Total kWh Savings @ Site	Cash Incentive	Bill Credits	Total # of Projects
Commercial	124,043,388	$13,817,275	$2,992	4,135
Industrial	40,440,287	$4,229,653	$314,756	337
Irrigation	2,204,892	$263,356		53
Grand Total	**166,688,567**	**$18,310,284**	**$317,748**	**4,525**

Table 27
Participation by Measure Category

Measure Categories	Total kWh (at site)	Cash Incentive	Bill Credits	Total # of Projects
Additional Measures	8,443,799	$ 1,210,740	$ 30,410	26
Building Shell	427,346	$ 147,810	-	14
Compressed Air	5,562,809	$ 705,414	-	24
Direct Install	10,317,597	$ 2,961,121		1,286
Electronics	9,322	$ 1,185	$ -	2
Energy Management	15,596,958	$ 311,939	$ -	51
Energy Manager Co-Funding		$ 825,523		16
Farm & Dairy	78,036	$ 9,598	$ -	2
Food Service Equipment	765,096	$ 54,330	$ -	16
HVAC	19,340,365	$ 2,858,709	$ 46,215	209
Irrigation	2,128,703	$ 256,933	$ -	50
Lighting	93,955,169	$ 7,786,326	$ -	2,716
Motors	6,143,377	$ 723,712	$ 44,662	93
Oil & Gas	9,707	$ 1,500	$ -	1
Refrigeration	3,910,283	$ 455,443	$ 196,462	19
Grand Total	**166,688,567**	**$ 18,310,284**	**$ 317,748**	**4,525**

Table 28
Participation by Delivery Channel

Delivery Channel	Total kWh (at site)	Cash Incentive	Bill Credits	Total # of Projects
Contracted	**121,115,058**	**$ 12,559,902**	**$ 2,992**	**4,373**
Additional Measures	416,085	$ 62,427	$ -	4
Building Shell	228,313	$ 70,575	$ -	14
Compressed Air	1,356,617	$ 179,335	$ -	15
Direct Install	10,317,597	$ 2,961,121		1,286
Electronics	9,322	$ 1,185	$ -	2
Energy Management	7,208,979	$ 144,180	$ -	23
Farm & Dairy	78,036	$ 9,598	$ -	2
Food Service Equipment	537,994	$ 35,850	$ -	16
HVAC	5,833,258	$ 1,059,695	$ 2,992	171
Irrigation	2,128,703	$ 256,933	$ -	50
Lighting	91,064,127	$ 7,556,031	$ -	2,713
Motors	1,511,095	$ 165,758	$ -	72
Oil & Gas	9,707	$ 1,500	$ -	1
Refrigeration	415,225	$ 55,715	$ -	4
In-house	**45,573,509**	**$ 5,750,382**	**$ 314,756**	**152**
Additional Measures	8,027,714	$ 1,148,313	$ 30,410	22
Building Shell	199,033	$ 77,235	$ -	-
Compressed Air	4,206,192	$ 526,079	$ -	9
Energy Management	8,387,979	$ 167,760	$ -	28
Energy Manager Co-Funding		$ 825,523		16
Food Service Equipment	227,102	$ 18,480	$ -	-
HVAC	13,507,107	$ 1,799,014	$ 43,223	38
Lighting	2,891,042	$ 230,295	$ -	3
Motors	4,632,282	$ 557,954	$ 44,662	21
Refrigeration	3,495,058	$ 399,728	$ 196,462	15
Grand Total	**166,688,567**	**$ 18,310,284**	**$ 317,748**	**4,525**

Services offered through the program include:

- Typical Upgrades: Provides streamlined incentives for lighting, HVAC, compressed air and other equipment upgrades that increase electrical energy efficiency and exceed code requirements.
- Small Business Direct: Provides enhanced incentives and direct installation of lighting retrofits to qualified small business customers
- Custom Analysis: Offers investment-grade energy analysis studies and recommendations for more complex projects.
- Energy Management: Provides expert facility and process analysis to help lower energy costs by optimizing customer's energy use.
- Energy Project Manager Co-funding: Available to customers who can commit to an energy savings of a minimum of 1,000,000 kWh/year.
- Midstream/LED instant incentive: Provides instant, point-of-purchase incentive for LED lamps and retrofit kits sold through qualifying participating distributors. Customers purchasing lamps from non-participating suppliers can apply for incentives after purchase.

Program Management

The program managers overseeing the business energy efficiency program activity in Utah is also responsible for the programs in Idaho and Wyoming. For each state the program managers are responsible for the management of the program administrators, cost effectiveness, identifying and contracting with the program administrators through a competitive bid process, program marketing, achieving and monitoring program performance and compliance, and recommending changes in the terms and conditions of the program.

Program Administration

The program is primarily administered through two delivery channels that are differentiated based upon customer needs: contracted DSM delivery and internal DSM delivery. For customers with high energy savings potential, the program offers Energy Project Manager Co-funding administered through its internal DSM delivery.

Contracted DSM Delivery

The contracted DSM delivery channel generally targets typical opportunities which serves small to medium sized business customers and, to a lesser extent, large business customers. Administration is provided through Company contracts with Nexant, Inc. ("Nexant"), Cascade Energy ("Cascade") and Willdan Energy Solutions ("Willdan"). Nexant and Cascade manage trade ally coordination, training and application processing services for commercial measures and industrial/agricultural measures respectively. Willdan manages the small business direct installation offer and administration of oil and gas sector projects.

Nexant and Cascade are responsible for the following:

- Trade ally engagement – includes identification, recruiting, training, supporting and assisting trade allies to increase sales and installation of energy efficient equipment at qualifying business customer facilities.
- Incentive processing and administrative support – includes handling incoming inquiries as assigned, processing incentive applications, developing and maintaining standardized analysis tools, providing program design services, and evaluation and regulatory support upon request.
- Custom analysis and project facilitation for small/medium customer projects.
- Managing savings acquisition to targets within budget.
- Continual improvement of program operations and customer satisfaction.
- Inspections – includes verifying on an on-going basis the installation of measures. A summary of the inspection process is in Appendix 3.

Willdan is responsible for the following:

- Small business engagement - includes identification, outreach, assessing/auditing, installing and inspecting installation of energy efficient equipment at qualifying business customer facilities.
- Administrative support – includes handling incoming inquiries as assigned, processing applications, developing and maintaining standardized analysis tools, providing program design services, and evaluation and regulatory support upon request.
- Managing savings acquisition to targets within budget.
- Continual improvement of program operations and customer satisfaction.
- Administrative support, and engineering analysis for oil and gas sector customer energy efficiency savings projects.

Internal DSM Delivery

The internal DSM delivery channel targets large energy users who generally have multiple opportunities for energy efficiency improvements, such as those that require complex custom analysis. These large projects are administered by internal Company project managers and allows for a single point of contact to assist customers with their various opportunities. In this delivery channel, project managers are responsible for the following:

- Single point of contact for large customers to assist with their energy efficiency projects.
- Provide customer outreach and education of energy efficiency opportunities.
- Facilitate custom energy efficiency analysis, quality assurance and verification of savings through a pre-contracted group of engineering firms. See Table 29.
- Manage engineering firms to ensure program compliance, quality of work and customer satisfaction.

- Manage *watt*smart Business projects through the entire project lifecycle.

Infrastructure

Contracted DSM Delivery – Trade Ally Networks

To help increase and improve the supplier and installation contractor infrastructure for energy-efficient equipment and services, the Company established and developed trade ally networks for lighting, HVAC, motors/VFDs, and irrigation. This work includes identifying and recruiting trade allies, providing program and technical training and providing sales support on an ongoing basis. The current list of the trade allies who have applied and been approved as participating vendors are posted on the Company website and is included as Appendix 5 to this report. In most cases, customers are not required to select a vendor from these lists to receive an incentive[19].

Since 2002, the Company's trade ally network has grown into a large, mature network of trade allies. However, the performance of trade allies varied with regard to industry experience, quality of workmanship, program knowledge and willingness to be a utility partner.

In 2017 all trade allies were asked to re-apply under new program guidelines put in place to encourage good market behavior. To improve trade ally network performance, a variety of actions were taken. Minimum participation requirements were raised, including mandatory industry trainings, proof of insurance, and proof of applicable licenses. Quarterly trade ally performance scorecards were introduced to provide timely feedback and encourage trade allies to reach "Premium" status. The following trade ally performance categories were established to align with program objectives:

- Level of participation (project count and savings)
- Customer satisfaction
- Program satisfaction
- Project submission quality
- Experience/training

The Company also created a tiered network with associated incentives for top performing trade allies to be designated as "premium", thus differentiating them from their peers. This offer was launched in late 2017 and through 2018 had four different trade allies achieve premium status.

Contracted DSM Delivery – Small Business Direct Installation Offer

The Small Business Direct offering targets small business customers with an expedited lighting incentive and targets specific geographical locations with marketing and outreach. In 2018, the offer resulted in:

[19] Customers receiving Small Business Lighting incentives are required to use an approved contractor selected from a competitive request for bid process.

- kWh installed directly at customer sites: 10,317,597 kWh
- Forty-eight cities and counties were served: West Jordan, West Haven, Washington Terrace, Tremonton, Thompson, Summit County, Springdale, South Weber, South Salt Lake, South Ogden, South Jordan, Sandy, Salt Lake City, Roy, Riverdale, Castle Dale, Cedar City, Cedar Hills, Clearfield, Cleveland, Coalville, Crescent Junction, Diamond Valley, Draper, Elmo, Emery, Farr West, Green River, Harrisville, Herriman, Highland, Hooper, Huntington, Ivins, La Verkin, Layton, Lindon, Marriott Slaterville, Moab, North Ogden, North Salt Lake, Ogden, Orangeville, Orem, Park City, Pleasant Grove, Pleasant View
- 1,286 installed projects
- Average customer energy savings first year: 8,023 kWh;
- Average customer copay: $767;
- Average customer incentive: $2,303.

Internal DSM Delivery

Given the diversity of the non-residential customers served by the Company, a pre-approved, pre-contracted group of engineering firms are used to perform facility specific energy efficiency analysis, quality assurance and verification services. Larger customers are managed by in-house project managers, while small and/or mid-market customers are outsourced directly to a qualified engineering firm for custom analysis. Each customer's project is directly managed by one of the Company's in-house project managers or a program manager. The in-house team works directly with the customer or through the appropriate Company regional business manager located in Utah.

Table 29 lists the engineering firms under contract with the Company to provide energy efficiency analysis for in-house project managers.

Table 29
Energy Engineering Firms

Engineering Firm	Main Office Location
Brendle Group	Fort Collins, CO
Cascade Energy Engineering	Cedar Hills, UT
EMP2, Inc	Richland, VA
Energy Resource Integration, LLC	Sausalito, CA
4Sight Energy	Boise, ID
ETC Group, Incorporated	Salt Lake City, UT
Evergreen Consulting Group	Beaverton, OR
kW Engineering, Inc.	Salt Lake City, UT
Nexant, Incorporated	Salt Lake City, UT
RM Energy Consulting	Pleasant Grove, UT
Rick Rumsey, LLC	Ammon, ID
Solarc Architecture & Engineering, Inc.	Eugene, OR

Energy Management

Energy management is a system of practices that creates reliable and persistent electric energy savings through improved operations, maintenance and management practices in customer facilities. Energy management can result in improved system operation, lower energy costs, reduced maintenance and repair costs and extended equipment life, and improved occupant comfort and productivity for tenants and employees. This program offering is being emphasized by the utility and pushed out into the market in the coming year.

Energy Project Manager Co-Funding

An Energy Project Manager is a co-funded staff resource at a customer facility to develop and manage energy projects. Customers can establish an annual energy-savings goal and receive Energy Project Manager Co-funding proportionate to that goal (subject to caps). To date, the Company has assisted dozens of customers in Utah who have participated in this offer due to their large size. Table 30 below table illustrates how EPMs may be incented.

Table 30
Energy Project Manager Incentive Structure

Payment Structure	Payment Amount	Milestone
1 - Initial payment (optional)	1/3 of funding amount* (not to exceed $25,000)	1. Customer selects an Energy Project Manager 2. Company & Customer work together on Comprehensive Plan for electric energy savings 3. Customer signs the Energy Project Manager Offer
2 - Final payment	$0.025 per kWh of energy savings achieved, to a maximum 100 percent of approved Energy Project Manager Salary and less the initial payment	1. At the end of performance period as defined in the Energy Project Manager Offer

To summarize the *watt*smart Business internal structure, Table 31 shows the delivery channel, its targeted customer segment, provider(s), and the type of services.

Table 31
*watt*smart Business Structure

Delivery Channel	Targeted Customer Segment	Providers	Services
Internal Delivery	Commercial & Industrial	Outsourced Engineers	Custom, typical, energy management, energy project manager co-funding
Contracted Delivery (Small Business Direct Install, Trade Ally)	Small Businesses	Willdan	Typical
	Oil and Gas	Willdan	Custom, typical
	Commercial & Industrial	Nexant/Trade Allies	Typical

Program Changes

Changes to the *watt*smart Business Program in 2018 were minimal. As LEDs have entered the mainstream lighting market, lighting incentives were adjusted as needed to encourage the behavior needed to push the market toward further adoption of new technologies. Energy code changes increased the minimum energy efficiency requirements for HVAC motors and program changes were made accordingly.

Evaluation

The *watt*smart Business program evaluation for program years 2016-2017 was published in December 2018. Key findings include:

- Overall realization rate of 100 percent and net-to-gross of 85 percent.
- Program was cost effective from the UCT perspective at 3.34.
- Overall, participants expressed satisfaction with the *watt*smart Business program. No offering received a rating less than 97% (i.e., very satisfied and somewhat satisfied combined).

The results of the evaluation can be viewed at http://www.pacificorp.com/es/dsm/utah.html.

COMMUNICATIONS, OUTREACH AND EDUCATION

*watts*mart is an overarching energy efficiency campaign with the overall goal to engage customers in reducing their energy usage through behavioral changes, and pointing them to the programs and information to assist them. "Rocky Mountain Power wants to help you save energy and money" is the key message, and the Company utilizes earned media, customer communications, education and outreach, advertising and program specific marketing to communicate the value of energy efficiency, provide information regarding low-cost, no-cost energy efficiency measures and to educate customers on the availability of programs, services and incentives.

A summary of 2018 (Year 9) "Utah Demand-side Management Outreach and Communications Campaign" is included in Appendix 7.

EVALUATIONS

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

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

Verification of the potential to achieve savings involves regular inspection and commissioning of equipment. The Company engages in programmatic verification activities, including inspections, quality assurance reviews, and tracking checks and balances as part of routine program implementation and may rely upon these practices in the verification of installation information for the purposes of savings verifications in advance of more formal impact evaluation results. A summary of the inspection process is included in Appendix 3.

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

Information on evaluation activities completed or in progress during 2018 is summarized in the chart below. A summary of the recommendations are provided in Appendix 6. The evaluation report is available at www.pacificorp.com/es/dsm/utah.html

Program	Years Evaluated	Evaluator	Progress Status	Date of Publication
Home Energy Reports	2016 - 2017	AEG	Completed	August 27, 2018
*watt*smart Business	2016 - 2017	Cadmus	Completed	December 14, 2018
Home Energy Savings	2017 - 2018	ADM	In Progress	Q4 2019 (Estimated)

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 1

Report Requirements

Report requirements were revised and approved pursuant to the Commission's Order issued February 16, 2017, in Docket No. 17-035-04, effective February 17, 2017.

Requirement No.	Description	Report Reference
1.	The Company will file the Annual Report between May 1 and June 1.	A one-time extension request to change the due date of the 2018 Report to June 18, 2018 was approved in Docket No. 19-035-22.
2.	The Company shall report Class 1 capacity reduction, estimated Class 2 megawatt savings during system peak, and Class 2 megawatt-hour savings achieved, all compared against the Integrated Resource Plan targets and forecast targets submitted in the applicable DSM November 1st Deferred Account and Forecast Report.[1]	Table 2, Page 7
3.	In the executive summary, include the lifetime megawatt-hour savings in addition to first year megawatt-hour savings.	Page 5
4.	The Company shall clearly state for each program and measure whether all reported savings are ex-post or ex-ante.	Pg. 5, footnote 2; pg. 8, footnote 13
5.	The Company shall accurately and clearly report all cost effectiveness test results at the portfolio and sector level in addition to the program and measure category levels.	Appendix 2
6.	The Company shall perform cost effectiveness tests using avoided costs from planned assumptions.	Appendix 2
7.	The Company shall provide cost effectiveness results with associated decrement values and program expenditures for the year's performance of the Company's Class 1 programs, subject to the confidentiality requirements of Utah Administrative Code R746-100-16.	Confidential Appendix 8
8.	For Class 1 programs, capacity reduction will be reported in megawatts.	Pg. 5, Tables 2, 3, and Peak Reduction section
9.	The Company shall provide Class 1 program data regarding loads available for curtailment, actual curtailment achieved, and program expenditures.	Peak Reduction section
10.	The Company shall include published evaluations that have not previously been provided in an Annual Report, and also include a schedule of current and upcoming evaluations.	Evaluation section
11.	The Company shall submit process and impact evaluation and annual reporting costs at the sector level for the cost effectiveness tests.	Appendix 2

[1] Pursuant to the Phase I Stipulation filed August 3, 2009, in Docket No. 09-035-T08, and approved in the order dated August 25, 2009, in the same, the Company must provide a forecast of expenditures for approved programs and their acquisition targets for the next calendar year by November 1st of each year.

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 2

Utah Cost Effectiveness

NAVIGANT

Memorandum

Portfolio

Navigant estimated the cost-effectiveness for the overall energy efficiency portfolio and component sectors, based on 2018 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall energy efficiency portfolio and the two sector components.

The portfolio passes the cost-effectiveness for all the tests except the RIM test. The memo consists of the following tables.

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Utility Inputs

Parameter	Value
Discount Rate	6.57%
Residential Line Loss	9.32%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Irrigation Line Loss	9.24%
Residential Energy Rate ($/kWh)[1]	$0.1069
Commercial Energy Rate ($/kWh)[1]	$0.0805
Industrial Energy Rate ($/kWh)[1]	$0.0580
Irrigation Energy Rate ($/kWh)[1]	$0.0719
Inflation Rate	2.20%

[1] Future rates determined using a 2.20% annual escalator.

Table 2 - Portfolio Level Costs 2018

Expense	Cost
Outreach and Communications	$1,412,862
Portfolio - EM&V Non-Residential	$426,120
Portfolio - EM&V Residential	$185,309
Portfolio - Systems Support	$161,261
Portfolio Potential Study	$71,461
Portfolio Energy Code Training	$63,208
Total Costs	**$2,320,221**

Table 3 - Benefit/Cost Ratios by Portfolio Type

Portfolio Type	PTRC	TRC	UCT	RIM	PCT
DSM Portfolio with Load Control Programs	2.37	2.15	2.39	0.98	3.28
Total Energy Efficiency Portfolio	1.10	1.00	1.73	0.38	3.05
C&I Programs	1.25	1.14	1.88	0.41	3.10
Residential Programs	0.88	0.80	1.59	0.33	2.94

Table 4 - 2018 DSM Portfolio with Load Control Programs Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0684	$119,528,610	$283,041,334	$163,512,724	2.37
Total Resource Cost Test (TRC) No Adder	$0.0684	$119,528,610	$257,310,304	$137,781,694	2.15
Utility Cost Test (UCT)	$0.0616	$107,753,201	$257,310,304	$149,557,103	2.39
Rate Impact Test (RIM)		$263,117,417	$259,019,096	-$4,098,321	0.98
Participant Cost Test (PCT)		$71,225,641	$233,964,221	$162,738,581	3.28
Lifecycle Revenue Impacts ($/kWh)					$0.0000004658
Discounted Participant Payback (years)					4.17

Table 5 - 2018 Total Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0438	$76,448,602	$84,346,658	$7,898,056	1.10
Total Resource Cost Test (TRC) No Adder	$0.0438	$76,448,602	$76,678,780	$230,178	1.00
Utility Cost Test (UCT)	$0.0254	$44,348,793	$76,678,780	$32,329,986	1.73
Rate Impact Test (RIM)		$199,713,009	$76,678,780	-$123,034,229	0.38
Participant Cost Test (PCT)		$69,516,848	$211,931,029	$142,414,181	3.05
Lifecycle Revenue Impacts ($/kWh)					$0.0003946164
Discounted Participant Payback (years)					2.42

Table 6 - 2018 C&I Energy Efficiency Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0376	$50,197,948	$62,695,551	$12,497,602	1.25
Total Resource Cost Test (TRC) No Adder	$0.0376	$50,197,948	$56,995,955	$6,798,007	1.14
Utility Cost Test (UCT)	$0.0226	$30,243,558	$56,995,955	$26,752,397	1.88
Rate Impact Test (RIM)		$138,565,283	$56,995,955	-$81,569,327	0.41
Participant Cost Test (PCT)		$47,265,729	$146,447,110	$99,181,381	3.10
Lifecycle Revenue Impacts ($/kWh)					$0.0000178063
Discounted Participant Payback (years)					2.81

Table 7 - 2018 Residential Energy Efficiency Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0598	$24,541,861	$21,651,107	-$2,890,755	0.88
Total Resource Cost Test (TRC) No Adder	$0.0598	$24,541,861	$19,682,824	-$4,859,037	0.80
Utility Cost Test (UCT)	$0.0302	$12,396,443	$19,682,824	$7,286,382	1.59
Rate Impact Test (RIM)		$59,438,934	$19,682,824	-$39,756,110	0.33
Participant Cost Test (PCT)		$22,251,119	$65,483,919	$43,232,800	2.94
Lifecycle Revenue Impacts ($/kWh)					$0.0000094244
Discounted Participant Payback (years)					1.90

NAVIGANT

Memorandum

Wattsmart Homes

Navigant estimated the cost-effectiveness results for the Utah Home Energy Savings Program, based on 2018 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program and for the 8 measure categories.

Cost-effectiveness was tested using the 2017 IRP decrement for all measure categories. The program passes the cost-effectiveness for the UCT and PCT tests. The memo consists of the following tables.

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Home Energy Savings Inputs

Parameter	Value
Discount Rate	6.57%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh) [1]	$0.1069
Inflation Rate	2.20%

[1] Future rates determined using a 2.20% annual escalator.

Table 2 – Home Energy Savings Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Dev.	Incentives	Total Utility Costs	Gross Customer Costs
Building Shell	$0	$1,184	$48,730	$222	$122,511	$172,648	$1,104,684
Energy Kits - DHW	$0	$2,653	$30,489	$498	$9,133	$42,773	$19,296
Energy Kits - Lighting	$0	$903	$10,375	$170	$10,446	$21,893	$10,446
HVAC	$0	$48,881	$2,292,224	$10,795	$1,894,144	$4,246,045	$2,591,635
Lighting	$0	$262,608	$625,207	$49,341	$3,490,343	$4,427,499	$8,508,117
Water Heating	$0	$46	$1,884	$9	$2,690	$4,628	$4,292
Whole Building	$0	$7,823	$180,110	$4,934	$1,200,762	$1,393,629	$7,053,094
New Homes	$0	$7,531	$218,011	$1,415	$589,750	$816,707	$2,959,556
Total	**$0**	**$331,628**	**$3,407,030**	**$67,384**	**$7,319,779**	**$11,125,821**	**$22,251,119**

Table 3 – Home Energy Savings – Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Building Shell	196,652	100%	196,652	100%	196,652	30
Energy Kits - DHW	440,562	100%	440,562	89%	392,100	11
Energy Kits - Lighting	149,915	100%	149,915	89%	133,425	12
HVAC	9,542,894	100%	9,542,894	90%	8,588,605	14
Lighting	43,615,579	74%	32,275,528	71%	22,915,625	12
Water Heating	7,604	100%	7,604	87%	6,615	13
Whole Building	4,361,710	100%	4,361,710	100%	4,361,710	15
New Homes	1,250,810	100%	1,250,810	98%	1,227,322	30
Total	**59,565,726**	**81%**	**48,225,676**	**78%**	**37,822,054**	**13**

Table 4 - Benefit/Cost Ratios by Measure Category

Measure Group	PTRC	TRC	UCT	RIM	PCT
Building Shell	0.20	0.18	1.20	0.38	0.45
Energy Kits - DHW	2.80	2.55	3.02	0.30	22.92
Energy Kits - Lighting	2.63	2.39	2.27	0.31	16.10
HVAC	1.19	1.08	1.20	0.35	5.08
Lighting	1.34	1.22	1.92	0.30	4.40
Water Heating	0.52	0.47	0.58	0.22	2.61
Whole Building	0.42	0.38	1.96	0.40	0.94
New Homes	0.45	0.41	1.58	0.41	1.00
Total	**0.85**	**0.77**	**1.62**	**0.33**	**2.76**

Table 5 – Home Energy Savings Program Level Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0621	$23,271,240	$19,815,887	-$3,455,353	0.85
Total Resource Cost Test (TRC) No Adder	$0.0621	$23,271,240	$18,014,443	-$5,256,797	0.77
Utility Cost Test (UCT)	$0.0297	$11,125,821	$18,014,443	$6,888,622	1.62
Rate Impact Test (RIM)		$54,055,296	$18,014,443	-$36,040,853	0.33
Participant Cost Test (PCT)		$22,251,119	$61,336,947	$39,085,827	2.76
Lifecycle Revenue Impacts ($/kWh)					$0.0000096664
Discounted Participant Payback (years)					3.84

Table 6 through Table 12 provides cost-effectiveness results for all 8 measures.

Table 6 - Home Energy Savings Building Shell Cost-Effectiveness Results (Load Shape – UT_Single_Family_Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.3550	$1,154,821	$227,170	-$927,651	0.20
Total Resource Cost Test (TRC) No Adder	$0.3550	$1,154,821	$206,518	-$948,303	0.18
Utility Cost Test (UCT)	$0.0531	$172,648	$206,518	$33,870	1.20
Rate Impact Test (RIM)		$547,391	$206,518	-$340,873	0.38
Participant Cost Test (PCT)		$1,104,684	$497,254	-$607,430	0.45
Lifecycle Revenue Impacts ($/kWh)					$0.0000004315
Discounted Participant Payback (years)					n/a

Table 7 - Home Energy Savings Energy Kits - DHW Cost-Effectiveness Results (Load Shape – Residential_ERWH_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0151	$50,813	$142,287	$91,473	2.80
Total Resource Cost Test (TRC) No Adder	$0.0151	$50,813	$129,352	$78,538	2.55
Utility Cost Test (UCT)	$0.0127	$42,773	$129,352	$86,579	3.02
Rate Impact Test (RIM)		$428,338	$129,352	-$298,986	0.30
Participant Cost Test (PCT)		$19,296	$442,352	$423,056	22.92
Lifecycle Revenue Impacts ($/kWh)					$0.0000009590
Discounted Participant Payback (years)					0.24

Table 8 - Home Energy Savings Energy Kits – Lighting Cost-Effectiveness Results (Load Shape – Residential_Lighting_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0169	$20,744	$54,576	$33,833	2.63
Total Resource Cost Test (TRC) No Adder	$0.0169	$20,744	$49,615	$28,871	2.39
Utility Cost Test (UCT)	$0.0179	$21,893	$49,615	$27,722	2.27
Rate Impact Test (RIM)		$162,291	$49,615	-$112,676	0.31
Participant Cost Test (PCT)		$10,446	$168,196	$157,750	16.10
Lifecycle Revenue Impacts ($/kWh)					$0.0000003342
Discounted Participant Payback (years)					n/a

Table 9 - Home Energy Savings HVAC Cost-Effectiveness Results (Load Shape – UT_Single_Family_Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0529	$4,684,372	$5,587,595	$903,224	1.19
Total Resource Cost Test (TRC) No Adder	$0.0529	$4,684,372	$5,079,632	$395,260	1.08
Utility Cost Test (UCT)	$0.0480	$4,246,045	$5,079,632	$833,587	1.20
Rate Impact Test (RIM)		$14,395,699	$5,079,632	-$9,316,067	0.35
Participant Cost Test (PCT)		$2,591,635	$13,171,538	$10,579,903	5.08
Lifecycle Revenue Impacts ($/kWh)					$0.0000240419
Discounted Participant Payback (years)					0.74

Table 10 - Home Energy Savings Lighting Cost-Effectiveness Results (Load Shape – Residential_Lighting_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0331	$6,977,919	$9,373,494	$2,395,575	1.34
Total Resource Cost Test (TRC) No Adder	$0.0331	$6,977,919	$8,521,358	$1,543,439	1.22
Utility Cost Test (UCT)	$0.0210	$4,427,499	$8,521,358	$4,093,859	1.92
Rate Impact Test (RIM)		$28,540,770	$8,521,358	-$20,019,412	0.30
Participant Cost Test (PCT)		$8,508,117	$37,452,696	$28,944,579	4.40
Lifecycle Revenue Impacts ($/kWh)					$0.0000593836
Discounted Participant Payback (years)					2.05

Table 11 - Home Energy Savings Water Heating Cost-Effectiveness Results (Load Shape – Residential_ERWH_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0879	$5,673	$2,963	-$2,710	0.52
Total Resource Cost Test (TRC) No Adder	$0.0879	$5,673	$2,694	-$2,979	0.47
Utility Cost Test (UCT)	$0.0717	$4,628	$2,694	-$1,935	0.58
Rate Impact Test (RIM)		$12,027	$2,694	-$9,333	0.22
Participant Cost Test (PCT)		$4,292	$11,194	$6,902	2.61
Lifecycle Revenue Impacts ($/kWh)					$0.0000000258
Discounted Participant Payback (years)					2.28

Table 12 - Home Energy Savings Whole Building Cost-Effectiveness Results (Load Shape – UT_Single_Family_Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.1533	$7,245,961	$3,010,018	-$4,235,943	0.42
Total Resource Cost Test (TRC) No Adder	$0.1533	$7,245,961	$2,736,380	-$4,509,581	0.38
Utility Cost Test (UCT)	$0.0295	$1,393,629	$2,736,380	$1,342,751	1.96
Rate Impact Test (RIM)		$6,813,276	$2,736,380	-$4,076,896	0.40
Participant Cost Test (PCT)		$7,053,094	$6,620,408	-$432,685	0.94
Lifecycle Revenue Impacts ($/kWh)					$0.0000098798
Discounted Participant Payback (years)					16.74

Table 13 - Home Energy Savings New Homes Cost-Effectiveness Results (Load Shape – UT_Single_Family_Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.1542	$3,130,938	$1,417,784	-$1,713,154	0.45
Total Resource Cost Test (TRC) No Adder	$0.1542	$3,130,938	$1,288,895	-$1,842,043	0.41
Utility Cost Test (UCT)	$0.0402	$816,707	$1,288,895	$472,188	1.58
Rate Impact Test (RIM)		$3,155,506	$1,288,895	-$1,866,611	0.41
Participant Cost Test (PCT)		$2,959,556	$2,973,308	$13,752	1.00
Lifecycle Revenue Impacts ($/kWh)					$0.0000023629
Discounted Participant Payback (years)					26.80

NAVIGANT

Memorandum

Home Energy Reports

Navigant estimated the cost-effectiveness results for the Utah Home Energy Reporting Program, based on 2018 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program.

Cost-effectiveness was tested using the 2017 IRP decrement. The program passes the cost-effectiveness for the PTRC, TRC, and UCT tests.

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Home Energy Reporting Inputs

Parameter	Value
Discount Rate	6.57%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh) [1]	$0.1069
Inflation Rate	2.20%

[1] Future rates determined using a 2.20% annual escalator.

Table 2 – Home Energy Reporting Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Development	Incentives	Total Utility Costs	Gross Customer Costs
Home Energy Reports	$0	$43,669	$715,627	$273,805	$0	$1,033,101	$0
Total	**$0**	**$43,669**	**$715,627**	**$273,805**	**$0**	**$1,033,101**	**$0**

Table 3 – Home Energy Reporting Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Home Energy Reports	35,934,000	98%	35,215,320	100%	35,215,320	1
Total	**35,934,000**	**98%**	**35,215,320**	**100%**	**35,215,320**	**1**

Table 4 - Home Energy Reporting Program Level Cost-Effectiveness Results (Load Shape – UT_Single_Family_Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0306	$1,033,101	$1,685,987	$652,886	1.63
Total Resource Cost Test (TRC) No Adder	$0.0306	$1,033,101	$1,532,715	$499,615	1.48
Utility Cost Test (UCT)	$0.0306	$1,033,101	$1,532,715	$499,615	1.48
Rate Impact Test (RIM)		$4,880,438	$1,532,715	-$3,347,722	0.31
Participant Cost Test (PCT)		$0	$3,847,337	$3,847,337	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000642003
Discounted Participant Payback (years)					n/a

NAVIGANT

Memorandum

Home Energy Reports – no start up fees

Navigant estimated the cost-effectiveness results for the Utah Home Energy Reporting Program, based on 2018 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program.

Cost-effectiveness was tested using the 2017 IRP decrement. The program passes the cost-effectiveness for the PTRC, TRC, and UCT tests.

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Home Energy Reporting Inputs

Parameter	Value
Discount Rate	6.57%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh) [1]	$0.1069
Inflation Rate	2.20%

[1] Future rates determined using a 2.20% annual escalator.

Table 2 – Home Energy Reporting Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Development	Incentives	Total Utility Costs	Gross Customer Costs
Home Energy Reports	$0	$43,669	$715,627	$3,805	$0	$763,101	$0
Total	**$0**	**$43,669**	**$715,627**	**$3,805**	**$0**	**$763,101**	**$0**

Table 3 – Home Energy Reporting Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Home Energy Reports	35,934,000	98%	35,215,320	100%	35,215,320	1
Total	**35,934,000**	**98%**	**35,215,320**	**100%**	**35,215,320**	**1**

Table 4 - Home Energy Reporting Program Level Cost-Effectiveness Results (Load Shape – UT_Single_Family_Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0226	$763,101	$1,685,987	$922,886	2.21
Total Resource Cost Test (TRC) No Adder	$0.0226	$763,101	$1,532,715	$769,615	2.01
Utility Cost Test (UCT)	$0.0226	$763,101	$1,532,715	$769,615	2.01
Rate Impact Test (RIM)		$4,610,438	$1,532,715	-$3,077,722	0.33
Participant Cost Test (PCT)		$0	$3,847,337	$3,847,337	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000590225
Discounted Participant Payback (years)					n/a

NAVIGANT

Memorandum

Low Income Weatherization

Navigant estimated the cost-effectiveness results for the Utah Low Income Weatherization Program, based on 2018 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program.

Cost-effectiveness was tested using the 2017 IRP decrement. The program passes the PTRC, TRC and UCT cost-effectiveness tests.

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Low Income Weatherization Inputs

Parameter	Value
Discount Rate	6.57%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh)[1]	$0.1069
Inflation Rate	2.20%

[1] Future rates determined using a 2.20% annual escalator.

Table 2 - Low Income Weatherization Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Development	Incentives	Total Utility Costs	Gross Customer Costs
Low Income Weatherization	$0	$13,340	$3,263	$1,653	$33,956	$52,212	$0
Total	**$0**	**$13,340**	**$3,263**	**$1,653**	**$33,956**	**$52,212**	**$0**

Table 3 - Low Income Weatherization Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Low Income Weatherization	204,235	100%	204,235	100%	204,235	16
Total	**204,235**	**100%**	**204,235**	**100%**	**204,235**	**16**

Table 4 - Low Income Weatherization Program Level Cost-Effectiveness (Load Shape – UT_Single_Family_Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0225	$52,212	$149,233	$97,020	2.86
Total Resource Cost Test (TRC) No Adder	$0.0225	$52,212	$135,666	$83,454	2.60
Utility Cost Test (UCT)	$0.0225	$52,212	$135,666	$83,454	2.60
Rate Impact Test (RIM)		$317,891	$135,666	-$182,225	0.43
Participant Cost Test (PCT)		$0	$299,636	$299,636	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000004162
Discounted Participant Payback (years)					n/a

NAVIGANT

Memorandum

Wattsmart Business

Navigant estimated the cost-effectiveness results for the Utah Wattsmart Business Program, based on 2018 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program and for the 15 measure categories.

Cost-effectiveness was tested using the 2017 IRP decrement for all measure categories. The program passes PTRC, TRC, UCT and PCT cost-effectiveness tests. The memo consists of the following tables.

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Utility Inputs

Parameter	Value
Discount Rate	6.57%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Irrigation Line Loss	9.24%
Commercial Energy Rate ($/kWh)[1]	$0.0805
Industrial Energy Rate ($/kWh)[1]	$0.0580
Irrigation Energy Rate ($/kWh)[1]	$0.0719
Inflation Rate	2.20%

[1] Future rates determined using a 2.20% annual escalator.

Table 2 – Annual Wattsmart Business Program Costs by Measure Category

Measure Category	Engineering Costs and Inspection	Utility Admin	Program Delivery	Program Dev.	Incentives	Bill Credits	Total Utility Costs	Gross Customer Costs
Additional Measures	$265,934	$51,488	$56,587	$20,516	$1,210,740	$30,410	$1,635,676	$3,169,088
Building Shell	$10,304	$2,606	$16,300	$1,038	$147,810	$0	$178,059	$567,174
Compressed Air	$141,623	$33,921	$75,121	$13,516	$705,414	$0	$969,595	$1,624,384
Direct Install	$0	$7,573	$918,880	$25,069	$2,961,121	$0	$3,912,644	$987,039
Electronics	$0	$57	$569	$23	$1,185	$0	$1,834	$2,778
Energy Management	$698,740	$95,107	$623,386	$37,897	$311,939	$0	$1,767,068	$443,332
Farm & Dairy	$2,475	$476	$15,048	$190	$9,598	$0	$27,787	$19,911
Food Ser. Equipment	$11,757	$4,665	$32,839	$1,859	$54,330	$0	$105,450	$129,144
HVAC	$646,347	$117,933	$391,416	$46,993	$2,858,709	$46,215	$4,107,611	$10,348,239
Irrigation	$0	$12,980	$408,249	$5,172	$256,933	$0	$683,334	$531,051
Lighting	$478,656	$581,918	$4,553,010	$228,289	$7,786,326	$0	$13,628,199	$26,322,509
Motors	$158,419	$37,461	$118,031	$14,927	$723,712	$44,662	$1,097,212	$1,936,658
Oil & Gas	$0	$59	$814	$24	$1,500	$0	$2,397	$3,305
Refrigeration	$143,209	$23,844	$46,589	$9,501	$455,443	$196,462	$875,048	$1,181,118
Energy Mgr. Co-Funding	$0	$0	$0	$0	$825,523	$0	$825,523	$0
Total	**$2,557,465**	**$970,088**	**$7,256,838**	**$405,015**	**$18,310,284**	**$317,748**	**$29,817,438**	**$47,265,729**

Table 3 – Annual Wattsmart Business Program Savings by Measure Category

Measure Category	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Additional Measures	8,443,799	87%	7,346,105	76%	5,583,040	15
Building Shell	427,346	87%	371,791	76%	282,561	17
Compressed Air	5,562,809	100%	5,562,809	86%	4,784,016	15
Direct Install	10,317,597	100%	10,317,597	91%	9,389,013	12
Electronics	9,322	87%	8,110	76%	6,164	4
Energy Management	15,596,958	100%	15,596,958	89%	13,881,293	3
Farm & Dairy	78,036	90%	70,232	79%	55,484	15
Food Service Equipment	765,096	87%	665,634	76%	505,881	11
HVAC	19,340,365	100%	19,340,365	57%	11,024,008	14
Irrigation	2,128,703	90%	1,915,833	79%	1,513,508	13
Lighting	93,955,169	100%	93,955,169	91%	85,499,203	14
Motors	6,143,377	91%	5,590,473	90%	5,031,426	15
Oil & Gas	9,707	87%	8,445	76%	6,418	15
Refrigeration	3,910,283	100%	3,910,283	51%	1,994,244	14
Energy Mgr. Co-Funding	-	-	-	-	-	-
Total	**166,688,567**	**99%**	**164,659,804**	**85%**	**139,556,259**	**13**

Table 4 - Benefit/Cost Ratios by Measure Category

Measure Category	PTRC	TRC	UCT	RIM	PCT
Additional Measures	1.04	0.94	1.63	0.47	2.06
Building Shell	0.41	0.37	0.96	0.37	0.92
Compressed Air	1.52	1.38	2.37	0.50	3.02
Direct Install	2.05	1.87	0.88	0.31	11.13
Electronics	0.28	0.25	0.38	0.19	1.33
Energy Management	0.68	0.62	0.65	0.26	7.62
Farm & Dairy	0.87	0.79	0.97	0.35	3.67
Food Service Equipment	1.22	1.11	1.58	0.35	4.24
HVAC	0.78	0.71	1.24	0.38	1.88
Irrigation	0.86	0.78	0.97	0.36	3.20
Lighting	1.40	1.28	2.79	0.43	3.39
Motors	1.25	1.14	2.20	0.50	2.49
Oil & Gas	0.99	0.90	1.27	0.45	2.18
Refrigeration	0.95	0.87	1.01	0.36	2.97
Energy Manager Co-Funding	n/a	n/a	n/a	n/a	n/a
Total	**1.26**	**1.15**	**1.91**	**0.42**	**3.10**

Table 5 – Wattsmart Business Program Level Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0373	$49,771,828	$62,695,551	$12,923,723	1.26
Total Resource Cost Test (TRC) No Adder	$0.0373	$49,771,828	$56,995,955	$7,224,127	1.15
Utility Cost Test (UCT)	$0.0223	$29,817,438	$56,995,955	$27,178,517	1.91
Rate Impact Test (RIM)		$137,313,639	$56,995,955	-$80,317,684	0.42
Participant Cost Test (PCT)		$47,265,729	$146,447,110	$99,181,381	3.10
Lifecycle Revenue Impacts ($/kWh)					$0.0000175331
Discounted Participant Payback (years)					2.81

Table 6 through Table 20 provide cost-effectiveness results for all 15 measures.

Table 6 - Wattsmart Business Additional Measures Cost-Effectiveness Results (Load Shape – UT_Miscellaneous_Mfg_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0468	$2,833,442	$2,938,918	$105,476	1.04
Total Resource Cost Test (TRC) No Adder	$0.0468	$2,833,442	$2,671,744	-$161,699	0.94
Utility Cost Test (UCT)	$0.0270	$1,635,676	$2,671,744	$1,036,068	1.63
Rate Impact Test (RIM)		$5,681,496	$2,671,744	-$3,009,752	0.47
Participant Cost Test (PCT)		$3,169,088	$6,534,187	$3,365,099	2.06
Lifecycle Revenue Impacts ($/kWh)					$0.0000077672
Discounted Participant Payback (years)					6.12

Table 7 - Wattsmart Business Building Shell Cost-Effectiveness Results (Shape – UT_Miscellaneous_Space_Cool)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.1373	$461,301	$187,362	-$273,939	0.41
Total Resource Cost Test (TRC) No Adder	$0.1373	$461,301	$170,329	-$290,971	0.37
Utility Cost Test (UCT)	$0.0530	$178,059	$170,329	-$7,729	0.96
Rate Impact Test (RIM)		$461,783	$170,329	-$291,454	0.37
Participant Cost Test (PCT)		$567,174	$521,132	-$46,042	0.92
Lifecycle Revenue Impacts ($/kWh)					$0.0000006657
Discounted Participant Payback (years)					26.76

Table 8 - Wattsmart Business Compressed Air Cost-Effectiveness Results (Load Shape – UT_Miscellaneous_Mfg_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0320	$1,661,151	$2,526,231	$865,080	1.52
Total Resource Cost Test (TRC) No Adder	$0.0320	$1,661,151	$2,296,574	$635,423	1.38
Utility Cost Test (UCT)	$0.0187	$969,595	$2,296,574	$1,326,979	2.37
Rate Impact Test (RIM)		$4,582,426	$2,296,574	-$2,285,852	0.50
Participant Cost Test (PCT)		$1,624,384	$4,906,381	$3,281,996	3.02
Lifecycle Revenue Impacts ($/kWh)					$0.0000058991
Discounted Participant Payback (years)					3.02

Table 9 - Wattsmart Business Direct Install Cost-Effectiveness Results (Load Shape – UT_Miscellaneous_Lighting)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0214	$1,849,728	$3,794,817	$1,945,089	2.05
Total Resource Cost Test (TRC) No Adder	$0.0214	$1,849,728	$3,449,834	$1,600,106	1.87
Utility Cost Test (UCT)	$0.0454	$3,912,644	$3,449,834	-$462,810	0.88
Rate Impact Test (RIM)		$11,213,187	$3,449,834	-$7,763,353	0.31
Participant Cost Test (PCT)		$987,039	$10,983,696	$9,996,657	11.13
Lifecycle Revenue Impacts ($/kWh)					$0.0000249000
Discounted Participant Payback (years)					n/a

Table 10 - Wattsmart Business Electronics Cost-Effectiveness Results (Load Shape – UT_Miscellaneous_Plug_Load)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.1244	$2,760	$767	-$1,993	0.28
Total Resource Cost Test (TRC) No Adder	$0.1244	$2,760	$697	-$2,063	0.25
Utility Cost Test (UCT)	$0.0827	$1,834	$697	-$1,137	0.38
Rate Impact Test (RIM)		$3,740	$697	-$3,044	0.19
Participant Cost Test (PCT)		$2,778	$3,694	$917	1.33
Lifecycle Revenue Impacts ($/kWh)					$0.0000000290
Discounted Participant Payback (years)					3.30

Table 11 - Wattsmart Business Energy Management Cost-Effectiveness Results (Load Shape – UT_Miscellaneous_Mfg_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0484	$1,849,695	$1,265,871	-$583,824	0.68
Total Resource Cost Test (TRC) No Adder	$0.0484	$1,849,695	$1,150,791	-$698,903	0.62
Utility Cost Test (UCT)	$0.0462	$1,767,068	$1,150,791	-$616,277	0.65
Rate Impact Test (RIM)		$4,497,214	$1,150,791	-$3,346,422	0.26
Participant Cost Test (PCT)		$443,332	$3,379,519	$2,936,186	7.62
Lifecycle Revenue Impacts ($/kWh)					$0.0000425852
Discounted Participant Payback (years)					0.14

Table 12 - Wattsmart Business Farm & Dairy Cost-Effectiveness Results (Load Shape – UT_Warehouse_Refrigeration)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0564	$33,919	$29,653	-$4,265	0.87
Total Resource Cost Test (TRC) No Adder	$0.0564	$33,919	$26,958	-$6,961	0.79
Utility Cost Test (UCT)	$0.0462	$27,787	$26,958	-$829	0.97
Rate Impact Test (RIM)		$77,922	$26,958	-$50,964	0.35
Participant Cost Test (PCT)		$19,911	$73,060	$53,149	3.67
Lifecycle Revenue Impacts ($/kWh)					$0.0000001315
Discounted Participant Payback (years)					2.41

Table 13 - Wattsmart Business Food Service Equipment Cost-Effectiveness Results (Load Shape – UT_Grocery_Refrigeration)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0344	$149,270	$182,796	$33,526	1.22
Total Resource Cost Test (TRC) No Adder	$0.0344	$149,270	$166,178	$16,908	1.11
Utility Cost Test (UCT)	$0.0243	$105,450	$166,178	$60,727	1.58
Rate Impact Test (RIM)		$480,051	$166,178	-$313,873	0.35
Participant Cost Test (PCT)		$129,144	$547,225	$418,081	4.24
Lifecycle Revenue Impacts ($/kWh)					$0.0000010962
Discounted Participant Payback (years)					1.83

Table 14 - Wattsmart Business HVAC Cost-Effectiveness Results (Load Shape – UT_Miscellaneous_HVAC_Aux)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0624	$7,147,399	$5,598,596	-$1,548,803	0.78
Total Resource Cost Test (TRC) No Adder	$0.0624	$7,147,399	$5,089,633	-$2,057,766	0.71
Utility Cost Test (UCT)	$0.0359	$4,107,611	$5,089,633	$982,021	1.24
Rate Impact Test (RIM)		$13,561,396	$5,089,633	-$8,471,763	0.38
Participant Cost Test (PCT)		$10,348,239	$19,444,295	$9,096,057	1.88
Lifecycle Revenue Impacts ($/kWh)					$0.0000233809
Discounted Participant Payback (years)					10.42

Table 15 - Wattsmart Business Irrigation Cost-Effectiveness Results (Load Shape – UT_Irrigation_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0573	$845,932	$727,030	-$118,902	0.86
Total Resource Cost Test (TRC) No Adder	$0.0573	$845,932	$660,936	-$184,995	0.78
Utility Cost Test (UCT)	$0.0463	$683,334	$660,936	-$22,398	0.97
Rate Impact Test (RIM)		$1,821,800	$660,936	-$1,160,864	0.36
Participant Cost Test (PCT)		$531,051	$1,698,028	$1,166,978	3.20
Lifecycle Revenue Impacts ($/kWh)					$0.0000034435
Discounted Participant Payback (years)					2.55

Table 16 - Wattsmart Business Lighting Cost-Effectiveness Results (Load Shape – UT_Miscellaneous_Lighting)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0336	$29,795,357	$41,816,129	$12,020,772	1.40
Total Resource Cost Test (TRC) No Adder	$0.0336	$29,795,357	$38,014,663	$8,219,306	1.28
Utility Cost Test (UCT)	$0.0154	$13,628,199	$38,014,663	$24,386,463	2.79
Rate Impact Test (RIM)		$87,702,747	$38,014,663	-$49,688,084	0.43
Participant Cost Test (PCT)		$26,322,509	$89,186,928	$62,864,419	3.39
Lifecycle Revenue Impacts ($/kWh)					$0.0001371321
Discounted Participant Payback (years)					2.83

Table 17 - Wattsmart Business Motors Cost-Effectiveness Results (Load Shape – UT_Miscellaneous_Mfg_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0388	$2,116,492	$2,651,208	$534,716	1.25
Total Resource Cost Test (TRC) No Adder	$0.0388	$2,116,492	$2,410,189	$293,697	1.14
Utility Cost Test (UCT)	$0.0201	$1,097,212	$2,410,189	$1,312,976	2.20
Rate Impact Test (RIM)		$4,791,311	$2,410,189	-$2,381,122	0.50
Participant Cost Test (PCT)		$1,936,658	$4,828,266	$2,891,609	2.49
Lifecycle Revenue Impacts ($/kWh)					$0.0000061449
Discounted Participant Payback (years)					3.98

Table 18 - Wattsmart Business Oil & Gas Cost-Effectiveness Results
(Load Shape – UT_Miscellaneous_Mfg_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0490	$3,409	$3,361	-$48	0.99
Total Resource Cost Test (TRC) No Adder	$0.0490	$3,409	$3,055	-$353	0.90
Utility Cost Test (UCT)	$0.0345	$2,397	$3,055	$659	1.27
Rate Impact Test (RIM)		$6,724	$3,055	-$3,668	0.45
Participant Cost Test (PCT)		$3,305	$7,193	$3,888	2.18
Lifecycle Revenue Impacts ($/kWh)					$0.0000000095
Discounted Participant Payback (years)					5.18

Table 19 - Wattsmart Business Refrigeration Cost-Effectiveness Results
(Load Shape – UT_Miscellaneous_Refrigeration)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0497	$1,021,975	$972,812	-$49,163	0.95
Total Resource Cost Test (TRC) No Adder	$0.0497	$1,021,975	$884,375	-$137,601	0.87
Utility Cost Test (UCT)	$0.0426	$875,048	$884,375	$9,326	1.01
Rate Impact Test (RIM)		$2,431,843	$884,375	-$1,547,468	0.36
Participant Cost Test (PCT)		$1,181,118	$3,507,982	$2,326,864	2.97
Lifecycle Revenue Impacts ($/kWh)					$0.0000042708
Discounted Participant Payback (years)					5.54

Table 20 - Wattsmart Business Energy Manager Co-Funding Cost-Effectiveness Results
(Load Shape – n/a)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	n/a	$0	$0	$0	n/a
Total Resource Cost Test (TRC) No Adder	n/a	$0	$0	$0	n/a
Utility Cost Test (UCT)	n/a	$825,523	$0	-$825,523	n/a
Rate Impact Test (RIM)		$0	$0	$0	n/a
Participant Cost Test (PCT)		$0	$825,523	$825,523	n/a
Lifecycle Revenue Impacts ($/kWh)					n/a
Discounted Participant Payback (years)					n/a

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 3

Utah Measure Installation Verifications

Utah Measure Installation Verification

Low Income Weatherization

All projects

- All measures are qualified through US Department of Energy approved audit tool or priority list.
- 100 percent inspection by agency inspector of all homes treated, reconciling work completed and quality prior to invoicing Company.
- State inspectors randomly inspect 5-10 percent of completed homes.

wattsmart Homes

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

- Ductless heat pumps
- Duct sealing
- Duct sealing and insulation
- Electrically commutated motor (ECM) retrofit on existing gas furnace
- Heat pumps
- Heat pump water heaters
- Insulation

Site inspections are not performed for some measures. However all post-purchase incented measures undergo a quality assurance review prior to the issuance of the customer/dealer incentive. The quality assurance includes verification of proof of purchase receipt review and eligible equipment review. Additionally, customer accounts and customer addresses are verified to ensure the Company does not double pay for the same measure or double count measure savings. The following measures do not receive a site inspection:

- Central air conditioners
- Gas furnace with ECM
- Electric water heaters
- Evaporative coolers
- Smart thermostats
- Light fixtures

Site inspections are not performed on measures that are upstream, manufacturer buy-down model. Promotion agreement contracts are signed with manufacturers and retailers to set incentive levels, final product prices, and limits to the total number of units that can be purchased per customer.

The Program Administrator verifies measures for product eligibility and correct pricing. Pricing is also verified by Program Administrator field visits to retail locations. These measures include:

- LED bulbs
- Evaporative coolers
- Smart thermostats

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

***watt*smart Business**

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

Lighting projects

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

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

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

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

Lighting and non-lighting

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

All Programs

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

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

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 4

wattsmart Homes Retailers
2018

Contents

Table 1: 2018 Participating Midstream/Upstream Retailers

Retailer	City	State	LEDs	Fixtures
Ace Hardware - Jones #10418	Castle Dale	UT	X	
Ace Hardware - Kamas #15309	Kamas	UT	X	X
Ace Hardware - Olympus Hills #16454	Salt Lake City	UT	X	X
Ace Hardware - Smith & Edwards #5664	Ogden	UT	X	X
Ace Hardware - Tremonton #14654	Tremonton	UT	X	X
Ace Hardware #11772	Salt Lake City	UT	X	X
Ace Hardware #14886	Highland	UT	X	X
Ace Hardware #9314	Pleasant Grove	UT	X	X
Ace Hardware Delta #4954	Delta	UT	X	X
Ace Hardware of South Ogden #16287	Ogden	UT	X	X
Batteries Plus #355	Washington	UT	X	
Batteries Plus #356	Layton	UT	X	
Batteries Plus #358	Salt Lake City	UT	X	
Batteries Plus #359	Sandy	UT	X	
Batteries Plus #724	Riverton	UT	X	
Batteries Plus #754	West Jordan	UT	X	
Batteries Plus #802	Riverdale	UT	X	
Batteries Plus #909	West Valley City	UT	X	
Best Buy #1146	West Jordan	UT	X	
Best Buy #1761	Park City	UT	X	
Best Buy #496	Riverdale	UT	X	
Best Buy #497	Sandy	UT	X	
Best Buy #527	Salt Lake City	UT	X	
Burtons Ace Hardware #16499	Salt Lake City	UT	X	X
Costco #1019	South Jordan	UT	X	X
Costco #113	Salt Lake City	UT	X	X
Costco #487	Sandy	UT	X	X
Costco #622	West Valley City	UT	X	X
Costco #764	Murray	UT	X	X
Costco #770	Ogden	UT	X	X
Home Depot #4401	Riverdale	UT	X	X
Home Depot #4402	Salt Lake City	UT	X	X
Home Depot #4403	Salt Lake City	UT	X	X
Home Depot #4406	West Valley City	UT	X	X
Home Depot #4409	Sandy	UT	X	X

Retailer	City	State	LEDs	Fixtures
Home Depot #4410	West Jordan	UT	X	X
Home Depot #4411	Ogden	UT	X	X
Home Depot #4413	Salt Lake City	UT	X	X
Home Depot #4415	Park City	UT	X	X
Home Depot #4418	Cedar City	UT	X	X
Home Depot #4419	Tooele	UT	X	X
Home Depot #4421	Sandy	UT	X	X
Home Depot #8566	Riverton	UT	X	X
Lowe's #1080	Riverdale	UT	X	
Lowe's #1133	West Valley City	UT	X	
Lowe's #15	Layton	UT	X	
Lowe's #1613	West Jordan	UT	X	
Lowe's #2275	Salt Lake City	UT	X	
Lowe's #2296	Riverton	UT	X	
Lowe's #2606	Sandy	UT	X	
Lowe's #2845	Clinton	UT	X	
Lowe's #2858	Ogden	UT	X	
Lowe's #342	Murray	UT	X	
P&D Ace Hardware #15224	Green River	UT	X	X
Ream's Foods #11	West Jordan	UT	X	
Ream's Foods #12	Salt Lake City	UT	X	
Ream's Foods #15	Sandy	UT	X	
Ream's Foods #2	Salt Lake City	UT	X	
Ream's Foods #6	Salt Lake City	UT	X	
Ream's Foods #8	Magna	UT	X	
Ream's Foods #9	Sandy	UT	X	
Ridley's #1151	Tremonton	UT	X	
Ridley's #15198	Orem	UT	X	
Ridley's #15670	Orem	UT	X	
Sam's Club #4718	South Jordan	UT	X	
Sam's Club #4730	West Jordan	UT	X	
Sam's Club #6682	Layton	UT	X	
Sam's Club #6683	Murray	UT	X	
Sam's Club #6684	Riverdale	UT	X	
Sam's Club #6686	Salt Lake City	UT	X	
Smith's #108	Herriman	UT	X	
Smith's #131	Ogden	UT	X	
Smith's #132	Draper	UT	X	

Retailer	City	State	LEDs	Fixtures
Smith's #137	West Valley City	UT	X	
Smith's #138	South Jordan	UT	X	
Smith's #139	West Jordan	UT	X	
Smith's #140	Sunset	UT	X	
Smith's #142	Syracuse	UT	X	
Smith's #144	Orem	UT	X	
Smith's #147	West Valley City	UT	X	
Smith's #153	Sandy	UT	X	
Smith's #158	West Jordan	UT	X	
Smith's #28	Salt Lake City	UT	X	
Smith's #30	Ogden	UT	X	
Smith's #42	Cedar City	UT	X	
Smith's #44	Salt Lake City	UT	X	
Smith's #47	Sandy	UT	X	
Smith's #65	Magna	UT	X	
Smith's #66	Salt Lake City	UT	X	
Smith's #69	Salt Lake City	UT	X	
Smith's #72	Park City	UT	X	
Smith's #73	Pleasant Grove	UT	X	
Smith's #77	Salt Lake City	UT	X	
Smith's #80	Salt Lake City	UT	X	
Smith's #81	Salt Lake City	UT	X	
Smith's Marketplace #274	West Jordan	UT	X	
Smith's Marketplace #475	Salt Lake City	UT	X	
Smith's Marketplace #495	West Jordan	UT	X	
Smith's Marketplace #94	Salt Lake City	UT	X	
Sutherlands Lumber #2810	Salt Lake City	UT	X	
Target #T0768	West Jordan	UT	X	
Target #T1751	Salt lake City	UT	X	
Target #T1752	Sandy	UT	X	
Target #T1755	Layton	UT	X	
Target #T2123	South Jordan	UT	X	
Target #T2150	West Jordan	UT	X	
Target #T2609	West Valley City	UT	X	
Target #T2641	Salt Lake City	UT	X	
Target of Riverdale	Riverdale	UT	X	
True Value Hardware - Losee Lumber	Delta	UT	X	
Walmart #1438	Cedar City	UT	X	X

Retailer	City	State	LEDs	Fixtures
Walmart #1440	Tooele	UT	X	X
Walmart #1686	Taylorsville	UT	X	X
Walmart #1699	Layton	UT	X	X
Walmart #1708	Riverdale	UT	X	X
Walmart #1827	Park City	UT	X	X
Walmart #2207	Midvale	UT	X	X
Walmart #2307	South Jordan	UT	X	X
Walmart #2921	Harrisville	UT	X	X
Walmart #3232	West Jordan	UT	X	X
Walmart #3568	West Valley City	UT	X	X
Walmart #3589	Salt Lake City	UT	X	X
Walmart #3620	Riverton	UT	X	X
Walmart #3789	Ogden	UT	X	X
Walmart #3848	Syracuse	UT	X	X
Walmart #4208	Salt Lake City	UT	X	X
Walmart #4689	Cedar Hills	UT	X	X
Walmart #4700	Pleasant Grove	UT	X	
Walmart #4706	Magna	UT	X	
Walmart #5109	West Valley City	UT	X	
Walmart #5110	Draper	UT	X	
Walmart #5205	Layton	UT	X	
Walmart #5206	South Ogden	UT	X	
Walmart #5233	West Valley City	UT	X	X
Walmart #5234	Clinton	UT	X	X
Walmart #5235	Sandy	UT	X	X
Walmart #5270	Lindon	UT	X	X
Wal-Mart #5350	Salt Lake City	UT	X	
Walmart #5763	South Jordan	UT	X	X
Walmart #7043	Riverton	UT	X	
Walmart #7168	Herriman	UT	X	

Table 2: 2018 Participating Downstream Retailers

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
123SecurityProducts.com		UT	x				
AAFES	Hill Air Force base	UT				x	x
Absolute Air	Mapleton	UT					x
Absolute Air Heating and Air Conditioning	Mapleton	UT	x				
Ace Hardware - Hurst #5738	Cedar City	UT	x				
Ace Hardware - Smith & Edwards #5664	Ogden	UT					x
Ace Hardware #11772	Salt Lake City	UT					x
Action Plumbing & Heating	Salt Lake City	UT					x
Action Plumbing, Heating, Air, & Electric	West Jordan	UT	x				
acwholesalers.com		UT	x				
ACX Service	Ogden	UT	x				
Advanced Heating and Air Conditioning	Logan	UT					x
After Hours Heating & Cooling	Holladay	UT	x				x
Air Express Heating and Air Conditioning, Inc.	Lehi	UT	x				
Air Now	Ogden	UT					x
Air Now Heating and Air Conditioning	Ogden	UT					x
Air Repair Air Conditioning and Heating	Salem	UT					x
Aireserv	Salt Lake City	UT					x
All Metro Tech	West Jordan	UT					x
Allred's Inc.	Midvale	UT	x				
Alpine Communications	Alpine	UT					x
Amazon	Salt Lake City	UT				x	x
Any Hour	Syracuse	UT	x				
Apollo Energy, LLC	Orem	UT	x				
Apple Station Park	Farmington	UT				x	
Argenta	Sandy	UT	x				
AT&T Fashion Place Mall	Murray	UT					x
Barnett A Home Depot Company	Salt Lake City	UT					x
BDO Outlet	Ogden	UT				x	
Bed Bath & Beyond #0783	Ogden	UT				x	

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
Bed Bath & Beyond #1140	American Folk	UT					x
Bed Bath & Beyond #1144	North Logan	UT	x				x
Bed Bath & Beyond #198	Midvale	UT	x				x
Bed Bath & Beyond #294	Salt Lake City	UT	x			x	
Bed Bath & Beyond #498	LAYTON	UT					x
Best Buy #1146	West Jordan	UT	x			x	x
Best Buy #1402	American Fork	UT	x			x	x
Best Buy #1761	Park City	UT		x	x	x	x
Best Buy #1887	Farmington	UT				x	x
Best Buy #496	Riverdale	UT	x			x	x
Best Buy #497	Sandy	UT	x			x	x
Best Buy #521	Murray	UT	x	x		x	x
Best Buy #527	Salt Lake City	UT	x		x	x	x
Best Buy #773	Orem	UT	x			x	x
Best Buy #891	Washington	UT				x	x
Best Buy BBY_521	Murray	UT					x
Best Buy Farmington	Farmington	UT				x	
BEST BUY ONLINE	PLEASANT GROVE	UT				x	x
Bestbuy	Riverdale	UT				x	x
Bills Comfort Systems Murray	Murray	UT					x
Black Diamond Experts	Salt Lake City	UT	x				
Bridgerland Heating & Air Conditioning	Farr West	UT	x				x
Brigham Heating & Cooling	Brigham City	UT					x
Bukoos	Salt Lake City	UT				x	
Chadsco Service LLC.	84070	UT					x
CleanAir of Utah	North Salt Lake	UT					x
Comfort Level LLC	Draper	UT					x
Comfort Solutions	Ogden	UT	x				
Comfort Specialists Heating & Cooling	Orem	UT	x				
Comfort Zone	Salt Lake City	UT					x
Cool Time Heating & Air Inc	Lindon	UT	x				
Copper Ridge Services	Sandy	UT	x				
cosstco	bountiful	UT					x

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
Costco #1019	South Jordan	UT	x			x	x
Costco #1118	Spanish Fork	UT	x				x
Costco #113	Salt Lake City	UT	x	x	x	x	x
Costco #484	Orem	UT	x			x	x
Costco #487	Sandy	UT	x			x	x
Costco #622	West Valley City	UT	x				x
Costco #672	St. George	UT		x			
Costco #733	Lehi	UT	x			x	x
Costco #735	West Bountiful	UT	x			x	x
Costco #764	Murray	UT	x			x	x
Costco #770	Ogden	UT	x			x	x
Costco West Bountiful #735	West Bountiful	UT					x
Costco West Valley	west valley city	UT				x	
Costco Wholesale	Sandy	UT	x	x		x	x
Costco.com		UT	x		x	x	x
Donn Chytraus	Sandy	UT					x
duplicate Best Buy #945	Logan	UT	x				
Eagar Heating & Cooling	Pleasant Grove	UT	x				
eBay	Draper	UT					x
Enlightened Electric	Herriman	UT					x
EPIC Heating and Air LLC	Taylorsville	UT	x				
ESCO	Salt Lake City	UT					x
ESCO Services	Salt Lake City	UT	x			x	x
Evelar, Inc	Lehi	UT	x				
Exclusive Air Systems, Inc.	Draper	UT	x				
Extraordin-Aire LLC	Plain City	UT				x	
Ferguson	Ogden	UT					x
Friendly Plumber Heating and Air	Salt Lake City	UT					x
GENUINE COMFORT HVAC	Centerville	UT				x	x
GoodGuysElectronics.com		UT	x				
Goodman - nationwide mechanical	salt lake city	UT					x
Goodman Distribution Inc #512	Salt Lake City	UT	x				
Goodman Distribution, Inc - Orem	American Fork	UT	x				

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
Greenhome Specialties	Layton	UT	x				
Greenify Energy Savers	Sandy	UT	x				
Heavenly Heating and Cooling	Magna	UT				x	
Hill Main Exchange Store	Hill AFB	UT	x				
HMI Heating and Air	Logan	UT					x
Home Depot #4401	Riverdale	UT	x	x	x	x	x
Home Depot #4402	Salt Lake City	UT	x			x	x
Home Depot #4403	Salt Lake City	UT	x			x	x
Home Depot #4406	West Valley City	UT	x			x	x
Home Depot #4407	Lindon	UT	x			x	x
Home Depot #4408	Centerville	UT	x			x	x
Home Depot #4409	Sandy	UT	x			x	x
Home Depot #4410	West Jordan	UT	x			x	x
Home Depot #4411	Ogden	UT	x	x		x	x
Home Depot #4412	Washington	UT					x
Home Depot #4413	Salt Lake City	UT	x	x		x	x
Home Depot #4414	Logan	UT	x			x	x
Home Depot #4415	Park City	UT	x		x		x
Home Depot #4416	Provo	UT	x			x	x
Home Depot #4417	American Fork	UT	x			x	x
Home Depot #4418	Cedar City	UT	x				x
Home Depot #4419	Tooele	UT	x				x
Home Depot #4420	St. George	UT	x			x	x
Home Depot #4421	Sandy	UT	x	x		x	x
Home Depot #4422	Richfield	UT	x			x	x
Home Depot #8566	Riverton	UT	x			x	x
Home Depot #8583	Layton	UT	x			x	x
Home Depot Ogden	Ogden	UT					x
HOME DEPOT.COM		UT					x
Home Selections by Fergusons	Salt Lake City	UT				x	
HOMEDEPOT	SALT LAKE CITY	UT				x	x
JOHNSTONE SUPPLY	SLC	UT					x
Johnstone Supply - SLC	Salt Lake City	UT	x				

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
Jones Heating & Air Conditioning	West Valley City	UT	x				
Just Right Air	Salt Lake City	UT				x	x
Khols	North Logan	UT				x	x
KJ Plumbing & Heating LLC	Delta	UT	x				
Kohls	Riverton	UT				x	x
Kohl's	American Fork	UT				x	
Koh'ls	Clinton	UT					x
Kohl's - West Jordan	West Jordan	UT	x				
Larsen HVAC	West Jordan	UT					x
Larsen's Ace Hardware #1044	Richfield	UT					x
Long's Air Service	American Fork	UT					x
LOWES - 0015	LAYTON	UT				x	x
LOWES - 0342	MURRAY	UT					x
Lowe's - 1133	West Valley City	UT					x
Lowes - 2606	Sandy	UT					x
Lowe's - 2662	West Bountiful	UT					x
Lowe's #1080	Riverdale	UT	x			x	x
Lowe's #1118	St. George	UT	x				
Lowe's #1133	West Valley City	UT	x			x	x
Lowe's #15	Layton	UT	x				x
Lowe's #1501	Logan	UT	x		x	x	x
Lowe's #1613	West Jordan	UT	x			x	x
Lowe's #178	Orem	UT	x				x
Lowe's #2275	Salt Lake City	UT	x			x	x
Lowe's #2293	Lehi	UT	x	x		x	x
Lowe's #2296	Riverton	UT	x			x	x
Lowe's #2606	Sandy	UT	x			x	x
Lowe's #2662	West Bountiful	UT	x			x	x
Lowe's #2834	Vernal	UT	x			x	x
Lowe's #2845	Clinton	UT	x			x	x
Lowe's #2858	Ogden	UT	x			x	x
Lowe's #342	Murray	UT	x			x	x
Lowe's Home Center	Lehi	UT					x

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
Lowe's Home Centers, LLC	Riverdale	UT				x	x
Lowes Home Improvement	Ogden	UT					x
Lowes of Ogden Utah	ogden	UT				x	
lowes online	Riverdale	UT					x
Lowes.com		UT	x	x	x	x	x
lowes.com - Picked up Riverton, UT #2296	Riverton	UT					x
LY Berditchev Co.		UT	x				
Main Street Heating & Cooling	Sandy	UT	x				x
Main Street Heating and Cooling	Sandy	UT					x
Max air comfort systems	Salt lake city	UT					x
Mountain West Distributors Inc	Salt Lake City	UT	x				x
Mr Good Guy	Cedar Hills	UT					x
Nayliner LLC	Kaysville	UT					x
Nest	Nest.com	UT				x	x
Nordstrom	Murray	UT				x	
Nordstrom.com		UT	x				
Office Depot	Midvale	UT					x
Ostmann Enterprises	Heber	UT	x				
Paradise HVAC	Taylorsville	UT	x				
Park City Heating & Air Conditioning	Holladay	UT					x
Patriot Store	Salt Lake City	UT					x
paypal.com		UT	x				
PCS HVAC	Ogden	UT	x				
Pipefitters Inc dba Genuine Comfort Heating & Air	Centerville	UT				x	x
Platinum Air	Santaquin	UT					x
Platinum Air Inc.	American Fork	UT	x				
Platt Electric	Salt Lake City	UT				x	x
PlumbersStock	Cedar City	UT					x
Pottery Barn	Salt Lake City	UT					x
Power IQ	saint george	UT					x
ProFlow	Salt Lake City	UT					x
QVC.com		UT	x				
R.C. Willey Home Furnishings	Syracuse	UT					x

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
RC Willey - Murray	Murray	UT					x
RC Willey - Orem	Orem	UT					x
RC Willey - Orem Mall	Orem	UT	x				
RC Willey - Riverdale	Riverdale	UT	x				x
RC Willey - Syracuse	Syracuse	UT	x				x
RC WIlley Appliances Online Order		UT	x				
RC Willey- Draper	Draper	UT				x	x
RC Willey Home Furnishings	Salt Lake City	UT	x			x	x
RCWilley.com		UT					x
RheaTech Refrigeration	West Jordan	UT					x
Royal Wholesale Electric	Ogden	UT	x				
RVJ Heating and Air Conditioning	Riverton	UT	x				
Salmon HVAC	Centerville	UT	x				
Sam?s Club	Layton	UT				x	
SAME DAY HEATING& AIR PLUMBING - ELECTRICAL	SALT LAKE CITY,	UT					x
Sams Club	Provo	UT				x	x
Sam's Club - Salt Lake City	Salt Lake City	UT	x				
Sam's Club #4718	South Jordan	UT					x
Sam's Club #4730	West Jordan	UT	x				x
Sams Club #6444	Murray	UT					x
Sam's Club #6682	Layton	UT	x				x
Sam's Club #6683	Murray	UT					x
Sam's Club #6684	Riverdale	UT	x			x	
Sam's Club #6686	Salt Lake City	UT					x
samssclub.com		UT	x				
Scott Hale Plumbing, Heating & Air	Salt Lake City	UT				x	
Scott Heating & Air Inc	Ogden	UT					x
Service Experts of Utah	Ogden	UT					x
Skylake Heating & Air	Herriman	UT					x
Smith's Marketplace #495	West Jordan	UT	x				
Solcius, LLC	Orem	UT	x				
Spencer Mears Audio Video	Midvale	UT					x
Standard Plumbing Supply	Sandy	UT					x

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
Stoddco Heating & Air	West Jordan	UT				x	
Strand Heating & Air	Park City	UT	x				x
Target	Layton	UT					x
Target #T0768	West Jordan	UT	x				
Target #T1751	Salt lake City	UT					x
Target #T1752	Sandy	UT				x	x
Target #T1754	Orem	UT	x			x	x
Target #T1755	Layton	UT	x				x
Target #T2123	South Jordan	UT	x				x
Target #T2150	West Jordan	UT					x
Target #T2609	West Valley City	UT					x
Target #T2641	Salt Lake City	UT	x			x	x
Target of American Fork	American Fork	UT	x				x
Target of Riverdale	Riverdale	UT	x				x
Target-Centerville	Centerville	UT					x
Thompson's Comfort Connection	Midvale	UT	x				x
Total Air Control	Layton	UT					x
Total Home Comfort	Kaysville	UT	x				
Ultimate Heating & Air Conditioning	Lehi	UT	x				
Utah HVAC	Sandy	UT	x				
Verizon	Spanish Fork	UT				x	x
Verizon Wireless - American Fork	American Fork	UT	x				x
Verizon Wireless - Draper	Draper	UT					x
Verizon Wireless - Layton	LAYTON	UT	x				
Verizon Wireless - Logan	Logan	UT	x				
Verizon Wireless - Midvale	Midvale	UT	x				x
Verizon Wireless - Riverdale	Riverdale	UT	x			x	x
Verizon Wireless - Salt Lake City	Salt Lake City	UT	x				
Verizon Wireless - West Jordan	West Jordan	UT					x
Verizon Wireless - West Valley	West Valley City	UT				x	x
Verizon.com		UT	x			x	
Vernal Winnelson Co	Vernal	UT	x				
Vibrant Smart Home, LLC	West Valley	UT	x				

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
Vivant Home Services	SLC	UT					x
VIVINT	Provo	UT				x	x
Vivint Smart Home	Provo	UT	x			x	x
VRF Specialties	Riverton	UT					x
Walmart	Orem	UT					x
Wal-Mart	Riverdale	UT					x
Wal-Mart - Supercenter #1573	Price	UT	x				
Walmart #04272	LOGAN	UT					x
Walmart #1438	Cedar City	UT					x
Walmart #1440	Tooele	UT	x				x
Walmart #1686	Taylorsville	UT					x
Walmart #1699	Layton	UT				x	x
Walmart #1708	Riverdale	UT	x				
Walmart #1768	Orem	UT					x
Walmart #2307	South Jordan	UT	x				x
Walmart #2921	Harrisville	UT	x				
Walmart #3232	West Jordan	UT	x				x
Walmart #3589	Salt Lake City	UT				x	
Walmart #3620	Riverton	UT	x				
Walmart #3789	Ogden	UT					x
Walmart #3848	Syracuse	UT					x
Walmart #4208	Salt Lake City	UT	x				
Walmart #4689	Cedar Hills	UT				x	
Walmart #5167	Payson	UT					x
Walmart #5234	Clinton	UT	x				
Walmart #5235	Sandy	UT	x				x
Walmart #5270	Lindon	UT	x				
Walmart of Logan #4272	Logan	UT	x				
Walmart of Ogden	Ogden	UT	x				
wal-mart.com		UT	x			x	x
Warmzone	Draper	UT					x
West Bountiful Lowes - Online	West Bountiful	UT					x
White Mountain Enterprises	Draper	UT	x				

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
www.Bestbuy.com	SLC	UT					x
www.nest.com	Woods Cross	UT					x

Table 3: 2018 Non-Participating Downstream Retailers

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
AAFES-Military Exchange	DALLAS	TX					x
AceHardware.com	Loxley	AL				x	
ALTATAC	Los Angeles	CA				x	x
Amazon Prime	Seattle	WA		x			x
Amazon.com	Seattle	WA	x	x		x	x
Amazon.com, Inc.	Seattle	WA			x	x	x
ATT	Tustin	CA					x
B&H Photo Video	New York	NY					x
Bed Bath & Beyond Inc	Union	NJ					x
Best Buy	ONLINE	NJ			x	x	x
BestBuy.com	Internet	NJ	x			x	x
Blackfoot Appliance	Blackfoot	ID	x				
Buydig.com	Edison	NJ					x
Costco	Billings	MT	x			x	x
Costco Online	EDISON	NJ				x	x
Costco #25	Reno	NV					x
costco #737	last vegas	NV					x
Costco (online)	Brick	NJ					x
COSTCO INC	Clifton	NJ					x
Costco Online	Seattle	WA				x	x
Costco.com (online)	Randolph	NJ				x	
COSTCOWHOLESALE.COM	ONLINE ORDER	AL					x
Daily Steals online through Facebook marketplace	Miami	FL			x		x
Ebay James R. Latal Snagadeal7	Arlington Heights	IL					x
Ebay online	San Jose	CA					x
ebay.com	San Jose	CA	x			x	x
Ecobee.com	Toronto	ON	x			x	x
ElveWireless.comm	Addison	TX				x	
E-Tech Galaxy LLC	Fort Worth	TX					x
Facebook Daily Steals	Menlo Park	CA					x

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
Ferguson Enterprises	Los Angeles	CA	x				
fingerhut	eden prairie	MN					x
Fingerhut.com	St. Cloud	MN	x				
Good Guys Electronics	Chatsworth	CA					x
Google Express	Mountain View	CA	x				
Google Fiber	Mountain View	CA					x
Google Merchandise Store	Mountain View	CA				x	x
Google, Inc.	Mountain View	CA	x				
Happy Blue Store	Solvang	CA					x
Home Depot	Cheyenne	WY				x	x
Home Depot - Online	Online	NJ					x
Home Depot Online	www.HomeDepot.com	NJ		x			x
Home Depot Online - www.HomeDepot.com	Home Depot Online - www.HomeDepot.com	NJ					x
HomeDepot.com	N/A		x	x		x	x
HSN.com	Clearwater	FL	x				
HVACSTORES.COM	Doral	FL	x				
Kohls Department Stores INC	Menomonee Falls	WI				x	x
Kohls.com	Middletown	OH	x				
Lowe?s	Pocatello	ID					x
Lowes	Idaho Falls	ID				x	x
Lowe's	Pocatello	ID				x	x
LOWE'S - Online	North Wikesboro	NC					x
Lowe's of Goodyear, Arizona	Goodyear	AZ					x
Lowe's Online	Mooresville	NC					x
MassGenie	Irvine	CA					x
Nest Labs	Palo Alto	CA				x	
Nest Labs, Inc	Palo Alto	CA				x	x
Nest.com	Palo Alto	CA	x			x	x
NestRE17.com	online	NJ					x
Newegg.com	Whittier	CA	x		x	x	x
OfficeMax	Las Vegas	NV					x
Orchard Supply Hardware	San Jose	CA					x

Retailers	City	State	Smart Thermostat	Smart T-stat w/ ASHP	Smart T-stat w/ EFAF	Smart T-stat w/ EFAF + CAC	Smart T-stat w/ Gas FAF + CAC
Pro Electronics Distributing	North Hollywood	CA					x
ProElectronics Distributing	North Hollywood	CA					x
Rakuten	San Mateo	CA					x
Rakuten.com	Aliso Viejo	CA	x	x		x	x
Rautken.com	Online	NJ					x
store.nest.com	Palo Alto	CA					x
SupplyHouse.com	Melville	NY					x
Target.com	Minneapolis	MN	x			x	x
Tekspree.com	Gainesville	FL	x				
The Home Depot	Idaho Falls	ID				x	x
The Home Depot, Inc.	Atlanta	GA		x			x
Verizon online	Fort worth	TX					x
Verizon Wireless	Las Vegas	NV				x	x
VM Innovations	Lincoln	NE					x
Walmart #1456	Evanston	WY					x
Woot	Carrollton	TX					x
Woot (via Amazon.com)	Carrollton	TX					x
Woot.com	Carrollton	TX				x	x
www.eBay.com	San Jose	CA					x
www.verizonwireless.com	Online	NJ					x

Table 4: 2018 Participating HVAC Trade Allies

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	ECM Retrofit, Gas Furnace	Heat Pump to Heat Pump Upgrade - Tier 1	Heat Pump to Heat Pump Upgrade - Tier 2	Heat Pump, Multi-Head, Ductless	Heat Pump, Multi-Head, Ductless - Manufactured Homes	Heat Pump, Single-Head, Ductless	Heat Pump, Supplemental, Ductless
ACX Service	Ogden	UT	x						
Air Now Heating & Air Conditioning	Ogden	UT				x			
Aire Serv of Salt Lake	Salt Lake City	UT	x						
Any Climate Mechanical	Sandy	UT						x	
Atkinson Electronics Inc.	Murray	UT	x						
Brigham Heating & Cooling	Brigham City	UT	x						
Comfort Solutions	Ogden	UT				x			x
Daniels Plumbing & Heating Inc.	Vernal	UT					x		
ESCO Services	Salt Lake City	UT							x
Gray Wolf Mechanical	Provo	UT							x
Gunther's Comfort Air	American Fork	UT							x
High Country HVAC Inc.	Centerville	UT	x						
Jones Heating & Air Conditioning	West Valley City	UT						x	x
Lee's Heating and Air	Salt Lake City	UT							x
Manwill Plumbing and Heating	Salt Lake City	UT							x
Max Comfort Air Systems	West Valley	UT							x
McLaughlin Air Conditioning and Heating Inc	Hurricane	UT		x	x				
Moab Heat & Cool, LLC	Moab	UT				x			x
Pond's Plumbing Heating & Air Conditioning	North Salt Lake	UT		x	x	x			
Same Day Heating and Air	Salt Lake City	UT	x						
Service Experts of Salt Lake City	Midvale	UT				x			x
Smedley & Associates Plumbing and Heating	Layton	UT							x
Spring Creek Mechanical	Springville	UT	x						
Triple T Inc	Spanish Fork	UT			x				x
Western Mechanical Inc.	Logan	UT				x			x

Table 5: 2018 Participating Weatherization Trade Allies

Retailers	City	State	Insulation-Attic
5 Star Building Products, LLC	Orem	UT	x
Absolute Air Heating and Air Conditioning	Mapleton	UT	x
Air Tight Energy Inc.	Orem	UT	x
All Around Windows and Doors LLC	Ogden	UT	x
Apex Insulation, LLC - UT	North Logan	UT	x
Barton Insulation	Vernal	UT	x
Best Property Improvements, Inc.	Holladay	UT	x
Bonded Insulation	Salt Lake City	UT	x
Cornerstone Worx Inc.	Riverdale	UT	x
Eco Insulation	St George	UT	x
Ecostar Insulation	Bountiful	UT	x
Elite Energy Solutions	Lindon	UT	x
Energy Pro	Hooper	UT	x
Energy Savers Insulation	Layton	UT	x
Greenhome Specialties	Layton	UT	x
Greenify Energy Savers	Sandy	UT	x
Hansen All Seasons	Lindon	UT	x
Home Depot #4401	Riverdale	UT	x
Home Depot #4402	Salt Lake City	UT	x
Home Depot #4403	Salt Lake City	UT	x
Home Depot #4408	Centerville	UT	x
Home Depot #4409	Sandy	UT	x
Home Depot #4410	West Jordan	UT	x
Home Depot #4411	Ogden	UT	x
Home Depot #4412	Washington	UT	x
Home Depot #4413	Salt Lake City	UT	x
Home Depot #4421	Sandy	UT	x
Home Depot #8566	Riverton	UT	x
Home Depot #8583	Layton	UT	x
Home Depot At-Home Services	Salt Lake City	UT	x
Home Energy Experts LLC	Clearfield	UT	x
Hone Insulation	Levan	UT	x
IDI Distributors	Salt Lake City	UT	x
Insulation From Hale, LLC	North Salt Lake	UT	x
J & K Insulation LLC	PLEASANT VIEW	UT	x

Retailers	City	State	Insulation-Attic
Kendall Insulation	Ogden	UT	x
Lowe's #1501	Logan	UT	x
Lowe's #178	Orem	UT	x
Lowe's #2275	Salt Lake City	UT	x
Lowe's #2845	Clinton	UT	x
Mountain Fiber Insulation	Hyrum	UT	x
Nelson Insulation	Roy	UT	x
Penguin Insulation, LLC	Layton	UT	x
RLA & Sons, LLC	Draper	UT	x
Roper Lumber Company	Fillmore	UT	x
Service Experts Heating & Air Conditioning	Ogden	UT	x
Service Experts of Salt Lake City	Midvale	UT	x
Service Experts of Utah - Provo	Midvale	UT	x
Sunroc Building Materials	Lindon	UT	x
Superior Home Improvement	South Salt Lake	UT	x
Sutherlands - Price	Price	UT	x
True Value Hardware - Walker's	Moab	UT	x
United Subcontractors, Inc.	Salt Lake City	UT	x
USI Cardalls LLC	Logan	UT	x
USI Cardalls LLC - North Salt Lake City	North Salt Lake City	UT	x
Western Insulation LLC	Murray	UT	x

Table 6: 2018 Participating Manufactured Homes Trade Allies

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Manufactured Homes Duct Sealing	No redemptions in 2018
Home Energy Experts	Centerville	UT	x	
Synergy Efficiency LLC	Chubbuck	ID	x	

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 5

*watt*smart Business Vendor Network

wattsmart® Business Vendor Network

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

Search Criteria:

State(s)	[Utah]
Program(s)	[Commercial]
Specialties	[Appliances, Building envelope, Compressed air, Controls – HVAC, Controls – Lighting, Farm and dairy, Food service, HVAC - evaporative, HVAC - unitary, HVAC check-up, HVAC instant incentives, Irrigation, Lighting, Lighting instant incentives, Motors and VFDs, Office equipment, Other Specialty]
Service Address	
Business Name	

Search Results: 75 record(s) found

About Us	Service Areas	Company Name	Contact Information	Specialty	Business Type	Projects Completed	Distance (miles)
Premium Vendor Learn More: https://wattsmartbusiness.com/premiumvendors/lms/	Idaho, Utah	**Lighting & Maintenance Service** Address: 663 West 4330 South Salt Lake City, UT 84123 Website: http://www.lmslighting.com	Phone: 801-281-0400 Name: Chris Munford Email: cmunford@lmslighting.com	Lighting	Contractor	66	
Premium Vendor	Idaho, Utah, Wyoming	**Codale - Salt Lake City** Address: 5225 West 2400 South Salt Lake City, UT 84120 Website:	Phone: 801-975-5525 Name: Tammy Smith Email: tammys@codale.com	Controls – Lighting, Lighting, Lighting instant incentives	Distributor	35	

wattsmart® Business Vendor Network

Premium Vendor Learn More: https://wattsmartbusiness.com/premiumvendors/commercial-lighting-supply/	Utah	**Commercial Lighting Supply, Inc.** Address: PO Box 65675 Salt Lake City, UT 84165-0675 Website: http://www.commerciallightinginc.com	Phone: 801-972-3060 Name: Mark Barton Email: mark@commerciallightinginc.com	Lighting, Lighting instant incentives	Distributor	33
Premium Vendor Learn More: https://wattsmartbusiness.com/premiumvendors/advancedlighting/	Utah	**Advanced Lighting, Inc. - Utah** Address: 2875 west parkway blvd. Salt Lake City, UT 84119 Website: http://www.advlight.com	Phone: 801-972-9530 Name: Brad Kossin Email: brad@advlight.com	Lighting	Contractor	17
Premium Vendor	Idaho, Utah, Wyoming	**CED- Logan** Address: 636 N. 600 W. Logan, UT 84321 Website: http://cedlogan.shopced.com	Phone: 435-752-8905 Name: Devin Migliori Email: devinm@cedlogan.com	Farm and dairy, Irrigation, Lighting, Lighting instant incentives	Distributor	2
	Idaho, Utah, Wyoming	**Elite Energy Solutions** Address: 162 S 1900 W Suite 100 Lindon, UT 84042 Website: http://www.eliteenergysolutions.com	Phone: 801-640-9779 Name: Chet Stevens Email: cstevens@elitees.net	Building envelope	Contractor	42
	Utah	**ESP+** Address: 9580 S 500 W Sandy, UT 84070 Website:	Phone: 801-566-0600 Name: Joe Ferguson Email: joef@espplus.net	Lighting	Distributor	41
	Idaho, Utah, Wyoming	**Automated Mechanical** Address: 1574 West 2650 South Ogden, UT 84010 Website: http://www.automatedmechanical.com	Phone: 801-525-9500 Name: Thomas Mudge Email: tmudge@automatedmechanical.com	Controls – HVAC, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	Contractor	39

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Idaho, Utah, Wyoming	**Energy Management Collaborative llc** Address: 2890 Vicksburg Lane N Plymouth, MN 55447 Website: http://www.emcllc.com	Phone: 952-542-7968 Name: Jolene Fenn-Jansen Email: jfenn-jansen@emcllc.com	Lighting	Other	26
	Utah	**Utah LED** Address: 2551 East 4510 South Holladay, UT 84117 Website: https://www.utahled.com	Phone: 801-694-8509 Name: Matt Frazier Email: sales@utahled.com	Lighting	Other	15
	Utah	**Holbrook Service** Address: 1580 S. Pioneer Rd. Salt Lake City, UT 84104 Website: http://www.holbrookservice.com	Phone: 801-359-3769 Name: Patrick Stratford Email: pstratford@holbrookservice.com	Controls – HVAC, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	Contractor	12
	Utah	**CED - Salt Lake City** Address: 1819 South 900 West Salt Lake City, UT 84104 Website: http://www.cedcareers.com/	Phone: 801-486-3501 Name: Duane Bernards Email: duane@cedslc.com	Lighting, Lighting instant incentives	Distributor	12
	Utah	**Green Light National** Address: 1001 S 400 E Orem, UT 84097 Website: https://greenlightnational.com	Phone: 801-722-8677 Name: John Murphy Email: johnm@greenlightnational.com	Controls – Lighting, Lighting, Other Specialty	Distributor, Other	12
	Utah	**SuperGreen Solutions** Address: 2682 S. Highland Dr. Ste 103 SALT LAKE CITY, UT 84106 Website: http://www.supergreensolutions.com/salt-lake-city-ut	Phone: 801-953-1096 Name: Franco Pedraza Email: info.slc@supergreensolutions.com	Controls – Lighting, Lighting, Lighting instant incentives, Other Specialty	Distributor	11

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Utah	**Perfect Vision Lighting** Address: 1312 North Commerce Dr. A306 Saratoga Springs, UT 84045 Website:	Phone: 801-509-1235 Name: Steve Nedeau Email: nedeau89@hotmail.com	Lighting	Other	11
	Idaho, Utah, Wyoming	**BidEnergy Inc.** Address: 1628 JFK Blvd, Suite 2100 Philadelphia, PA 19103 Website: http://bidenergy.com/	Phone: 215-732-4480 Name: Tim Mayo Email: tim.mayo@bidenergy.com	Appliances, Building envelope, Controls – Lighting, Food service, HVAC - evaporative, HVAC - unitary, Lighting, Motors and VFDs, Office equipment	Other	9
	Idaho, Utah, Wyoming	**Optica Lighting** Address: 1772 Ross Dr Ogden, UT 84403 Website: http://www.opticalighting.com	Phone: 801-510-6314 Name: Mike Walsh Email: mike@opticalighting.com	Lighting	Contractor, Distributor	9
	Idaho, Utah, Wyoming	**Engie Services U.S. Inc** Address: 136 Longwater Drive, Suite 103 Norwell, MA 02061 Website: http://www.engieservices.us	Phone: 781-563-4376 Name: Jamie Cragnoline Email: jamie.cragnoline@engie.com	Controls – Lighting, HVAC - unitary, Lighting, Motors and VFDs	Contractor, Engineering_Firm	9
	Utah	**Graybar Electric Company, Inc.** Address: 2841 South 900 West Salt Lake City, UT 84119 Website: http://www.graybar.com/	Phone: 385-267-5187 Name: Isaac Jaten Email: isaac.jaten@graybar.com	Controls – Lighting, Lighting, Lighting instant incentives	Distributor, Other	8
	Utah	**Green Planet Company** Address: 63 East 11400 South #257 Sandy, UT 84070 Website: http://www.greenplanetcompany.com	Phone: 801-980-1518 Name: Chris Parker Email: chris@greenplanetcompany.com	Controls – Lighting, Lighting, Other Specialty	Distributor, Manufacturer_Rep, Other	7

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Utah	**DiVi Energy, LLC** Address: 4275 N Thanksgiving Way, Ste 111 Lehi, UT 84043 Website: http://divienergy.com	Phone: 541-390-4893 Name: Robert Taylor Email: rtaylor@fixmyenergy.com	Lighting	Contractor, Manufacturer_Rep, Other	7
	Idaho, Utah, Wyoming	**Harris Lighting Products** Address: 1405 west 800 north Preston, ID 83263 Website: http://www.haleymhamblin.wixsite.com/harrislp	Phone: 208-852-2890 Name: Chase Harris Email: chase@harrislightingproducts.com	Controls – Lighting, Lighting	Distributor, Manufacturer_Rep, Other	6
	Utah	**Meyer Lighting & Supply LLC** Address: 1192 Draper Parkway #212 Draper, UT 84020 Website: http://meyerlightingutah.com/	Phone: 801-523-3980 Name: Ray Price Email: meyerlighting@gmail.com	Lighting, Lighting instant incentives	Distributor	6
	Utah	**NGL Supply** Address: 3555 s. 700 W. Salt Lake City, UT 84119 Website: http://www.nglscorp.com	Phone: 801-357-9848 Name: Daniel Tucker Email: dtucker@nglscorp.com	Lighting	Distributor, Engineering_Firm, Manufacturer_Rep, Other	6
	Utah	**Hogan Electric Inc.** Address: 4035 South Main Salt Lake City, UT 84107 Website: http://www.hoganelectric.com	Phone: 801-261-8300 Name: Dave Hogan Email: dave@hoganelectric.com	Lighting, Motors and VFDs	Contractor	5
	Utah	**Whitehead Electric** Address: 247 31st Street Ogden, UT 84401 Website:	Phone: 801-394-1657 Name: Jim Strank Email: jstrank@whitehead-electric.net	Building envelope, Controls – Lighting, Lighting, Motors and VFDs	Distributor	5

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Utah	**Border States Electric - Salt Lake City** Address: PO Box 57857 Salt Lake City, UT 84157 Website: https://www.borderstates.com/Home	Phone: 801-268-2555 Name: Scott Kappas Email: skappas@borderstates.com	Controls – Lighting, Lighting, Lighting instant incentives	Distributor	5
	Idaho, Utah, Wyoming	**Trane** Address: 2817 South 1030 West Salt Lake City , UT 84119 Website: http://www.trane.com	Phone: 801-415-2032 Name: Mario Maestas Email: mmaestas@trane.com	Building envelope, Compressed air, Controls – HVAC, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs, Other Specialty	Contractor, Distributor, Manufacturer_Rep, Other	5
	Utah	**Quantum Lighting Group** Address: 4074 S. 300 W. Salt Lake City, UT 84107 Website: http://www.quantumltg.com	Phone: 801-506-1022 Name: Jared Done Email: jsdone@quantumltg.com	Lighting	Manufacturer_Rep	4
	Utah, Wyoming	**Light Energy Development** Address: 41 N Rio Grande, Suite 101 Salt Lake City, UT 84101 Website: http://www.ledllc.net	Phone: 801-456-3910 Name: Adam Oakley Email: adamo@ledllc.net	Building envelope, Controls – Lighting, HVAC - evaporative, HVAC - unitary, Lighting, Motors and VFDs	Distributor, Other	3
	Utah	**DMA Total Lighting Concepts** Address: 5263 South Commerce Drive Suite 201 Murray, UT 84107 Website: http://www.dmatlc.com	Phone: 801-870-3040 Name: Gabriel Gabriel Arzate Email: gabe@dmatlc.com	Controls – Lighting, Lighting	Manufacturer_Rep	3
	Utah	**Lit Electric Inc.** Address: 2394s 4000w Taylor, UT 84401 Website: www.lit-electrical.com	Phone: 801-721-6770 Name: Spencer Mcarthur Email: spencer@lit-electrical.com	Lighting	Contractor	3

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Utah	**Mechanical Service & Systems** Address: 1055 South 700 West Salt Lake City, UT 84104 Website: http://www.mss84.com	Phone: 801-255-9333 Name: Steve Holbrook Email: sholbrook@mss84.com	HVAC - unitary, HVAC check-up, Motors and VFDs	Contractor	3
	Utah	**Home Energy Solutions** Address: 1110 W 650 N Suite C Centerville, UT 84014 Website:	Phone: 801-230-8453 Name: Brad VanderMeyden Email: b.vandermeyden@gmail.com	Building envelope, Lighting, Other Specialty	Other	3
	Utah	**Relumination LLC** Address: 2821 S 35th St. Ste 5/6 Phoenix, AZ 85034 Website: http://www.reluminationn.com	Phone: 480-478-0703 Name: Daniel Henderson Email: dan@relumination.com	Controls – Lighting, Lighting	Contractor	3
	Utah	**Bastion Technologies** Address: 175 W 7065 S Midvale, UT 84047 Website: http://www.bastiontech.com	Phone: 800-328-6024 Name: Stephen Chou Email: stephen.c@bastiontech.com	Lighting	Distributor, Engineering_Firm, Manufacturer_Rep	3
	Utah	**Midgley-Huber, Inc.** Address: 2465 S. Progress Drive Salt Lake City, UT 84119 Website: http://www.midgley-huber.com	Phone: 801-972-5011 Name: Robert Kershaw Email: rob@midgley-huber.com	HVAC - evaporative, HVAC - unitary, Motors and VFDs	Manufacturer_Rep	2
	Idaho, Utah, Wyoming	**Brilliant Lighting Center** Address: 1964 N 400 E North Ogden, UT 84414 Website: http://www.brilliantlightingcenter.com	Phone: 435-327-1020 Name: Mark Miller Email: mcm605@gmail.com	Lighting, Lighting instant incentives	Distributor	2

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Utah	**Thomson Electric Sales** Address: PO BOX 3790 Logan, UT 84323 Website: http://thomsonelectricsupply.com	Phone: 435-752-2252 Name: Brent Lundstrom Email: brent@thomsonelectricsupply.com	Controls – Lighting, Lighting	Distributor	2
	Utah	**Platt Electric Supply - Salt Lake City** Address: 840 West 2600 South Salt Lake City, UT 84119 Website:	Phone: 801-974-5773 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	Distributor	2
	Utah	**Advanced Energy Lighting Technology** Address: 146 N. Old Highway 91 Suite 4 Hurricane,, UT 84737 Website: http://www.brightlightguys.com/	Phone: 877-254-2358 Name: Rick Christensen Email: brightlightguys@gmail.com	Lighting, Lighting instant incentives	Distributor	2
	Utah	**Burton Electric Inc** Address: 8805 s 1300 west west Jordan, UT 84088 Website:	Phone: 801-450-1201 Name: Dan Dan Burton Email: dan.burton@hotmail.com	Lighting	Contractor	2
	Utah	**Royal Wholesale Electric - Ogden** Address: 1406 W 3300 S Ogden, UT 84401 Website:	Phone: 385-405-7200 Name: Karre Leishman Email: karre@royalogden.com	Lighting, Lighting instant incentives	Distributor	2
	Utah	**Elysium Energy** Address: 14466 South Long Ridge Drive Herriman, UT 84096 Website: http://www.elysiumenergy.net	Phone: 801-440-6821 Name: Justin McMurtrey Email: justin@elysiumenergy.net	Lighting, Other Specialty	Other	2

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Utah	**Border States Electric - Logan** Address: 825 West 200 North Logan, UT 84321 Website: https://www.borderstates.com/	Phone: 435-752-2760 Name: Andrew May Email: amay@borderstates.com	Controls – Lighting, Lighting, Lighting instant incentives	Distributor	1
	Utah	**CAO Lighting** Address: 4628 W Skyhawk Dr West Jordan, UT 84084 Website: http://www.caolighting.com	Phone: 801-256-9282 Name: Johnny Jiang Email: johnnyj@caolighting.com	Lighting	Distributor, Engineering_Firm, Manufacturer_Rep, Other	1
	Utah	**Platt Electric Supply - Tooele** Address: 1183 N 80 E Tooele, UT 84074 Website:	Phone: 801-597-0867 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	Distributor	1
	Idaho, Utah, Wyoming	**Relevant Solutions** Address: 3186 Washington Street Salt Lake City, UT 84115 Website: http://www.relevantsolutions.com	Phone: 801-214-3317 Name: Alan Sweatfield Email: alan.sweatfield@relevantsolutions.com	Controls – HVAC, Motors and VFDs	Distributor	1
	Utah	**Central Electric** Address: po box 17897 murray, UT 84107 Website: http://www.central-electric.com	Phone: 801-467-5479 Name: Michael Jones Email: service@central-electric.com	Controls – Lighting, Lighting	Contractor	1
	Utah	**Saddleback Lighting** Address: 1425 W Red Ledge Road Ste 101 Washington, UT 84780 Website:	Phone: Name: Carole Long Email: carole@saddlebacklighting.com	Lighting, Lighting instant incentives	Distributor	1
	Utah	**UNVC** Address: 11350 E 18625 S #118 Mt. Pleasant, UT 84647 Website: http://www.unvc.net	Phone: 435-851-4162 Name: Gregory Cummings Email: gcummings@unvc.net	Building envelope, Compressed air, Controls – Lighting, HVAC - evaporative, HVAC - unitary, Motors and VFDs	Engineering_Firm, Other	1

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Utah	**Grainger** Address: 2775 S 900 W Salt Lake City, UT 84119 Website: https://www.grainger.com/	Phone: 847-548-4702 Name: Brad Meadows Email: brad.meadows@grainger.com	Lighting	Distributor	1
	Idaho, Utah	**Lennox Industries Inc.** Address: 1008 W 2780 S Salt Lake City, UT 84119 Website: http://www.lennoxcommercial.com	Phone: 801-973-8889 Name: Jeff Barrett Email: jeff.barrett@lennoxind.com	HVAC - unitary	Distributor	1
	Utah	**Utah Engineering** Address: 145 W. 2950 S. Salt Lake City, UT 84115 Website: http://www.utahengineering.com	Phone: 385-315-1095 Name: Brad Gordon Email: bgordon@ue-ac.com	Controls – HVAC, Food service, HVAC - evaporative, HVAC - unitary, HVAC check-up, HVAC instant incentives, Motors and VFDs	Contractor	1
	Utah, Wyoming	**Encentiv Energy, LLC** Address: 1501 Ardmore Blvd. Pittsburgh, PA 15221 Website: http://www.encentivenergy.com	Phone: 412-723-1516 Name: Steve Bolibruck Email: sbolibruck@encentivenergy.com	Building envelope, Controls – Lighting, HVAC - evaporative, HVAC - unitary, Lighting, Motors and VFDs	Other	1
	Utah	**SES Green Energy** Address: 3640 Wagon Wheel Way Park City, UT 84098 Website: http://www.sesgreenenergy.com	Phone: 801-234-0309 Name: Tomi Smith Email: Tsmith@sesenergyinc.com	Lighting, Other Specialty	Contractor	1
	Utah	**Schooley Electric** Address: 676 W 8th Ave Midvale , UT 84047 Website: http://www.schooleyelectricinc.com	Phone: 801-641-3395 Name: Josh Ray Email: Josh@schooleyelec.com	Lighting	Contractor	1

wattsmart® Business Vendor Network

	Idaho, Utah, Wyoming	**Long Building Technologies** Address: 4689 S. Cherry St. Murray, UT 84123 Website: http://www.long.com/	Phone: 801-290-6506 Name: Paul Christiansen Email: pchristiansen@long.com	HVAC - evaporative, HVAC instant incentives, Motors and VFDs	Distributor, Manufacturer_Rep	1
	Utah	**Graybar** Address: 24 1500 W Orem, UT 84058 Website: https://www.graybar.com/	Phone: 385-267-5187 Name: Isaac Jaten Email: isaac.jaten@graybar.com	Lighting, Lighting instant incentives, Other Specialty	Distributor	1
	Idaho, Utah, Wyoming	**ACES Companies** Address: 33 N Main St. Suite 207 Logan, UT 84321 Website: https://www.acescompanies.com/	Phone: 435-232-2821 Name: TY Haguewood Email: ty@acescompanies.com	Lighting, Other Specialty	Contractor	1
	Utah	**TEC Electric Company** Address: 755 West 200 South Logan, UT 84321 Website: http://www.tec-electric.com	Phone: 435-753-0920 Name: Chris Thomson Email: chris@tec-electric.com	HVAC - unitary, Lighting, Lighting instant incentives, Motors and VFDs	Contractor	1
	Utah	**JSR Services, LLC.** Address: 475 East Fort Union Blvd Midvale, UT 84047 Website: http://www.jsrservices.com	Phone: 801-748-1764 Name: Skyler Rohbock Email: sky@jsrservices.com	Building envelope	Contractor, Engineering_Firm	1
	Utah	**Spectrum Engineers, Inc** Address: 324 S. State Street, Suite 400 Salt Lake City, UT 84111 Website: http://www.spectrum-engineers.com	Phone: 801-328-5151 Name: Jody Good Email: jmg@spectrum-engineers.com	Lighting	Engineering_Firm	1

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Idaho, Utah, Wyoming	**BriteSwitch, LLC** Address: 195 Nassau St, Ste 13 Princeton, NJ 08542 Website: http://www.briteswitch.com	Phone: 609-945-5349 Name: Laura Oliver Email: laura.oliver@briteswitch.com	Controls – Lighting, Lighting	Other	1
	Utah	**Avi-on** Address: 2750 Rasmussen Road, Suite 203 Park City, UT 84098 Website: http://avi-on.com/	Phone: 801-633-1676 Name: James May Email: james@avi-on.com	Controls – Lighting, Lighting	Manufacturer_Rep	1
	Utah	**Salt Lake Winlectric** Address: 6120 s 300 w Murray, UT 84107 Website: www.slcwinlectric.com	Phone: 801-293-1600 Name: Susan Owens Email: sjowens@winlectric.com	Lighting	Distributor	1
	Idaho, Utah, Wyoming	**Clark's Quality Roofing, Inc.** Address: 334 West Anderson Avenue Murray, UT 84107 Website: http://www.clarkroof.com	Phone: 801-266-3575 Name: Hilary Clark Email: hilaryc@clarkroof.com	Building envelope	Contractor	1
	Utah	**Comfort Systems USA Intermountain** Address: 2035 Milestone Dr. Suite A Salt Lake City, UT 84104 Website: http://www.comfortsystemsutah.com	Phone: 801-907-6700 Name: Larry Montague Email: lmontague@csusai.com	Controls – HVAC, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	Contractor	1
	Utah	**First Service Mechanical** Address: 5200 Green Pine drive Murray, UT 84123 Website: http://www.fsmhvac.com	Phone: 801-968-4220 Name: Thad Torres Email: thad@fsmhvac.com	Controls – HVAC, Food service, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	Contractor	1

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Idaho, Utah, Wyoming	**Comfort Solutions** Address: 1470 Wall Ave Ogden, UT 84404 Website: http://www.comfortsolutionsutah.com	Phone: 801-393-2206 Name: Adam Yearsley Email: adam@comfortsolutionsutah.com	HVAC - unitary, HVAC instant incentives	Contractor	1
	Utah	**Salmon Electrical Contractors** Address: 1778 W. 1180 S. Woods Cross, UT 84087 Website: http://www.salmonelectric.com/	Phone: 801-292-3444 Name: Dave Grandstaff Email: dave@salmonelectric.com	Lighting	Contractor	1
	Utah	**Conserve-A-Watt Lighting** Address: 2327 South Decker Lake Blvd West Valley City, UT 84119 Website: http://www.Cawlighting.com	Phone: 801-975-9363 Name: Toby Shaw Email: tobys@cawlighting.com	Lighting, Lighting instant incentives	Distributor	1
	Utah	**Codale - Orem** Address: 362 South Commerce Loop Orem, UT 84058 Website:	Phone: 801-724-3000 Name: Troy Gomm Email: troyg@codale.com	Lighting, Lighting instant incentives	Distributor	1
	Utah	**American Chiller Mechanical Service** Address: 2714 N. Lake Rd Genola, UT 84655 Website: www.American-chiller.com	Phone: 435-531-6730 Name: Kristee Proctor Email: Kristee@american-chiller.com	Controls – HVAC, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	Contractor	1
	Utah	**CR Lighting & Electric, Inc.** Address: 380 N. King St. Layton, UT 84041 Website: http://www.crlighting.net	Phone: 801-544-1533 Name: Dan Solomon Email: Dan@crlighting.net	Lighting	Contractor	1

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 6
Utah Program Evaluation Recommendations and Responses

Utah 2018 Program Evaluations

Program Evaluation Recommendations and Company Responses

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

The table below lists the programs, the program years that were evaluated during 2018 and the third party evaluator who completed the evaluation. Program evaluations are available for review at www.pacificorp.com/es/dsm/utah.html

Program Evaluations

Program	Years Evaluated	Evaluator	Progress Status	Date of Publication
Home Energy Reports	2016 - 2017	ADM	Completed	August 27, 2018
*watt*smart Business	2016 - 2017	Cadmus	Completed	December 14, 2018

For each report published, the tables below summarize the third party evaluator's recommendations and the Company's response.

Table1 – Home Energy Reports Evaluation Recommendations

Home Energy Reports Evaluation Recommendations	Rocky Mountain Power Action Plan
Where possible, tailor program recommendations to demographics. The Refill wave skews younger, with a lower homeownership rate and with 20% of respondents indicating an income less than $25,000 per year. Program materials sent to this wave should have messaging focused on tips more appropriate for renters and lower income households.	Rocky Mountain Power will investigate opportunities to personalize recommendations based on demographics. The new version of Home Energy Reports provides customers additional insights on how they use energy and provides personalized no cost/low cost tips on how to conserve.
Consider cross-referencing participants with known low income screening tools (such as Low Income Home Energy Assistance Program (LIHEAP) registration) to spur outreach for RMP low income programs.	Rocky Mountain Power will take this recommendation under consideration as the program continually improves to provide useful tips for customers.

Table 2 – *watt*smart Business Evaluation Recommendations

***watt*smart Business Evaluation Recommendations**	**Rocky Mountain Power Action Plan**
Increase the deemed savings amount for prescriptive HVAC VFD fan and pump motor projects to match Cadmus' 2014 Variable Speed Drive Loadshape Project report created for NEEP.	The Program is evaluating this recommendation. However, the RMP territory climate zones and expected building applications differ slightly from the NEEP report.
For case lighting, revise the deemed savings to match the DEER workpaper for low and medium temperature case lighting.	The program revised LED display case lighting measure savings in January 2018. The program aligns with the most recent Regional Technical Forum (RTF) analysis as required by two other PacifiCorp territories. This RTF analysis is the most recent available to the market.
Increase consistency with direct calls to action that end all collateral pieces and brochures.	The Company includes a direct call to action in all our collateral materials and brochures. In most cases customers are given the option to go to wattsmart.com, call or email for more information.
Consider adding graphs, charts, images, and even video to convey information and reduce the need for reading copy-heavy communications materials.	The program will take this recommendation under consideration. The Company is developing a new website and in the process, we will be streamlining content, reducing copy and including more video.
For brochures, maintain a consistent font to stay on brand.	The Company launched a new corporate brand campaign in April 2018. Most of the program materials have been updated to reflect the new brand look and feel. We follow our brand guidelines for font usage in all our communications.
If the brochure or overview is shared or hosted digitally, web addresses should be hyperlinked to their destinations.	The program will take this recommendation under consideration.
Consider running additional TV spots during colder months (TV watching increases in cooler months with less daylight).	The Company creates a steady content throughout the year with our TV advertising. In addition to broadcast TV, we use YouTube and social media to deliver video content throughout the year. Sometimes messaging is seasonal with ads running in the warm months to influence behavior associated with cooling.
Request a point of view report from the agency that runs the media strategy regarding adding the LinkedIn platform to the media mix.	In 2019, RMP added LinkedIn back into our media mix to reach business customers. In previous years it did not perform well, but they have recalibrated the inventory we can purchase to make it more attractive.
For the Arena Rising out of Home signage, focus on a singular way to learn more; offering too many methods for readers to engage with a program (e.g., social, multiple URLs) may cause them to gloss over the information completely.	This was a special promotion and collaboration between the Arena Rising effort and Rocky Mountain Power. The purpose was to create awareness for the collaboration between Rocky Mountain Power and the Arena renovation/energy-efficiency project.
Consider using solid backgrounds on Arena Rising out of Home signage, given these tend to be displayed in very busy environments.	Arena Rising had creative control over the look/feel of the signage with their fonts and brand. We pushed them to include more content on the signage as well as our logo.

***watt*smart Business Evaluation Recommendations**	**Rocky Mountain Power Action Plan**
For mobile and desktop emails used for the HVAC Check-Up, consider inserting a call to action further up in the copy to catch/prompt consumers falling off early without reading all the way through the copy.	The Company will take this recommendation into consideration.
As budget allows, consider incorporating video testimonials on program-specific pages to increase customer engagement and to serve as a tool for providing further explanations and generating excitement, without relying on the customer to read additional text.	More video testimonials from customers will be integrated into the website with the Company's new streamlined website design.
Include SBDI measure data in the program database for each SBDI installation, or, at a minimum, in the data provided to the evaluation team.	The Company has added this data to its database reports.
Provide additional training to contractors regarding behaviors and work quality to maintain while on site, and review the project proposal to provide better reporting to participants about exactly what the project will provide. Consider providing a ceiling plan, identifying lamps/fixtures to be addressed.	The Company has started providing mandatory customer service training to all outsourced delivery contractors, but has concern over the increased costs of providing ceiling plans to customers via a direct install program. The Company will research this option.
Review the marketing strategy for Utah and consider increasing marketing outreach to nonparticipants, both through branding efforts by RMP and sector outreach by the program administrators. Consider increasing customer segmentation efforts to help trade allies target eligible customers.	The Company will review outreach strategies and evaluate by segment based upon program growth be desired.

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 7
Utah DSM Outreach and Communications Year 9 Report

January – December 2018

TABLE OF CONTENTS

Exhibits

Preface

On June 11, 2009, the Commission approved the Company's proposal to implement an outreach and communications campaign. The objective of the program is to promote energy efficiency and conservation through education and increase customer awareness of and participation in the Company's DSM programs. This report presents an assessment of year 9 (calendar year 2018) of the DSM outreach and communications campaign, including an evaluation of the program in meeting its objectives and a summary of year 9 program activities.

Customer Survey Results

The Company has conducted customer research each year from 2010 to 2018 to determine the effectiveness of the outreach and communications campaign in increasing the awareness of and self-reported participation in DSM programs. The research methodology and findings of this survey work are included below.

Research Methodology

MDC Research completed 1,166 residential online surveys in September 2018. This study was conducted using online survey methodology to trend data with 2017 online survey results.

The overall objective of this research was to measure awareness and affinity for Rocky Mountain Power's energy conservation programs, particularly "being ***watt***smart." Additional objectives included: to measure awareness level of Rocky Mountain Power advertisements and communications; determine awareness of Rocky Mountain Power being a resource for energy efficiency; gauging association between ***watt***smart and Rocky Mountain Power; and discerning actions residential customers are taking to be ***watt***smart.

MSI National Benchmarking Database Study contains high-level findings regarding energy efficiency in which Rocky Mountain Power received a score of 80% among residential customers. These customers think the Company does a good job of "Providing information on how to control your energy costs," and a score of 73% among commercial customers for "Providing information on how to control electricity costs."

Key Research Findings – Residential customers

Eighty percent of residential customers say Rocky Mountain Power does a good job of having programs that help customers use energy more efficiently. Positive ratings are slightly higher than 2017 year-end findings (73%).

Advertising and communications recall

Two-thirds of Rocky Mountain Power customers recall "being *watt*smart". Of those familiar with "being ***watt***smart," 72% attribute the phrase to Rocky Mountain Power.

Actions taken to conserve electricity

Two thirds (67%) of residential customers have taken some actions to conserve energy, down slightly from 2017 (73%). Actions around lighting are the most common with "Using energy-saving light bulbs" as the leading action at 47% and "Turning off lights when leaving a room" at 15%. Actions around heating/cooling increased over previous years with "adjusting thermostat" at 13%, "Smart/programmable thermostat" at 12% and "Lowered use of/turned off air conditioning/use other cooling means" at 11%.

Reason for taking action

The main reasons for taking action to reduce energy use (among those who have taken action) is to save money (74%) and to help protect the environment (17%). The third reason for taking action is to conserve energy (15%).

Preferred information sources

Rocky Mountain Power is the most commonly mentioned first source for customers to turn to for energy efficiency information. Rocky Mountain Power's website and emails are the most common ways respondents learn about the Company, especially with adults 18-34. Adults 35+ rely on the website and email as well, but have higher recall for bill inserts and direct mail than younger respondents. *(MDC Research)*

Television, the internet, email, and radio are the top sources for information on news and current events. Respondents over 35 are more likely to seek information via television (57%) than respondents who are 18-24 (32%). *(MDC Research)*

MSI Key Research Findings – Commercial customers

Findings for 2018 regarding energy efficiency among commercial customers show the following:

- In 2018, seven in ten (73%) Rocky Mountain Power commercial customers are aware of the Company "offering solutions to help them use energy more efficiently." Findings are up slightly from 2017 (70%).

- In addition, seven-in-ten (73%) Rocky Mountain Power customers believe their utility is doing a good job of "providing information on how to control electricity costs" compared to 70% in 2017.

- Approximately eight-in-ten (81%) of Rocky Mountain Power customers feel their utility company does a good job of "providing information about products and services that are of value to them". This represents a slight drop compared 83% in 2017, and 81% in 2016.

Conclusions

The awareness level for being *watt*smart has remained fairly consistent and customers feel their utility is doing a good job of providing information. Customers are also taking action and, as in

years past, are more likely to conserve energy by using energy saving lighting than any other method. Customers are driven to conserve energy both to save money and help protect the environment.

To leverage this finding, the Company reprised the creative campaign developed in 2017 to highlight the benefits to a customer's wallet and/or bottom line as well as the environment when they take actions to be wattsmart: "Being wattsmart is good for your wallet, and for Utah."

Campaign Activities

Communications, Outreach and Education

*watt*smart is an overarching energy efficiency campaign with the overall goal to engage customers in reducing their energy usage through behavioral changes, and pointing them to the programs and information to help them do it. "Rocky Mountain Power wants to help you save energy and money," remains the key message. In addition, we made a stronger connection between energy efficiency and benefits to the environment. "With simple wattsmart steps you can make a big difference for Utah and the environment. Both now and into the future."

The Company uses earned media, customer communications, education and outreach, advertising, and program specific marketing to communicate the value of energy efficiency, provide information regarding low-cost, no-cost energy efficiency measures and to educate customers on the availability of programs, services and incentives.

For example, from June 25 through September 2, digital and social ads providing low-cost, no-cost tips were triggered to run based on outdoor temperature. When the temperature in Utah reached 92 degrees, ads to "Keep your cool" and "Ways to save" encouraged customers to either use a smart thermostat and set it to 78 degrees, or to use a portable ceiling fan to save on cooling.In 2018, the Rocky Mountain Power continued to tie the *watt*smart concept to messages about others who are being *watt*smart and the benefits they received with an emphasis on business customers while maintaining broad reach through traditional paid media and social media, community outreach, earned media outreach and digital (online) tools.

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

Customer Communications

Beyond paid media, the Company also used statement communications, email, website, social media, and news coverage. Tapping into all resources with consistent messaging has been the Company's approach and will continue to be refined. As part of the Company's regular communications to its customers, support materials, newsletters and the Company's website,

promote energy efficiency initiatives and case studies on a regular basis. The Company uses the following tactics consistently to communicate to customers.

Website:

- rockymountainpower.net/wattsmart (wattsmart.com)
- URLs link directly to the energy efficiency landing page. Once there, customers can self-select their state for specific programs and incentives.
- Home page messages promote seasonal *watt*smart /energy efficiency each month.

Social Media:

- Twitter feed promotes energy efficiency tips and *watt*smart programs each week.
- Facebook posts *watt*smart messages three times per week.

Newsletters

- *Connect* residential newsletter is sent via bill insert (and email to paperless billing customers) five times a year; each issue includes energy efficiency tips and/or incentive program information.

***watt*smart Campaign**

Paid Media

The overall paid media plan objective is to effectively reach its customers through a multi-media mix that extends both reach and frequency. The audiences for communications were prioritized as follows:

- *PRIMARY*: Small to mid-sized businesses
- *SECONDARY*: Residential households in the Company's service area

Table 1 outlines the value provided by each communication channel.

Table 1 – Communication Channels

Communication Channel	Value to Communication Portfolio	Placement
Television Media demo: Adults 25-54, Primary: Small/Mid-sized businesses. Secondary: residential (English and Spanish)	Due to the strength and reach of the Salt Lake City designated market area, television is the most effective media channel.	February –November 2018 Impressions: Business: 5,647,487 Residential: 3,764,992 (includes Hulu impressions 1,820,831 for business)
Radio	Given the cost relative to television, radio builds on communications delivered via television while providing for increased frequency of messages.	February – November 2018 Impressions: Business: 5,040,809 Residential: 3,296,160
Magazine	Extends reach to business customers statewide	January – December 2018: 604,000 impressions

Communication Channel	Value to Communication Portfolio	Placement
Multicultural Cinco de Mayo Event and Telemundo	To extend reach into the Spanish-speaking community, TV commercials aired at Cinco de Mayo event in West Jordan and on TelemundoUtah.com.	May-June 2018: Delivered 103,290 broadcast impressions 226,000 digital impressions and 40,000 stage sponsorship impressions
Public Relations	Educating the next generation of energy savers with television appearances to promote videos and Facebook ads.	39,525 impressions, 277 clicks and a .70% CTR (Click-thru-Rate)
Paid Social Media	Promoted posts on social support broadcast and digital media to increase overall awareness	February – September 2018: Business impressions: 172,124 delivered 649 clicks and a .37% CTR Residential impressions: 1,439,631 delivered 14,952 clicks and a 1.06 CTR, which is on par with the national average.
Facebook	Organic posts provide awareness regarding energy efficiency tips and creates a centralized location to share information on how to be *watt*smart; feature incentive programs and other seasonal information. Information posted three times a week.	As of December 2018 there were 24,989 Facebook followers for Rocky Mountain Power
Twitter (@RMP_Utah)	Awareness for case studies and energy efficiency tips. Tweets posted on a weekly basis.	As of December 2018, there were 6,867 Twitter followers in Utah.
Digital Display	Supports the broadcast and print media while also increasing awareness for energy-saving messaging. The campaign ran through Trade Desk Ad Network, on KSL, Salt Lake Tribune and KSTU, YuMe, Weatherbug and Hulu (streaming television).	Display advertising delivered Business impressions 2,1M with 1,882 clicks and a .09 CTR Residential impressions: 3M with 2,893 clicks and a .10 CTR
Search	Search engine advertising to help customers find information they saw in the advertising.	Search delivered Business impressions 9,120 with 500 clicks and a 5.5% CTR Residential impressions 37,368 with 2,947 clicks and a 7.9% CTR

The total number of 2018 impressions for the *watt*smart campaign was 25,491,366.

Web links to the current portfolio of advertisements are included in Exhibit C of this report.

Public Outreach

Energy Education in Schools
The Company offers a "Be *watt*smart, Begin at Home" school education program delivered through the National Energy Foundation ("NEF"). The program is designed to develop a culture of energy efficiency among teachers, students and families. The centerpiece is a series of one hour presentations with educational and entertaining video components as well as hands-on, large group activities for 5th grade students. Teachers are provided instructional materials for use in their classrooms, and students are sent home with a Home Energy Worksheet to explore energy use in their homes and encourage efficient behaviors.

Presentations are based on state education guidelines. In fall 2018, over 12,870 Utah students participated in the curriculum, which includes 138 schools taught by 504 teachers. Students received "Home Energy Worksheets" and were asked to audit their homes to receive LED night lights as incentives. Teachers were eligible to receive $50 mini-grants for their classrooms depending on how many students completed their worksheet. A summary of NEF's 2018 activities and accomplishments is provided in Exhibit B.

Media Coverage for educating the next generation of energy savers
Rocky Mountain Power sought external media coverage on local television talk shows about the value of educating the next generation of energy savers. Coverage showcased videos created for the school presentations and emphasized the importance of teaching kids about conservation and saving energy. The series of videos feature a very enthusiastic host who demonstrates behaviors to provide fifth-graders with ideas on how they can save energy to both help the environment and save their parents money. Topics in the videos include turning off lights, switching to LED light bulbs, knowing what you want before opening the refrigerator, running the dishwasher only when it's full, and using a fan instead of air conditioning to stay cool.

Multicultural
The Company sponsored the Cinco de Mayo festival in West Valley City on May 5, 2018. The effort included TV commercials on the LED screen during the event and afterwards on Telemundo Utah and on Facebook ads.

*watt*smart Business Advocacy

The *watt*smart Business advocacy program is designed to create more awareness of the benefits of being a *watt*smart Business. The advocacy program is intended to generate awareness, participation and lasting partnerships in the *watt*smart Business program.

The Company partnered with the Salt Lake Chamber to provide energy efficiency and *watt*smart Business content for twice-monthly Utah Business Report radio segments presented weekdays on KSL. Content was created for social media posts about *watt*smart Business and relevant posts made by the Chamber were shared to Rocky Mountain Power followers.

Additional business advocacy outreach was conducted through the Company's involvement with the Utah Manufacturers' Association, the Governor's Economic Development Summit, the Governor's Energy Development Summit, the Energy & Environment Summit, and the Utah Green Business Awards event.

Program Specific Marketing

All energy efficiency program marketing and communications are under the *watt*smart umbrella to insure a seamless transition from changing customer behavior to the actions they could take by participating in specific programs. Separate marketing activities administered by and specific to the programs ran in conjunction with the *watt*smart campaign.

wattsmart Homes Program

Information on the *wattsmart Homes* program is communicated to customers, retailers and trade allies through a variety of channels. Using a strategic approach, the Company communicates select program measures during key selling seasons and uses opportunities like home shows to help increase customer awareness of energy efficiency incentives.

Smart thermostat promotions
To help promote smart thermostat instant incentives, emails were sent to thousands of customers in the spring and during the holiday shopping season to tie with Nest and ecobee offers. Ads also ran on Facebook and Instagram in November and December to further increase awareness of Rocky Mountain Power and manufacturer discounts. The social media ads resulted in 10,713 clicks to the website.

Evaporative cooler discounts
In the summer, the company promoted evaporative cooler instant discounts to customers via a series of emails, printed collateral, point-of-purchase materials and newsletters. The promotions resulted in 4,330 customer visits to the evaporative cooler landing page.

Home shows
wattsmart Homes program staff attended the Salt Lake Tribune's Home and Garden Festival March 9-11, 2018 at the Mountain America Expo Center in Sandy, Utah. To help drive festival attendance, a digital newsletter article, social media posts and website promotions were used to increase awareness of the show. Total attendance at the spring show was approximately 41,669. More than 500 customers used Rocky Mountain Power's online coupon code to get discounted admission to the show. Customers who visited the booth received information about energy efficiency upgrades, the Cool Keeper program and renewable energy choices.

Program staff also attended the Deseret News Home Show on October 12-14, 2018 to help educate customers on energy efficiency, *watt*smart program incentives and other customer solutions. The company sent an email to 260,000 customers to encourage attendance along with an offer for free LED light bulbs. Total attendance at the fall home show was 22,911 and 185 customers used Rocky Mountain Power's online coupon to receive a discount on show admission.

Home Energy Reports

In 2018, the company transitioned the *Home Energy Reports* from Oracle to Bidgely.

With the Bidgely platform, customers receive two emails each month: (1) a monthly summary with an itemized lists of home energy costs by appliance, and (2) a similar homes comparison.

As a new feature, customers can easily use their Rocky Mountain Power login credentials to access their usage data, appliance breakdown and recommendations on the Bidgely platform.

In November, nearly 100,000 customers received an email to let them know they would start receiving the *Home Energy Report* emails.

Cool Keeper

The company uses a variety of direct outreach to keep *Cool Keeper* participants informed and encourage new customers to take part. In 2018, outreach included:

- Emails to Rocky Mountain Power employees to encourage participation.
- Emails to customers who have moved into homes with existing Cool Keeper devices.
- Emails to non-participants to encourage participation.
- Emails to participating customers at the beginning of the cooling season and again at the end of the season with a link to an online survey.
- Letters mailed to participants with information about their annual Cool Keeper bill credit(s).

*watt*smart Business

During 2018, *watt*smart Business communications encouraged customers to inquire about incentives for lighting with controls, HVAC upgrades with advanced rooftop controls, irrigation, and other energy efficiency measures.

The program was marketed with radio, newspaper, magazine, eblasts, digital display, paid social posts, and digital paid search advertising. Radio and print ads featured case study examples from program participants which were repurposed in social media. Eblasts directed viewers to the Company's website, wattsmart.com. This was in addition to direct customer contact by Company project managers and regional business managers, trade ally partners, Chamber outreach and content on the Company website, on Facebook and Twitter.

Targeted direct mail was sent to approximately 1,950 Utah irrigation customers in the spring and fall to encourage energy-saving retrofits. Emails to promote lighting upgrades was sent to customers at the beginning of the year.

During 2018, the program garnered 12,360,451 impressions. A breakdown of impressions by media type is shown in Table 3 below.

Table 3– *watt*smart Business Impressions by Media Type

Communications Channel	Impressions
Radio	6,409,200
Newspaper	2,247,749
Digital display	2,800,891
Social	866,210
Search	36,401
Eblast	16,830
Irrigation direct mail	3,904

Outreach Campaign Budget Results

The 2018 budget for outreach activities was $1,400,000 as presented in Table 4 below. Expense activities are summarized by the channel of communication.

Table 4– 2018 Budget, Actuals, and Variance

	Budget	Actuals	Variance
TV	$ 340,000	$ 339,320	$ (680)
Radio	$ 130,000	$ 138,085	$ 8,085)
Print	$ 50,000	$ 42,816	$ (7,184)
Digital/Social	$ 250,000	$ 235,372	$ (14,628)
Creative/Production/Planning	$ 200,000	$ 316,205	$116,205
General PR	$ 130,000	$ 11,178	$ (118,822)
*watt*smart Events and Sponsorships	$ 100,000	$ 85,680	$ (14,320)
Be *watt*smart, Begin at Home School Education Program (NEF)	$ 175,000	$ 172,532	$ (2,468)
Research	$ 25,000	$ 11,248	$ (13,752)
Total	**$ 1,400,000**	**$ 1,352,436**	**$ (47,564)**

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Exhibit A

Energy Efficiency Questionnaire

Rocky Mountain Power

2018 Energy Efficiency Web Questionnaire

Date:	August 31, 2018
Universe:	General public, Rocky Mountain Power service areas Utah, Idaho and Wyoming
Sample size:	1000 Rocky Mountain Power residential customers
Screener:	Head of household, most likely to contact utility company
Objective:	Measure the public's awareness and affinity for energy conservation programs

LANDING PAGE

MDC Research is conducting a survey on behalf of Rocky Mountain Power regarding their services and programs.

This survey usually takes a few minutes. We are only interested in your opinions. We are not selling anything.

We thank you in advance for taking the time to help us serve you better. We appreciate your participation very much!

To begin the survey, please click '>>>' below.

L1. RECORD STATE FROM SAMPLE

1 Idaho **(QUOTA: MIN 200; NO MAX)**
2 Utah **(QUOTA: MIN 600; NO MAX)**
3 Wyoming **(QUOTA: MIN 200; NO MAX)**

We have a few questions to start to make sure we hear from a broad mix of Rocky Mountain Power customers.

S0 What is your gender?

1 Male
2 Female

Q1 **[Screener 1]** Is Rocky Mountain Power your electricity provider?

1 Yes
2 No → **THANK & TERMINATE**
3 Prefer not to say → **THANK & TERMINATE**

Q2 **[Screener 2]** Are you a person in your household who is likely to make decisions about your household participating in services offered by Rocky Mountain Power?

1 Yes
2 No → **THANK & TERMINATE**
3 I prefer not to answer → **THANK & TERMINATE**

Q3 Do you own or rent your home?

1 Rent
2 Own/ buying
3 Other
7 Prefer not to say

Q4 What is your age category?

1 18 to 24
2 25 to 34
3 35 to 44
4 45 to 54
5 55 to 64
6 65 or over
7 Prefer not to say

Q5 What is your HIGHEST LEVEL OF EDUCATION that you have had the opportunity to complete?

11 Less than High School
12 High School Degree
13 Some College
14 College Degree
15 Some Graduated Study
16 Post-Graduate Degree or Higher
98 Prefer not to say

Q6 During the past six months, from what electric or gas companies do you recall seeing, hearing or reading any form of advertisements or communications?

99 RECORD:_____

DO NOT DISPLAY; FOR CODING USE ONLY
11 Idaho Power
12 Dominion Energy (Questar Gas)
13 Northwest Natural
14 Pacific Gas & Electric/PG&E
15 Pacific Power/PPL

16 PacifiCorp
17 Portland General/PGE
18 Rocky Mountain Power/Utah Power
99 Other, Specify
88 None

Q7 During the past six months, do you recall seeing, hearing or reading any form of advertisements or communications from Rocky Mountain Power?

1 Yes
2 No →**SKIP TO Q8A**

Q8 What types of messages or topics do you remember from Rocky Mountain Power's advertisements or communications?

99 RECORD:_____

DO NOT DISPLAY; FOR CODING USE ONLY
11 Working to keep your power on
12 Electrical safety
13 Programs such as equal pay or customer guarantees
14 Energy efficiency programs
15 Using energy wisely
16 Planning for your future energy needs
17 Preparing for power outages
18 Renewable or alternative energy sources
19 System or infrastructure improvements
20 Billing or energy assistance
21 Being wattsmart
22 Blue Sky Renewable Energy
23 Solar energy generation
99 Other, Specify _____
97 Don't remember/Don't know

Q8A During the past six months, do you recall seeing, hearing or reading the phrase "being wattsmart?"

1 Yes
2 No →**SKIP TO Q9**

Q8B Which, if any, companies are associated with the phrase "wattsmart?"

99 RECORD:_____

Q9 In the past year, have you taken any actions or changed anything in your household to save energy?

1 Yes
2 No → **SKIP TO Q12**
3 Prefer not to say →**SKIP TO Q12**

Q10 What actions have you taken in your home in order to save energy?

99 RECORD:_____

DO NOT DISPLAY; FOR CODING USE ONLY
11 Add insulation to your attic, roof, or walls
12 Adjust thermostat
13 Generally conserve or use less energy
14 Install an energy-efficient air conditioner or furnace
15 Install energy-efficient appliances
16 Install energy-efficient doors or windows
17 Insulate or caulk around windows or doors
18 Insulate water heater, pipes, or air ducts
19 Tune up your furnace or water heater
20 Turn off lights when leaving a room
21 Unplug appliances when away from home
22 Use energy-saving light bulbs
99 Other:_____
97 Don't know

Q11 What are the main reasons you took steps to conserve energy in your home?

99 RECORD:_____

DO NOT DISPLAY; FOR CODING USE ONLY11 To protect the environment
12 To reduce need for new energy infrastructure
13 To save money
14 Heard ads encouraging energy conservation
15 To make my home more comfortable
16 Needed to replace an old or broken appliance
17 To take advantage of a rebate or tax credit
99 Other:_____
97 Don’t know/ none

Q12 How important is it for utility companies to offer customers programs to help conserve energy?

1 Not at all important
2 Not very important
3 Somewhat important
4 Very important
7 Don't know

Q13 What sources do you typically rely on for information about **news and current events**?

Select all that apply.

11 Billboard
12 Bill insert
13 Direct mail
14 Family, friends, co-workers
15 Magazine
16 Newspaper
17 Radio
18 Social networking (e.g., blogs, Facebook, Twitter)
19 Television
20 Trade publication
21 Website (Rocky Mountain Power)
22 Website (other than Rocky Mountain Power)
23 Email
99 Other, Specify _____
97 Don't remember/Don't know

Q14 What sources do you typically rely on for information about **Rocky Mountain Power**?
Select all that apply.

11 Billboard
12 Bill insert
13 Direct mail
14 Family, friends, co-workers
15 Magazine
16 Newspaper
17 Radio
18 Social networking (e.g., blogs, Facebook, Twitter)
19 Television
20 Trade publication
21 Website (Rocky Mountain Power)
22 Website (other than Rocky Mountain Power)
23 Email
99 Other, Specify _____
97 Don't remember/Don't know

Q15 How interested do you think Rocky Mountain Power is about helping you save energy? Please use a 1-5 scale. One means *not at all interested*. Five means *very interested.*

1 Not at all interested
2
3
4
5 Very interested
97 Don't know

Q16 Which one of the following would you most likely turn to first for energy-efficiency information? **[ROTATE 1 – 5]**

1 Rocky Mountain Power
2 Dominion Energy (Questar Gas)
3 Home improvement retailer
4 State Department of Energy
5 Federal government
99 Other, Specify _____
97 Don't know

Q16a Which one of the following would you most likely turn to first for renewable energy information? **[ROTATE 1 – 5]**

1 Rocky Mountain Power
2 Dominion Energy (Questar Gas)
3 Home improvement retailer
4 State Department of Energy
5 Federal government
6 Solar Installer (Name: _____)
99 Other, Specify _____
97 Don't know (DNR)

Q17 Using a 0-10 scale, where 0 means not at all satisfied, and 10 is completely satisfied, how satisfied are you overall with Rocky Mountain Power? You can use any number from 0-10.

99 RECORD RATING _____
97 Don't know/refused

Q18 Compared to a year ago, has your satisfaction with Rocky Mountain Power increased, stayed the same or decreased?

1 Decreased
2 Stayed the same → **SKIP Q19**
3 Increased
97 Don't know/refused → **SKIP Q19**

Q19 And why do you say your satisfaction has **(INCREASED, OR DECREASED FROM Q18)**?

99 RECORD:_____

We are about done. We have just one more question to help us categorize your responses.

Q20 Which of the following best describes your annual household income?

11 Less than $20,000
12 $20,000 to $39,999
13 $40,000 to $59,999
14 $60,000 to $89,999
15 $90,000 to $129,999
16 $130,000 to $199,999
17 $200,000 or more
97 Prefer not to say

EXIT

Thank you very much for your help with this important research! We appreciate you taking the time to provide us with your feedback.

For questions about the survey or data collection, please email rockymountainpower@mdcinvite.com.

To submit your survey responses, please click the >>> button below.

IP NOTE: DIRECT RESPONDENTS TO WWW.ROCKYMOUNTAINPOWER.NET

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Exhibit B

Be wattsmart, Begin at Home

Program Report

2018

NEF

BE *WATTS*MART, BEGIN AT HOME

UTAH

Program Report

Prepared for:

Michael S. Snow, Manager, Regulatory Projects

Barbara Modey, Customer and Community Communications

Rocky Mountain Power

1407 W North Temple

Suite 330

Salt Lake City, UT. 84116

Prepared by:

Patti Clark

Program Director

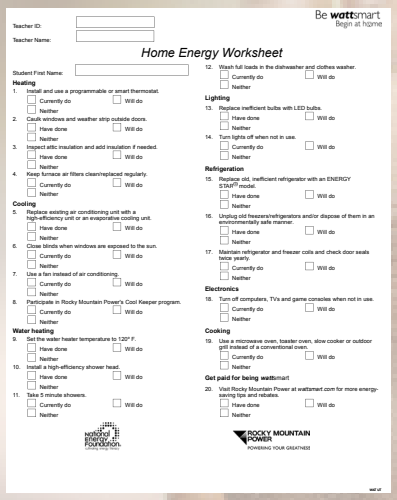
National Energy Foundation

4516 South 700 East, Suite 100

Salt Lake City, UT 84107

February 25, 2019

Savings



Be wattsmart
Begin at home

Teacher ID:

Teacher Name:

Home Energy Worksheet

Student First Name:

Heating

1. Install and use a programmable or smart thermostat.
   ☐ Currently do ☐ Will do ☐ Have done ☐ Neither
2. Caulk windows and weather strip outside doors.
   ☐ Currently do ☐ Will do ☐ Have done ☐ Neither
3. Inspect attic insulation and add insulation if needed.
   ☐ Currently do ☐ Will do ☐ Have done ☐ Neither
4. Keep furnace air filters clean/replaced regularly.
   ☐ Currently do ☐ Will do ☐ Neither

Cooling

5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.
   ☐ Have done ☐ Will do ☐ Neither
6. Close blinds when windows are exposed to the sun.
   ☐ Currently do ☐ Will do ☐ Neither
7. Use a fan instead of air conditioning.
   ☐ Currently do ☐ Will do ☐ Neither
8. Participate in Rocky Mountain Power's Cool Keeper program.
   ☐ Currently do ☐ Will do ☐ Neither

Water heating

9. Set the water heater temperature to 120° F.
   ☐ Have done ☐ Will do ☐ Neither
10. Install a high-efficiency shower head.
    ☐ Have done ☐ Will do ☐ Neither
11. Take 5 minute showers.
    ☐ Currently do ☐ Will do ☐ Neither
12. Wash full loads in the dishwasher and clothes washer.
    ☐ Currently do ☐ Will do ☐ Neither

Lighting

13. Replace inefficient bulbs with LED bulbs.
    ☐ Have done ☐ Will do ☐ Neither
14. Turn lights off when not in use.
    ☐ Currently do ☐ Will do ☐ Neither

Refrigeration

15. Replace old, inefficient refrigerator with an ENERGY STAR® model.
    ☐ Have done ☐ Will do ☐ Neither
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.
    ☐ Have done ☐ Will do ☐ Neither
17. Maintain refrigerator and freezer coils and check door seals twice yearly.
    ☐ Currently do ☐ Will do ☐ Neither

Electronics

18. Turn off computers, TVs and game consoles when not in use.
    ☐ Currently do ☐ Will do ☐ Neither

Cooking

19. Use a microwave oven, toaster oven, slow cooker or outdoor grill instead of a conventional oven.
    ☐ Currently do ☐ Will do ☐ Neither

Get paid for being wattsmart

20. Visit Rocky Mountain Power at wattsmart.com for more energy-saving tips and rebates.
    ☐ Have done ☐ Will do ☐ Neither

national energy foundation

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

wat ut

Home Energy Worksheets

– Returned: 9,205 –

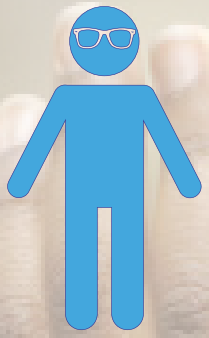
– 72% –

Teacher Packets

– Returned: 417 –

– 83% –

Participants

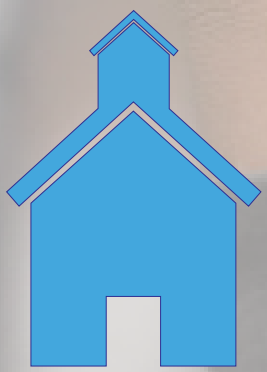


Students

– 12,871 –

Teachers

– 504 –



Schools

– 138 –

Table of Contents

Program Overview

Program Description

Be *watt*smart, Begin at home, an energy efficiency education program, is a collaborative partnership between Rocky Mountain Power and the National Energy Foundation (NEF). This unique and interactive program teaches the importance of energy and natural resources and their impact on the environment. The objective is to expand and promote energy awareness through a school-based education program which encourages Utah students and teachers to change behaviors which will impact the energy consumption in their homes and community. Teachers are also provided teaching materials to support further classroom instruction on this valuable message.

The program expanded in 2018 to include an additional ten Utah schools within the Rocky Mountain Power territory. This increased the total number of schools in Utah to 138 schools.

Program Administration

Be *watt*smart, Begin at home is administered by NEF, a non-profit organization (established in 1976) dedicated to the development, dissemination and implementation of supplementary educational materials, programs and services relating primarily to energy, energy safety, the environment and natural resources. Our mission remains constant, to cultivate and promote an energy literate society. NEF is pleased to report on activities of the Be *watt*smart, Begin at home energy efficiency education program conducted during the 2018 – 2019 school year.

Anne Lowe, Vice President – Operations, oversees program organization. Gary Swan, Vice President – Development, oversees contract accounting. Patti Clark, Program Director, is responsible for overseeing and implementing the scope of work and Diane Baum is responsible for scheduling the presentations. A team of trained and seasoned presenters brought the interactive, hands-on program to Utah schools from September 24 through November 7, 2018.

Building Collaborations

The Utah State Office of Education's Core Curriculum for fifth grade correlates well to the content of Be *watt*smart, Begin at home. Teachers appreciated the collaborative efforts to align program components to their learning standards. Curriculum correlations were provided to teacher participants in the *Teacher Guide* delivered to each teacher prior to the presentation date.

Program Implementation

During the month of May 2018 an invitation to register for the fall 2018 program was sent via email to all teachers that had participated in the 2017 program. In August and September, Diane Baum made phone calls to all unregistered schools. Teacher questions were addressed and highlights of the program content with an emphasis on how the program aligns with Utah content standards were reviewed.

Program Registration

Registration for the program was online at wattsmart.com/begin. Each registered school was checked against the qualified school list before email and phone communications were made with teachers to determine optimum presentation dates and student numbers.

After registration was qualified, a series of email communications with teachers, was sent automatically by the program registration website. The website calculated *Home Energy Worksheet* returns as well as earned gift card levels and communicated this information to the participating teachers. Later communications were customized through programming to be sent only to teachers needing a reminder to return their program documents.

Be *watt*smart, Begin at home Presentation

Be *watt*smart, Begin at home presentations were given during September, October and the first week of November 2018. The presentation featured a custom Keynote slideshow that brought energy concepts to the forefront of Utah education. The presentation focused on important concepts, such as natural resources, electrical generation, the energy mix used by Rocky Mountain Power to generate electricity and tips for energy efficiency in the home.

The presentation provided interactive activities that involved and engaged the audience. Students participated in making a human electrical circuit, during which they learned key core curriculum concepts such as insulators and conductors of electricity and electrical generation. Student volunteers used props to demonstrate the process of electrical generation for their classmates. All students reviewed material learned with an "Energy Lingo" review activity at designated points throughout the presentation. To help students remember energy efficiency tips, participants viewed "Caitlynn Power" energy efficiency video vignettes produced by PacifiCorp. These videos were new to the program this year and were well received by both teachers and students. At the end of each short video, students learned a rhyme about Caitlyn's wise energy choices to help them remember the concept.

The last portion of the presentation communicated the importance of the program take-home pieces. These documents enabled households to participate in energy education along with students.

Program Materials

A *Parent Letter* was provided to explain the importance of Be *watt*smart, Begin at home. In addition, students took home a *Student Guide* and *Home Energy Worksheet* to share with their families. Students who returned their worksheet received an LED nightlight featuring the Rocky Mountain Power logo as a reward.

Educators were also given helpful energy educational materials. Each teacher participant was provided a custom Be *watt*smart, Begin at home folder. The folder contained a custom *Teacher Guide* with additional information and activities to supplement and continue energy education in the classroom. Also, in the folder were two NEF instructional posters, *Energy Efficiency* and *Electricity Serves Our Community.*

A program *Implementation Steps Flier* assisted teachers in carrying out the program. It also gave simple steps for successfully returning *Home Energy Worksheets* and the sponsor *Thanks a "Watt" Card* in the postage paid envelope provided in the *Teacher Materials Folder*. A *Rewarding Results Flier* gave information concerning the gift card teacher participants would receive for returning their student surveys. Educators received a $50 gift card for an 80% return, or a $25 gift card for a 50 – 79% return by the December 5, 2018 deadline.

Program Accomplishments – Fall 2018

- 138 Be *watt*smart, Begin at home presentations
- 12,871 students and families reached
- 504 Utah teachers reached
- 72% student *Home Energy Worksheet* surveys return
- $50 gift cards delivered to 361 Utah teachers
- $25 gift cards delivered to 40 Utah teachers

Program Improvements - Fall 2018

- Updated all program materials with new Rocky Mountain Power style guide and look
- New video vignettes entitled "Caitlin Power" produced by sponsor for presentation
- Updated the *Energy Efficiency* instructional poster
- Added ten additional schools to the program

- New LED nightlight incentive with Rocky Mountain Power logo
- Added online *Home Energy Worksheet* option to program
- *Program Evaluation* completed online

Program Attachments – Fall 2018

- Fall 2018 Participating Schools
- Program Promotions
- Program Documents
    - Keynote Presentation
    - *Teacher Implementation Steps Flier*
    - *Rewarding Results Flier*
    - *Student Guide*
    - *Teacher Guide*
    - Lingo Card
    - *Parent Letter*
- *Teacher Evaluation* Compilation
- *Home Energy Worksheet*
- *Home Energy Worksheet* Summary – Rocky Mountain Power
- Wise Energy Behaviors in Rocky Mountain Power Utah Homes
- Sampling of Thanks a "Watt" Cards

Attachments

Fall 2018 Participating Schools

School Name	School Address	City	State	Zip
Academy Park Elementary	4580 Westpoint Drive	West Valley	UT	84120
Alta View Elementary	917 Larkspur Dr.	Sandy	UT	84094
Altara Elementary	800 E 11000 South	Sandy	UT	84094
Armstrong Academy	5194 Highbury Parkway	West Valley	UT	84120
Backman Elementary	601 North 1500 West	Salt Lake City	UT	84116
Bates Elementary	850 E 3100 North	Ogden	UT	84414
Birch Creek Elementary	675 West 220 North	Smithfield	UT	84335
Blackridge Elementary	14131 S. Rosecrest	Herriman	UT	84096
Bluffdale Elementary	14323 S 2700 West	Bluffdale	UT	84065
Bonneville Elementary	1145 South, 1900 East	Salt Lake City	UT	84108
Butler Elementary	2700 E. 7000 South	Cottonwood Heights	UT	84121
Butterfield Canyon	6860 W Mary Leizan Lane	Herriman	UT	84096
Canyon Creek Elementary	755 South 1100 West	Farmington	UT	84025
Canyon View Elementary	3050 Bengal Blvd	Cottonwood Heights	UT	84121
Cedar Ridge Elementary	4501 W Cedar Hills Drive	Cedar Hills	UT	84062
Century Elementary	5820 N 4800 West	Bear River City	UT	84301
Channing Hall Charter School	13515 South 150 East	Draper	UT	84020
Columbia Elementary	3505 W 7800 South	West Jordan	UT	84088
Cook Elementary	1175 S 1350 West	Syracuse	UT	84075
Copper Canyon Elementary	8917 Copperwood Drive	West Jordan	UT	84081
Cottonwood Elementary	5205 South Holladay Blvd.	Holladay	UT	84117
Crescent Elementary	11100 S 230 East	Sandy	UT	84070
Crestview Elementary - Holladay	2100 Lincoln Lane	Holladay City	UT	84124
Crestview Elementary - Layton	185 West Golden Ave	Layton	UT	84041
D. T. Orchard Elementary	6744 West 3800 South	Salt Lake City	UT	84128
East Elementary - Cedar	255 E. College Ave	Cedar City	UT	84720
East Layton Elementary	2470 East Cherry Lane	Layton	UT	84040
East Midvale	6990 S. 300 East	Midvale	UT	84047
Eastlake Elementary	4389 W Isla Daybreak Rd	South Jordan	UT	84009
Eastwood Elementary School	3305 South Wasatch Blvd.	SLC	UT	84209
Elk Meadows Elementary	3448 West 9800 South	South Jordan	UT	84095
Enoch Elementary	4701 Wagon Wheel	Enoch	UT	84721
Falcon Ridge Elementary	6111 W 7000 South	West Jordan	UT	84081
Farnsworth Elementary	3751 South Sunnyvale Drive	West Valley	UT	84120
Fielding Elementary School	50 W. Main	Fielding	UT	84311
Fox Hollow Elementary	6020 W. 8200 South	West Jordan	UT	84081
Foxboro Elementary	587 N. Foxboro Drive	North Salt Lake	UT	84054
Franklin Elementary	1115 West 300 South	Salt Lake City	UT	84104
Freedom Elementary	10326 N 6800 West	Highland	UT	84003
Gateway Preparatory School	201 E Thoroughbred Way	Enoch	UT	84721
Geneva Elementary	665 West 400 North	Orem	UT	84057
Goshen Elementary	60 N Center	Goshen	UT	84633
Granite Elementary	9760 South 3100 East	Sandy	UT	84092
Grantsville Elementary	50 South Park	Grantsville	UT	84029
Green Acres Elementary	640 E. 1900 North	North Ogden	UT	84114

School Name	School Address	City	State	Zip
Gunnison Valley Elementary	560 S 300 East	Gunnison	UT	84634
Harry S Truman Elementary	4639 S. 3200 West	West Valley City	UT	84119
Hawthorn Academy	9066 S. 2200 West	West Jordan	UT	84088
Hawthorne Elementary	1675 S. 600 East	SLC	UT	84105
Heritage Elementary	925 W 3200 South	Nibley	UT	84321
Highland Park Elementary	1738 E 2700 South	SLC	UT	84106
Hill Field Elementary	389 South 1000 East	Clearfield	UT	84015
Hillside Elementary	4283 South 6000 West	West Valley	UT	84128
Hobble Creek Elementary	1145 East 1200 North	Mapleton	UT	84664
Intermountain Christian School	6515 S Lion Lane	Salt Lake City	UT	84121
Jeremy Ranch Elementary	3050 Rasmussen Road	Park City	UT	84098
Jim Bridger Elementary	5368 West Cyclamen Way	West Jordan	UT	84081
Jordan Ridge Elementary	2636 W. 9800 South	South Jordan	UT	84095
Kaysville Elementary	50 North 100 East	Kaysville	UT	84037
Legacy Elementary	28 E. 1340 North	American Fork	UT	84003
Liberty Elementary	1085 S Roberta St. (250 E)	Salt Lake City	UT	84111
Lincoln Academy	1582 W. 3300 North	Pleasant Grove	UT	84062
Lincoln Elementary	550 E. Canfield Dr.	Ogden	UT	84404
Lindon Elementary	30 Main Street	Lindon	UT	84042
Lomond View Elementary	3644 North 900 West	Ogden	UT	84414
Lone Peak Elementary	11515 High Mesa Drive	Sandy	UT	94092
Magna Elementary	3100 S. 8500 West	Magna	UT	84044
Mapleton Elementary	120 West Maple Street	Mapleton	UT	84664
Maria Montessori Academy	2505 N 200 East	N. Ogden	UT	84414
Meadowbrook Elementary	700 N 325 West	Bountiful	UT	84010
Meadowlark Elementary	497 N. Morton Drive	Salt Lake City	UT	84116
Midland Elementary	3100 West 4800 South	Roy	UT	84067
Monroe Elementary	4450 West 3100 South	West Valley	UT	84120
Monte Vista Elementary	11121 S. 2700 West	South Jordan	UT	84095
Morningside Elementary	4170 South 3000 East	Salt Lake	UT	84124
Mount Mahogany Elementary	618 N 1300 West	Pleasant Grove	UT	84062
Mountain Shadows Elementary	5255 W 7000 South	W Jordan	UT	84081
Mountain View Elementary	1380 S Navajo Street	SLC	UT	84104
Municipal Elementary	5775 S 2200 W	Roy	UT	84067
Newman Elementary	1269 N Colorado St.	Salt Lake City	UT	84116
North elementary school	550 West 200 North	Cedar city	UT	84720
North Park Elementary - Roy	4046 S. 2175 West	Roy	UT	84067
North Park Elem - Tremonton	50 East 700 North	Tremonton	UT	84337
Oak Hills Elementary School	1235 E 600 South	Bountiful	UT	84010
Oak Hollow Elementary	884 East Park School Rd	Draper	UT	84020
Orchard Hills Elementary	168 610 South	Santaquin	UT	84655
Orem Elementary	450 West 400 South	Orem	UT	84058
Overlake Elementary	2052 N 170 West	Tooele	UT	84074
Panguitch Elementary	110 S 100 West	Panguitch	UT	84759
Park Lane Elementary	9955 South 2300 East	Sandy	UT	84092
Parkside Elementary	2262 North1500 West	Clinton	UT	84015

School Name	School Address	City	State	Zip
Parkview Elementary	970 Emery Street	Salt Lake City	UT	84104
Peruvian Park Elementary	8425 S 1545 E	Sandy	UT	84093
Pioneer Elementary	250 N. 1600 W.	Ogden	UT	84404
Providence Hall Elementary	4796 W Patriot Ridge Dr.	Herriman	UT	84096
Quest Academy	4862 W 4000 S	West Haven	UT	84401
River Heights Elementary	780 East 600 South	River Heights	UT	84321
Riverside Elementary	8737 S 1220 West	West Jordan	UT	84088
Robert Frost Elementary	3444 W 4400 S.	West Valley City	UT	84119
Rolling Meadows Elementary	2950 Whitehall Dr.	West Valley City	UT	84119
Rose Creek Elementary	12812 South 3600 West	Riverton	UT	84065
Rose Park Elementary	1105 West 1000 North	Salt Lake City	UT	84116
Rose Springs Elementary	5349 N Insbrook Place	Stansbury Park	UT	84074
Rosecrest Elementary	2420 Fisher Lane	Salt Lake City	UT	84109
Roy Elementary	2888 W. 5600 S.	Roy	UT	84067
Sand Springs Elementary	242 N 3200 W	Layton	UT	84041
Sandy Elementary	8725 S. 280 E.	Sandy	UT	84070
Santaquin Elementary	25 S 400 W Street	Santaquin	UT	84655
Silver Crest Elementary	12937 South Elementary Dr.	Herriman	UT	84096
South Elementary	499 West 400 South	Cedar City	UT	84720
South Jordan Elementary	11205 S Black Cherry Way	South Jordan	UT	84095
Sprucewood Elementary	12025 South 1000 East	Sandy	UT	84094
Summit Elementary	80 West Center Str.	Smithfield	UT	84335
Summit Academy - Draper	1285 E 13200 S	Draper	UT	84020
Summit Academy - Bluffdale	1940 West 14400 South	Bluffdale	UT	84065
Summit Academy Independence	15327 S. Noell Nelson Dr.	Bluffdale	UT	84065
Sunrise Elementary	1520 E 11265 S	Sandy	UT	84092
Taylor Canyon Elementary	2130 Taylor Avenue	Ogden	UT	84401
Three Mile Creek Elementary	2625 South 1050 West	Perry	UT	84302
Three Peaks Elementary	1685 W Midvalley Road	Enoch	UT	84721
Timpanogos Academy	70 South 100 East	Lindon	UT	84042
Uintah Elementary	1571 East 1300 South	SLC	UT	84105
Vae View Elementary	1750 West 1600 North	Layton	UT	84041
Valley View Elementary	2465 West 4500 S	Ogden	UT	84067
Vineyard Elementary	620 E Holdaway Rd	Vineyard	UT	84058
Voyage Academy	1891 N 1500 W	Clinton	UT	84015
Wasatch Elementary	30 R Street	Salt Lake City	UT	84103
West Bountiful Elementary	750 West 400 North	West Bountiful	UT	84087
West Point Elementary	3788 W. 300 N.	West Point	UT	84015
West Valley Elementary	6049 West Brud Drive	West Valley City	UT	84128
Westbrook Elementary	3451 W 6200 S	Taylorsville	UT	84129
Westland Elementary	2925 W. 7180 S	West Jordan	UT	84084
Whittier Elementary	1600 S 300 E	Salt Lake City	UT	84115
Willow Springs Elementary	13288 S Lone Rock Drive	Draper	UT	84020
Woods Cross Elementary	745 West 1100 South	Woods Cross	UT	84087

Program Promotions

Be ***watt***smart
Begin at home

Be *watt*smart, Begin at home reinforces electricity learning standards in an engaging and interactive assembly. Participating teachers receive free energy education posters, activities and student materials as well as the chance to receive a Visa® gift card of up to $50, depending on participation.

Presentations will be held from September 17 to November 9, 2018. Sign up today at ***watt*smart.com/begin**.

National Energy Foundation
ROCKY MOUNTAIN POWER

Program Documents

Keynote Presentation

Be **watt**smart
Begin at home

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

We have the power to learn.

Learn about natural resources.

Learn how we make and use energy.

Learn how to use energy wisely by being **watt**smart.

Play energy LINGO.

POWERING YOUR GREATNESS

What is **ENERGY**?

POWERING YOUR GREATNESS

ENERGY is the ability to do WORK.

POWERING YOUR GREATNESS

Natural resources

A **natural resource** is anything we use that comes from the earth or the sun.

POWERING YOUR GREATNESS

Renewable and nonrenewable resources

POWERING YOUR GREATNESS

Renewable resources




POWERING YOUR GREATNESS

Nonrenewable resources




POWERING YOUR GREATNESS

Let's LINGO

Find the words on your LINGO board that match these definitions:

- The ability to do work. **Energy**
- A resource often found with oil. **Natural gas**
- Something useful from the earth or the sun. **Natural resource**

POWERING YOUR GREATNESS

Electricity

- The electricity we use is not a natural resource.
- It is made from natural resources.
- Since electricity is made from natural resources, it is called a secondary energy source.
- Power lines carry the electricity from where it is generated to where it is used.

POWERING YOUR GREATNESS

Rocky Mountain Power

Electric generation by energy source

Coal 58.89% 

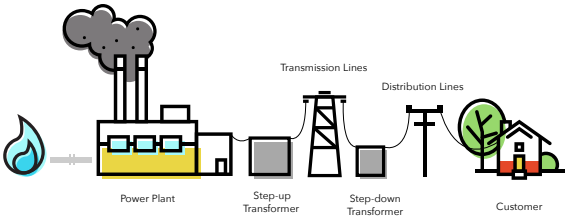
Renewables 19.95%    

Natural gas 10.57% 

Other sources 10.59%

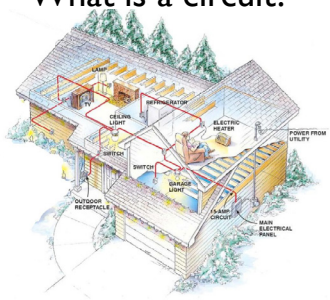
POWERING YOUR GREATNESS

Electric generation



POWERING YOUR GREATNESS

What is a circuit?



Let's make a circuit.

What things do we need to make an electrical circuit?

- An **energy source**, such as a battery.
- A **conductor** to carry electrical energy, such as wire.
- A **load** to use the energy, such as a light bulb.

Open circuit:
No electricity can flow

Closed circuit:
Electricity can flow

Energy efficiency

Energy efficiency

- Using less energy to accomplish the same amount of work.

Technology

- Install energy-efficient products, appliances and devices.

Behavior

- Use less energy through wise behaviors that conserve energy.

Let's LINGO

Find the words on your LINGO board that match these definitions:

- Using less energy to accomplish the same amount of work. **Energy efficiency**
- An energy resource that is capable of being renewed or is replaceable. **Renewable**
- Fossil fuels – such as coal, natural gas and oil – are considered **Nonrenewable** resources.
- A resource used to produce gasoline. **Oil**

Caitlynn Power

Caitlynn Power

Caitlynn Power

Home heating and cooling

What can you do to be ***watt***smart?

- Use a fan instead of an air conditioner.

Remind your parents to:

- Install a smart or programmable thermostat.
- Change furnace filters.
- Insulate your home and seal air leaks.

Caitlynn Power

Caitlynn Power

Water heating

What can you do to be ***watt***smart?

- Take shorter showers.
- Turn off the water when brushing teeth.
- Set your **water heater** to 120°F.
- Install an energy-efficient showerhead.

What else can you do to be ***watt***smart?

- Use advanced power strips to reduce **phantom** loads.
- Use a microwave oven when possible.
- Use lids to shorten **cooking** time.

The 3 Rs

What can you do to be ***watt***smart?

- **Reduce**
  – use less of something.
- **Reuse**
  – use something again.
- **Recycle**
  – make something into another new thing.

POWERING YOUR GREATNESS

Let's LINGO

Find the words on your LINGO board that match these definitions:

- A light that can last 25 times longer than an incandescent. **LED**
- Electricity consumed by an electronic device while it is turned off or in standby mode. **Phantom load**
- Using a toaster oven or microwave for **Cooking** is more energy-efficient than using the oven.
- Set this to 120°F for a comfortable shower. **Water heater**
- To use less of something. **Reduce**

POWERING YOUR GREATNESS

What have we done today?

- Learned why energy is important.
- **Discussed** energy and where it comes from.

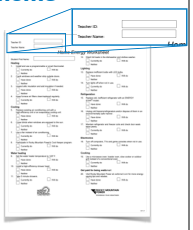
POWERING YOUR GREATNESS

Engage in energy efficiency

Review your **Be *watt***smart**, Begin at home** booklet with your parent(s).

Complete the *Home Energy Worksheet* either online or return it to your teacher to receive an energy-efficient nightlight.

Sign the *Thanks A "Watt" Card* and your teacher will mail it along with your worksheet.



POWERING YOUR GREATNESS

YOU *have the* ***power*** *to be* ***watt***smart**!**

Visit **wattsmart.com**
for more energy-saving ideas.

POWERING YOUR GREATNESS



Implementation Steps

1. Verify that you have received each of the following:
   - *Teacher Materials Folder*
   - Your **Be wattsmart, Begin at home** *Teacher Guide*
   - *Home Energy Worksheets* for you and your students
   - **Be wattsmart, Begin at home** student booklets
   - Set of *Parent Letters*
   - *Watt*smart nightlights (student incentive for completing the *Home Energy Worksheet*)
2. Distribute to each student a:
   - **Be wattsmart, Begin at home** student booklet
   - *Home Energy Worksheet*
   - *Parent Letter*
3. Reward each student who completes a *Home Energy Worksheet,* either online or paper, with a *watt*smart nightlight.
4. Have each student sign the *Thank You Card* to Rocky Mountain Power.
5. Mail in the self-addressed postage-paid envelope:
   - Any completed *Home Energy Worksheets*
   - The *Thank You Card*

To thank you for postmarking your envelope by December 5, 2018, you will receive a VISA® gift card for classroom use.
80 percent or greater return of registered students' *Home Energy Worksheets* **= $50**
50 – 79 percent return of registered students' *Home Energy Worksheets* **= $25**

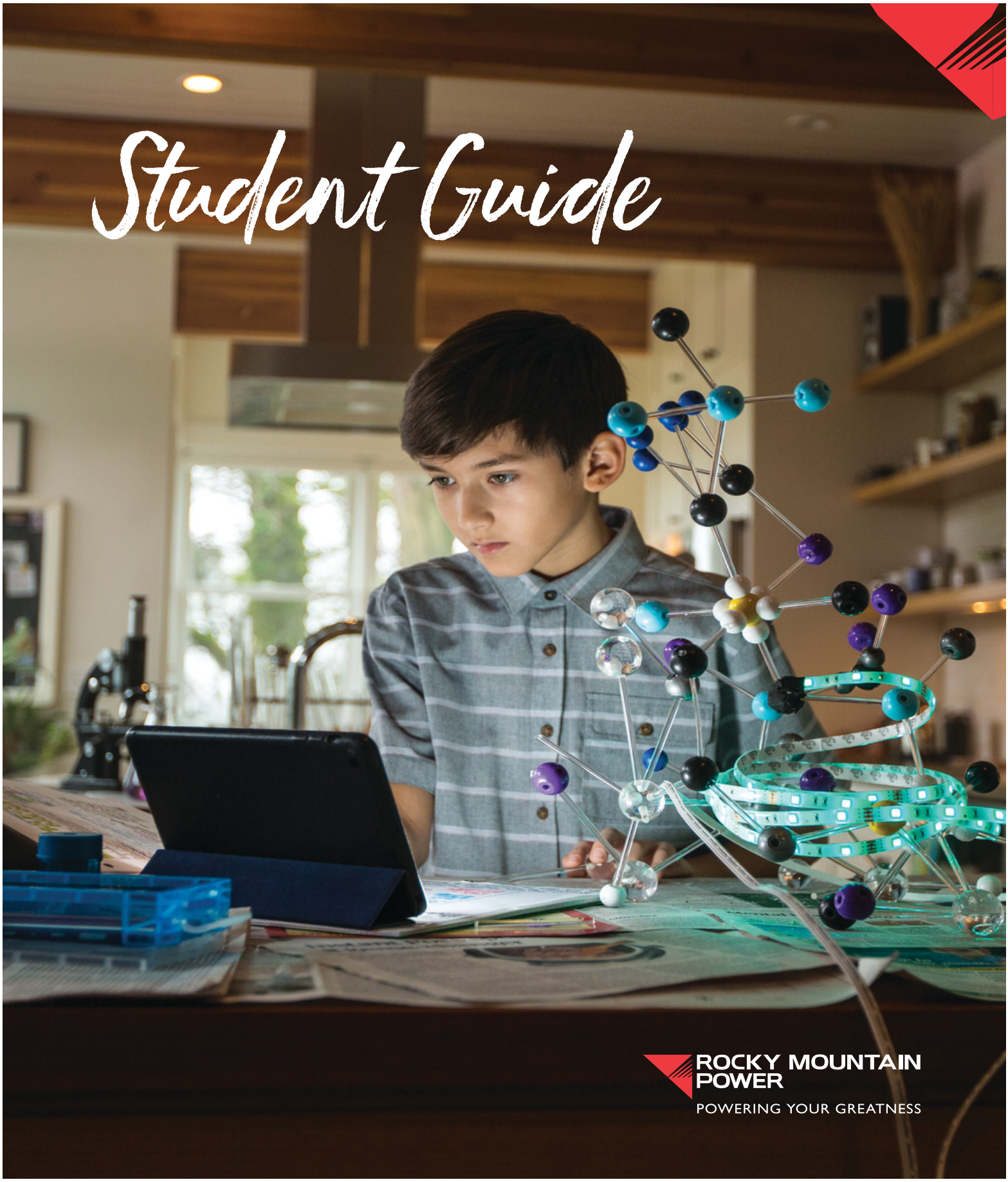
For questions, or additional information, please email Diane Baum at **diane@nef1.org**.

National Energy Foundation®
cultivating energy literacy

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

UT


Attention Teachers
Help us out by mailing your student *Home Energy Worksheets* and receive a **$25 – $50** VISA® gift card for classroom use, depending upon participation.
80 percent or greater return of registered students' *Home Energy Worksheets* = $50
50 – 79 percent return of registered students' *Home Energy Worksheets* = $25
Postmark due date:
December 5, 2018
Offer open only to teachers participating in Be wattsmart, Begin at home. Certain restrictions may apply. Good while grant funding is in place. *Home Energy Worksheets* must be completed for eligibility. For more information, contact Diane Baum at Diane@nef1.org.
NEF
ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS
© 2018 Rocky Mountain Power



Dear Parents,

The **Be wattsmart, Begin at home** program assists teachers and students to learn about energy, discuss important energy topics and engage in energy efficiency actions now. Your child has participated in a presentation addressing natural resources, energy basics and energy efficiency. Your participation in this program will help you be wattsmart, enhance energy efficiency in your home and help save money on your utility bills. Here are three simple ways that you can help:

- Review this **Be wattsmart, Begin at home** booklet with your child.
- Assist your child with completing the activities on Page 7.
- Have your child complete the ***Home Energy Worksheet*** online or return it to his or her teacher.

Thank you for being *watt*smart and for your participation!

What's inside?

This booklet is divided into three sections that will give you the power to:

1. Learn about sources of energy, how they get to your home and why they are important in your life.
2. Discuss wattsmart energy efficiency tips that will help you use energy wisely and save money.
3. Engage in energy efficiency by determining how energy can be saved in your home through a simple audit activity and the *Home Energy Worksheet*.

About Rocky Mountain Power

Rocky Mountain Power is committed to the delivery of reliable electric service that's safe, low-cost and increasingly from clean, renewable resources. Serving more than 1 million customers in Utah, Idaho and Wyoming, the company is one of the lowest cost energy producers in the nation. Rocky Mountain Power is moving toward a sustainable energy future that includes increased use of solar, wind and other renewable resources; and provides customers with more choices to meet their energy needs.

About the National Energy Foundation

The National Energy Foundation (NEF) is a 501 (c)(3) nonprofit organization, founded in 1976. It is dedicated to increasing energy literacy through the development, distribution and implementation of educational programs and materials. These resources relate primarily to energy, natural resources, energy efficiency, energy safety and the environment. Concepts are taught through science, math, art, technology and writing. NEF recognizes the importance of educating individuals about energy so they can make informed decisions about energy issues and use.

I have the *power* to be ***watt***smart.

- Being wattsmart is all about taking steps to save energy – which in turn can help you save money.
- You have the power to become more energy efficient. Rocky Mountain Power can help with wattsmart programs and incentives for homes and businesses. Saving energy also saves money and is good for the environment.

I have the power to *learn.*

The importance of energy:

Energy is the ability to do work or produce change. Virtually everything we do or use at work and home uses energy.

- Heating and cooling systems
- Computers
- Electronic equipment such as gaming and entertainment systems and TVs
- Charging electronic tablets, music players and cell phones
- Appliances
- Lights
- Food storage and preparation
- Security systems

Where does energy come from?

Our energy comes from natural resources. There are two general categories of natural resources – nonrenewable and renewable. A nonrenewable resource is not capable of being renewed, replaced or takes a very long time to replace. A renewable resource is capable of being renewed or replaced.

Primary natural resources are used to convert energy into electricity. They can be either nonrenewable or renewable.

Nonrenewable examples are:

Coal is the most abundant nonrenewable energy source in the world. There is an estimated 129 year supply remaining.

Oil can be both refined and unrefined. Refined oil is transformed into petroleum products and unrefined oil remains as crude oil.

Natural Gas is usually captured alongside oil deposits and is a major source for electrical generation.

Uranium is the fuel most widely used by nuclear plants. Nuclear energy is the energy inside the nucleus (core) of the atom of uranium.

Renewable examples are:

Solar is energy from the sun.

Wind is energy from the wind captured by a group of wind turbines (generators).

Geothermal is energy derived from the heat of the earth.

Hydropower is energy from water that generates electricity.

Secondary energy resources are created by using nonrenewable and renewable resources of energy.

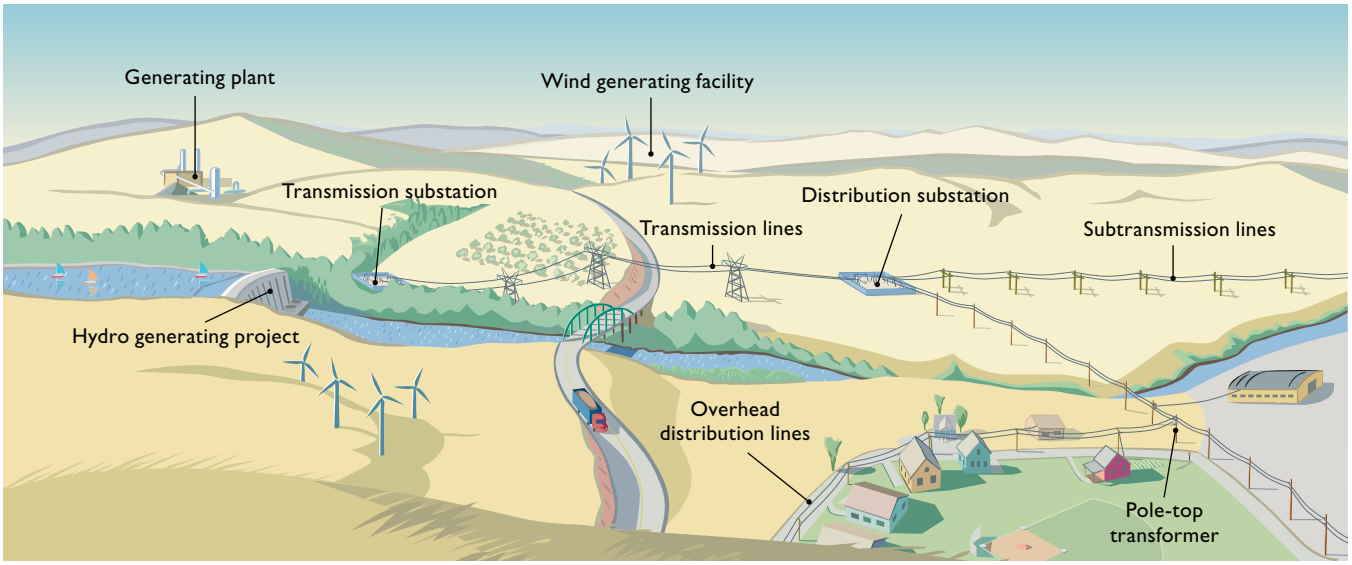
Electricity is the most abundant **secondary energy resource** used. It is the flow of electrical power or charge. It occurs in nature as lightning and static electricity. A generator uses energy resources to create mechanical energy that is then converted into electrical energy.

Energy efficiency

Energy efficiency is using less energy to accomplish the same amount of work – we call it being wattsmart. There are many technologies we can use today that decrease the amount of energy needed to do work. Good examples are ENERGY STAR® products and LED lighting.

You can save even more money if you start thinking about using energy wisely. Try turning off the lights when you leave the room, take shorter showers or turn off your electronics when you are not using them.

Using electricity



For more than 100 years, electricity has made our homes more comfortable and industries more productive. Today electricity is powering a world of electronics.

How is electricity generated? It begins with a fuel that heats water and turns it to steam. The steam drives the turbine that turns the generator motor to produce electricity.

How is electricity transmitted? Once the electricity is produced, the current flows from the generator to the power plant transformer where the voltage is increased to boost the flow of the electric current through the transmission lines. The transmission lines transport the electricity to Rocky Mountain Power's substations where the voltage is decreased. Power lines then carry the electricity from the substations to be used in our homes and businesses.

ELECTRICAL GENERATION

Energy Source	Rocky Mountain Power (2017 Basic Fuel Mix)*	United States (U.S. EPA, data)
Natural Gas	10.57%	32%
Coal	58.89%	30%
Nuclear	0.00%	20%
Petroleum	0.00%	1%
Other/misc.	10.59%	0%
Renewables (total)	19.95%	17%
Hydropower	7.09%	7.5%
Wind	8.56%	6.3%
Biomass	0.37%	1.6%
Solar	3.54%	1.3%
Geothermal	0.39%	0.4%

**This information is based on Federal Energy Regulatory Commission Form 1 data. The Rocky Mountain Power "basic fuel mix" is based on energy production and not resource capability, capacity or delivered energy. All or some of the renewable energy attributes associated with wind, solar, biomass, geothermal and qualifying hydro facilities in Rocky Mountain Power's basic fuel mix may be: (a) used in future years to comply with renewable portfolio standards or other regulatory requirements, (b) sold to third parties in the form of renewable energy credits and/or other environmental commodities or (c) excluded from energy purchased. Rocky Mountain Power's basic fuel mix includes owned resources and purchases from third parties.*

I have the power to *discuss* energy use to help save money.

Saving energy happens in two ways. First, you can use less energy through wise behaviors that conserve energy. Second, you can install energy-efficient products, appliances and devices that use less energy to accomplish the same task. Let's talk about the following areas of your home that have the largest potential to save energy.

Home heating and cooling

- Install a programmable thermostat or smart thermostat. Set your thermostat to 78°F or higher in the summer and 68°F or lower in the winter.
- Make sure your house is properly insulated. If you have less than 6 inches of insulation in your attic, you would benefit from adding more.
- You can save 10 percent or more on your energy bill by reducing the air leaks in your home with caulking and weather stripping.

- To help your furnace run more efficiently and cost-effectively, keep your air filters clean.
- For windows with direct sunlight, close your blinds in the summer to keep the heat out. Open them on winter days to let the warmth in.
- Small room fans are an energy-efficient alternative to air conditioning.
- For information about energy-saving programs and cash incentives, visit **wattsmart.com**.

Water and water heating

- Check your faucets for leaks that can cost you hundreds of dollars each year.
- Install a water-efficient showerhead and save as much as $145 a year.
- Set the water heater at 120°F.
- Install faucet aerators to decrease water use.

Lighting

- Let the sun shine in. Use daylight and turn off lights.

- Replace your incandescent bulbs with LEDs (light-emitting diodes) and save $5 to $8 per year per bulb. These bulbs use up to 80 percent less energy than incandescent bulbs and last much longer.
- Use lighting controls such as motion detectors and timers.
- Turn off lights when you leave the room.
- Always use the lowest wattage bulb that still gives you the light you need.
- Keep your light bulbs clean. It increases the amount of light from the bulb and reduces the need to turn on more lights.

Electronics

- Turn off your computer and game consoles when not in use.
- Home electronics are made to turn on and off many times. Always turn them off to save energy.
- Electronics with the ENERGY STAR® label use as much as 60 percent less energy while providing the same performance.
- Beware of phantom loads which continue to draw electricity when they are plugged in but not in use. Examples are telephone chargers, electronic games and television sets.
- Use advanced power strips for household electronics. One button will turn off multiple appliances, which conserves electricity.

Refrigerators and freezers

- When looking to replace your old refrigerator, do so with an ENERGY STAR® model, which requires approximately 40 percent less energy than conventional models and provides energy savings without sacrificing the features you want.
- Clean door gaskets with warm water or a detergent that leaves no residue.

Dishwashers

- Only run dishwashers when full and use the "air dry" or "no heat dry" settings.
- ENERGY STAR® dishwashers use at least 41 percent less energy than the federal minimum standard for energy consumption.

Laundry

- Buy a moisture-sensitive dryer that automatically shuts off when clothes are dry.
- Use a drying rack whenever possible.

Cooking

- Use a microwave oven, toaster oven or slow cooker instead of a conventional oven.
- Use the right-sized pan for the stove top element.
- Cover pans with lids to keep heat from escaping.

Reduce

- Use less.
- Purchase products with little packaging.

Reuse

- Use something again.
- Reuse a box or a grocery bag.

Recycle

- Make something into another new item.
- Participate in the recycling programs in your community.

I have the power to *engage* in energy efficiency.

Parents, be *watt*smart and watch the energy savings add up.

An individual with a combined electric and heating fuel bill of $2,500 per year could save 20 percent or $42/month by using these and other energy efficiency tips. That is like getting a pay raise without having to work harder or longer.

The cost of lighting your home

Take a walk around your home with your family to learn about your lighting.

1. Count the types of bulbs in each room and record in Table 1; then total each column.
2. Transfer the total for each type of lighting into Column A on Table 2.

TABLE 1

Location	Incandescent	CFL	LED
Bedroom 1			
Bedroom 2			
Kitchen			
Dining room			
Living room			
Hallway			
Laundry room			
Family room			
Front porch			
Other			
TOTAL			

3. In Table 2, multiply the numbers in Column A by the given amounts in Column B. Place the answers in Column C.
4. Add the numbers in Column C to get the total approximate cost of electricity for lighting your home.
5. Discover how much money you will save if all the bulbs in your home were CFLs or LEDs. Add the numbers in Column A to get the total number of bulbs in your home. Transfer the total to both rows in Table 3, Column E as indicated by the arrows.
6. Multiply the total number of CFLs by the annual cost of electricity for one CFL provided in Column F and put your answer in Column G.
7. In the last row of Table 3, multiply the total number of LEDs in Column E by the annual cost of electricity for one LED bulb provided in Column F and put your answer in Column G.

   How do the amounts in Column G compare with your current total cost for lighting in Column C above?

TABLE 2

	A	B	C
	Number of bulbs from Table 1	Annual cost of electricity for one bulb	Annual cost of electricity for lighting
Incandescent		× $4.80	
CFL		× $1.08	
LED		× $0.60	
TOTAL			

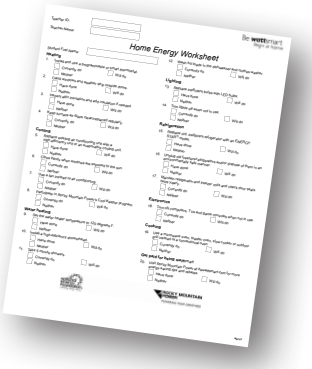
TABLE 3

	E	F	G
All CFLs		× $1.08	Annual cost of electricity with only CFLs
All LEDs		× $0.60	Annual cost of electricity with only LEDs

Cost figures are for an individual bulb (60 Watt incandescent), the lumens equivalent CFL (13 Watts) and LED (7 Watts) each used for 2 hours each day for 30 days. EEI Typical Bills and Rates Report, Winter 2018 (12 months ending 2017).

I have the *power* to be **watt**smart.

Together with your parent(s), complete the separate *Home Energy Worksheet*. Return the completed *Home Energy Worksheet* to your teacher or submit it online at hews@nef1.org to receive your wattsmart nightlight. You may find you are already practicing ways to be energy efficient but there is always room to do more.



Challenge yourself and your family to commit to practice energy efficiency by making wise energy choices and being wattsmart. You will not only help extend the life of our natural resources, but save money, too!

For other energy-saving ideas and incentives, visit **wattsmart.com**. Congratulations to you and your family for making a difference.

7

Be *watt*smart

Begin at home

National Energy Foundation
cultivating energy literacy

*watt*smart.com

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

*watt*smart is registered in U.S. Patent and Trademark Office.

Welcome to Be ***watts***mart, Begin at home

This program teaches the importance of energy and assists students and their families in saving energy in their homes. For teachers, Be ***watts***mart, Begin at home reinforces important electrical concepts from your curriculum.

This *Teacher Guide* was designed to supplement program instruction. A variety of tools have been provided to allow you to format Be ***watts***mart, Begin at home to meet your instructional needs. These tools include:

- General guidelines and activity suggestions
- Classroom activities to further the impact of lessons
- Additional fun and interesting activities for students
- Activities containing STEM-correlated curriculum for your classroom

About Rocky Mountain Power

Rocky Mountain Power is committed to the delivery of reliable electric service that is safe, low-cost and increasingly from clean, renewable resources. Serving more than 1 million customers in Utah, Idaho and Wyoming, the company is one of the lowest cost energy producers in the nation.

About the National Energy Foundation

The National Energy Foundation (NEF) is a unique 501(c)(3) nonprofit educational organization dedicated to the development, dissemination and implementation of supplementary educational materials and programs. These resources for education relate primarily to energy, water, natural resources, science, math, technology, conservation, energy efficiency and the environment. NEF recognizes the importance and contribution of natural resources to our economy, to our national security, the environment and our quality of life.

Permission to Reprint

All Rights Reserved

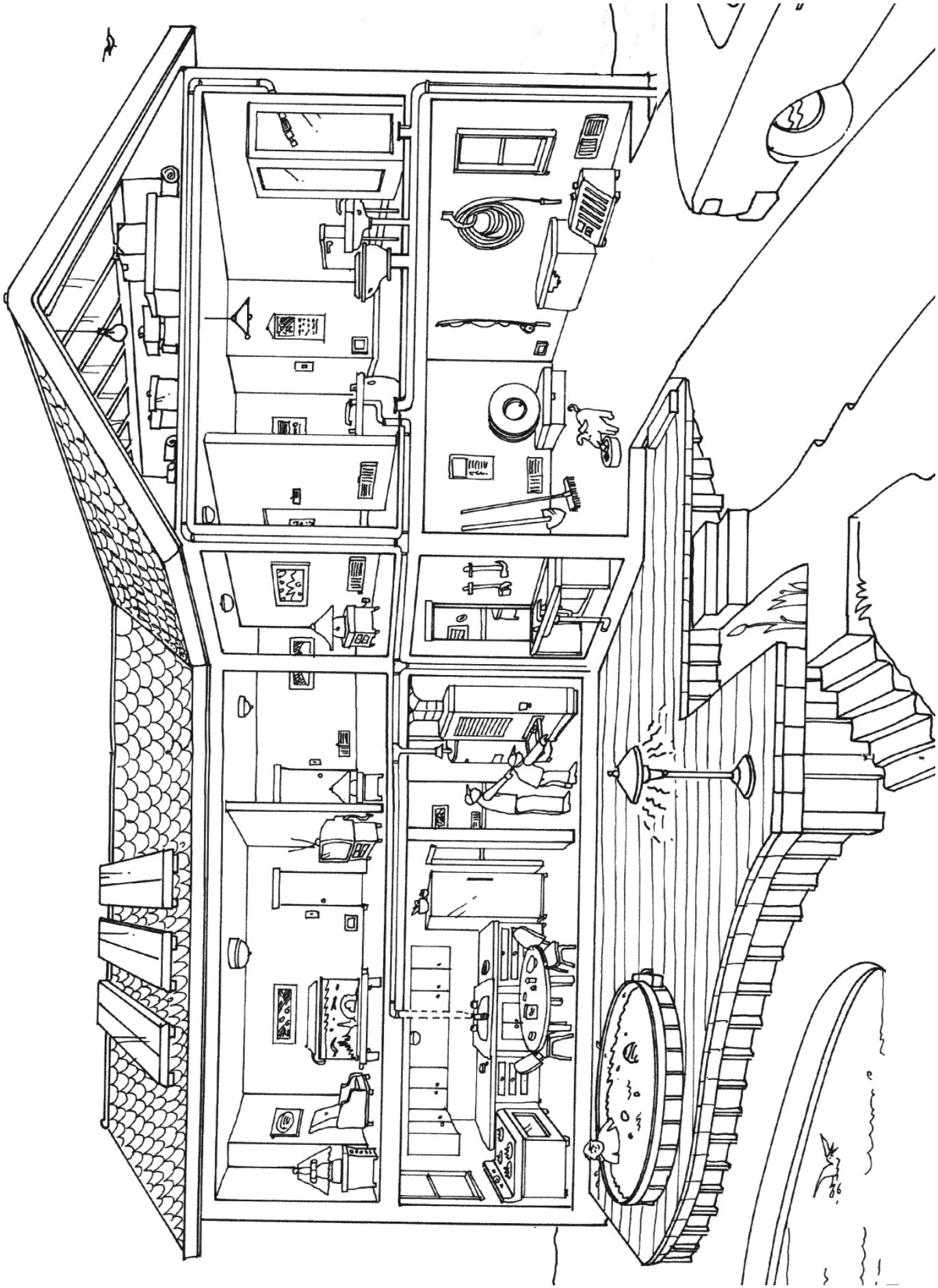


Table of Contents

STEM Connections

Activity	Science				Technology				Engineering					Math			
	Science as Inquiry	Energy Sources, Forms and Transformations	Science and Technology	Personal and Social Perspectives	Productivity Tools	Communication Tools	Research Tools	Problem-solving and Decision-making Tools	Historical Perspective	Design and Modeling	Invention and Innovation	Test Design and Troubleshooting	Use and Maintain	Numbers and Operations	Measurement	Data Analysis and Probability	Connection to the Real World
Pass the Sack		•		•													
The Search for Energy	•	•	•	•										•		•	•
A Bright Idea!	•	•	•	•	•	•	•	•	•	•	•	•	•				
The Art of Circuits	•	•	•					•		•	•	•					•
Shine a Light on History		•	•	•		•	•	•	•		•						
Layered Lunch	•		•							•							
How Do You Rate?	•	•		•		•	•					•	•		•		•
Energy in Math														•	•	•	•
Be wattsmart, Begin at home Poster		•		•			•	•									•

Activity: Pass the Sack

Objective
Students will demonstrate the difference between renewable and nonrenewable resources and the need for conservation of resources.

Curriculum Focus
Science
Social Studies

Materials
- Two different kinds of candy or other objects students find desirable
- Sack to hold candy, such as a gallon size plastic bag

Key Vocabulary
Nonrenewable resource
Renewable resource

Next Generation Science Correlations
4-ETS1 – 2
4-ESS3 – 1-2
4-ESS3.A
5-ETS1 – 2
5-ETS1 – 1
5-ESS3 – 1
MS-ESS3 – 4
MS-ESS3.A

Introduction

Statistical research confirms world consumption of natural resources is increasing every year. Continued population growth ensures that demand for renewable and nonrenewable energy resources necessary to maintain our way of life will continue to increase. This creates problems for future availability of nonrenewable resources. Nonrenewable resources are just that, resources that cannot be renewed. For example, a resource used at our present rate might last about 100 years. Factor in population growth and increasing reliance on technology, and that resource may last only 79 years.

In this activity, two different types of candy (or other objects students would like) will represent resources. One type of candy will represent renewable resources and the other will represent nonrenewable resources.

Procedure

1. Before class, count out enough candy so there is one piece per student (some of each type of candy – less of one so it will run out faster). Put it in the sack or bag. Save the remaining candy. If you have a very polite class, count enough candy for half of the class. **You want the contents to run out before everyone gets candy!**
2. Tell students you will be demonstrating how resources get used over time by playing "Pass the Sack." Show students the sack and explain that when they get the sack, they should take some energy and pass the sack to the person next to them.
3. Before passing the sack to the first student, review renewable and nonrenewable resources. Have students give examples of each as you hand the sack to a student.
4. While this discussion is taking place, allow students to pass around the bag of candy without any rules about how many pieces students may take. Occasionally, add four or five pieces of **one** type of candy you are using, this will be your renewable resource. The sack will be empty before it reaches all the students.
5. Ask students who did not get any candy how they might obtain energy from other students. What if each student represented a country? How do countries obtain resources, trade, barter (trade for goods), buy (trade for currency), invade and take or go to war? What effect did the availability of candy have on relationships between students? What effect might the availability of natural resources have on the relationship among nations, provinces, states, people, standards of living and quality of life?

6. Explain how our resources are like the candy. Which type was the nonrenewable? How could you tell? (No more was added to the bag once it was being passed around.) Which type was renewable? How could you tell? (It was added periodically to renew it.)

7. Point out that resources have limits just like the candy. Emphasize that many resources, such as fossil fuels, are nonrenewable and are being consumed faster than they are being replaced by nature. Discuss the fact that it would be more difficult for students to eat the candy if they had to search the room to find it instead of just taking it from the sack. Energy companies must seek resource deposits and obtain rights to drill or mine for them; they do not just magically appear.

8. Point out that renewable resources can also have limitations. They may not generate electricity as reliably as nonrenewable sources and the amount of energy produced may vary with weather and location.

9. Plan how to pass out the remaining candy.

Discussion

- Should rules be established to determine how the candy is distributed?
- Do oil, coal and natural gas companies have rules/regulations that must be followed to find resources?
- Should there be rules and regulations on how much oil, coal and natural gas people use?
- How do the class' social decisions influence the availability of candy?

To Know and Do More

Go to *eia.gov/kids* to access games, tips and facts for kids to learn about renewable energy and energy efficiency.

Discuss whether or not it is possible to run out of a renewable resource. Wood and fresh water are examples of renewable resources that can be used faster than nature can replace them.

Activity: The Search for Energy

Objective

The student will learn the difference between renewable and nonrenewable resources.

Curriculum Focus

Math
Science
Social Studies

Materials

- 1/2 bag popcorn or other small item to represent solar energy
- Small pieces of ripped paper to represent approximate U.S. nonrenewable energy reserves
  - 164 black - coal
  - 22 red - uranium
  - 8 green - natural gas
  - 2 blue - oil
- Large sheet or tarp to place paper and popcorn on for easy clean up (optional)
- Copies of "Data Table and Graph"

Key Vocabulary

Nonrenewable resources
Renewable resources

Next Generation Science Correlations

4-ESS3-1
4-ESS3.A
5-ESS3 - 1
MS-PS1 - 2
MS-LS2 - 1
MS-ESS3.A

Introduction

Fossil fuels are extremely useful energy sources. Our society has adopted them because they can be readily available and economical. In the early part of the 20th century, a fledgling solar industry took root but was ultimately displaced by less expensive energy sources such as fossil fuels. Today some fossil fuels are harder to find and increasingly more costly. The sun, on the other hand, is just as plentiful as it was 100 years ago. It is a renewable resource that could become our most widely used source of energy.

The following activity is a simulation game in which students learn the difference between renewable and nonrenewable resources. The game reflects society's use and exhaustion of nonrenewable fuels and the eventual transition to renewable technologies.

Procedure

1. Divide the class into five equal groups. Each group will be a company going after a particular resource (coal, uranium, natural gas, oil or the sun). The paper and popcorn represent reserves of the various energy resources. Pass out copies of the student sheet "Data Table and Graph" to each group or have students create their own data tables on paper.
2. Have students gather in a large circle. Scatter the papers plus a handful of "solar" popcorn so they are well spread out in the center of the circle. You can do this on a sheet for easier clean up. Explain that this exercise demonstrates how the availability of resources changes over time. You may want to designate certain places as protected areas, where the resources are off limits to protect the environment.

3. Tell students you will do several trials and look to see how the types of resources that are available change after each trial. Tell each group that they will have 30 seconds to pick up as many papers or popcorn as they can of their assigned type. Start timing.

   After 30 seconds have the groups stop and count the items they have gathered. Have each group announce their results to the class and record every count in their data table. If some groups have collected all of their available resource, point out that the resource is now depleted and they are unemployed.

4. Scatter another handful of "solar energy," helping students realize that since the sun is a renewable resource, there is the same amount of it each time you look, whereas the nonrenewable fuels are being depleted. Repeat the search period so students can get more papers or popcorn.

5. Stop after 30 seconds and have the group count and record the papers and popcorn collected again. Note that there are fewer nonrenewable fuels found in the second round. Students have to look harder to find what is left. The solar count is slowly catching up with the nonrenewable fuels. Repeat with additional trials as needed.

6. Have groups create a bar chart or, for more advanced students, a multi-line graph of the number of papers and popcorn collected each trial.

Discussion

- Why does the solar line differ from the others? Why does it go up rather than down?
- How do improvements in technology affect the extraction of resources from the earth?
- How do improvements in technology affect our usage of renewable resources?
- In the real world, can we extract ALL of a resource? Why do some deposits go unused?

To Know and Do More

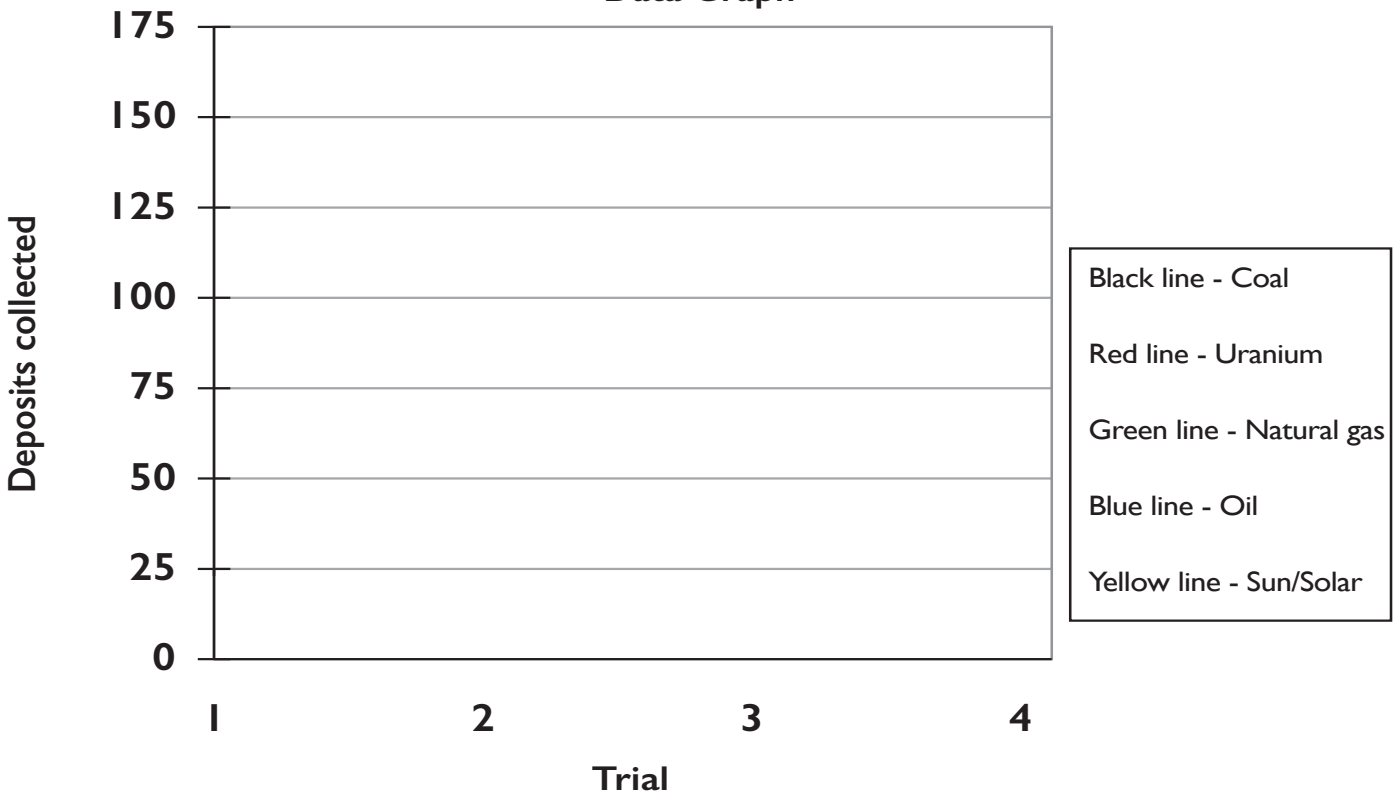
Add wind and water to the activity. Lead a discussion to be sure the students understand why you continued adding more sun, wind and/or water after each trial, but did not add more of the other papers. As a class, come up with a general outline of how to more effectively manage the resources that are available to us.

Student Sheet: Data Table and Graph

Data Table

Search Period	Coal (Black)	Uranium (Red)	Natural Gas (Green)	Oil (Blue)	Sun/Solar (Popcorn)
1					
2					
3					
4					
Totals					

Data Graph



Be *watt*smart
Begin at home

Activity: A Bright Idea!

Objective
Students will study an example of potential energy converted to energy in the forms of heat and light.

Curriculum Focus
Science

Materials
- Several general purpose C dry cell batteries
- A string of holiday lights, cut apart and stripped at the ends or small bulbs and sockets with wires
- Battery-operated toy and batteries
- Small flashlight bulbs and sockets
- Copies of "A Bright Idea!"

Key Vocabulary
chemical energy, circuit, closed circuit, current, electrode, electrolyte, kinetic energy, open circuit, parallel circuit, potential energy, radiant energy, series circuit, thermal energy, transformation, voltage

Next Generation Science Correlations
4-ETS1 – 1-2
4-PS3 – 2-4
4-ESS3 – 1
5-PS1.B
5-ESS3 – 1
5-ESS3.C
MS-PS3 – 3
MS-PS3.B
MS-LS2 – 1
MS-ESS3.A

Introduction

Alessandro Volta, an Italian physicist, made the first battery in 1795. Volta placed two different metal electrodes in an electrolyte solution (a chemical mixture which will conduct an electrical current). The chemical reaction caused an electromotive force. A common misconception is that batteries store electrical energy. This is not really true; batteries convert chemical energy to electrical energy. They store chemical energy that can be released during a chemical reaction. By using metals or carbons that have different chemical properties and an acid or base that will allow the movement of electrical charges, an electric current can be produced.

Procedure

1. Demonstrate a battery-operated toy with and without the battery. Explain that energy is the ability to do work or cause change, such as moving the toy or powering a light bulb.
2. Discuss:
   - How do we know the energy from the battery is working?
   - What kind of energy is the toy giving off? (possible answers include kinetic energy, mechanical, light, sound and heat)
   - The battery converts chemicals (chemical energy) to electricity (electrical energy) and the toy converts electricity to many possible forms of energy, including mechanical energy, heat (thermal energy), light and sound.
3. Have students use the materials provided to experiment with simple circuits by following the guided inquiry activity on the student sheet. As the students do the activity, have them note the light and heat energy given off.
4. Give students examples of types of potential and kinetic energy.

   Kinetic energy – a person riding a bike, a fire in a wood-burning stove, a person running

   Potential energy – a lump of coal, a sandwich, a rock at the top of a hill

Discussion

Write the word choices on the board. Read the statements to the students and have them fill in the blanks using the words.

1. A battery converts chemical energy into _____ energy.
2. Electricity is a form of _____ energy.
3. The light bulb converts electrical energy into _____ and _____ energy.
4. A battery contains _____ energy.

Word choices:

potential electrical heat kinetic light

Answers:

1. electrical 2. kinetic 3. light, heat 4. potential

To Know and Do More

Ask students if they believe batteries are important to our way of life today. Have students make a list of all the items they used yesterday that contained a battery. Their list might include:

Wristwatch	Tablet
Automobile	Video game controller
Cell phone	TV remote control

To continue this, have students add to the list all of the items they can think of that use batteries. Are your students surprised at how many items today depend on batteries to operate and how many battery-operated items they depend on daily?

Career Awareness Activity

Search the internet for a company that produces batteries. Discover the various job opportunities and careers within that company. Your list might include: scientists, chemists, research analysts, accountants, purchasing agents and administrative assistants.

Student Sheet: A Bright Idea!

Alessandro Volta, an Italian physicist, made the first battery in 1795. Volta put sheets of two different types of metal in a jar of water with a chemical that could carry electricity (an electrolyte). The chemical reaction between the electrolyte and the metal plates caused electrons to move when the plates were connected with a wire. The flow of electrons moving in a wire is called an electric current, or electricity.

Using one battery and one light, make the bulb light up. Congratulations, you have made an electrical circuit!

1. What did you have to do to get the light to come on and complete the circuit? How was it touching the battery?

2. What do you have to do to make the light bulb turn off and then back on?

3. What do you think the electrical terms "open circuit" and "closed circuit" mean?

4. How do you think a light switch works?

5. What type and form of energy is in the battery?

6. The battery's energy was transformed into what other forms of energy?

Using one battery, try to light up two lights.

1. Sketch how the wires are connected to the battery when you light two lights.

2. Are the lights the same brightness as when you lit only one or are they dimmer?

3. A series circuit has only one path that electrons can follow as they are pushed from one side of the battery to the other. A parallel circuit has more than one path and the electrons can go more than one way to get from one end of the battery to the other. Which type of circuit did you make and draw?

4. Experiment with multiple batteries connected together, placing the positive end of one battery touching the negative end of another battery. What effect does the number of batteries have on the brightness of the bulbs?

5. If you leave the battery connected to a bulb long enough, you will feel the wire and the ends of the battery getting warm. What do you think is causing this?

6. Can that heat be useful? Can it be dangerous? Give an example to prove your point.

7. Wash your hands when you are finished.

Activity: The Art of Circuits

Objective

The students will learn about conservation of energy and energy transfer by experimenting with electrical circuits.

Curriculum Connection

Science
Social Studies
Language Arts
Art

Materials

- Playdough® or homemade salt dough
- 9V batteries
- 9V battery clips with red and black cables
- 2V LED miniature light bulbs
- Insulating material - cardboard, packaging plastic or dough made from sugar, not salt (optional)

Key Vocabulary

Energy transfer
Electric current
LED (light-emitting diode)
Electric circuit
Insulator
Conductor

Next Generation Science Correlations

4-PS3 - 2
4-PS3 - 4
4-PS3.A-B, D
4-ETS1 - 1
4-ETS1.A
5-ETS1 - 1
5-ETS1.A
MS-PS3 - 3
MS-PS3.A-B
MS-ETS1 - 1
MS-ETS1.A

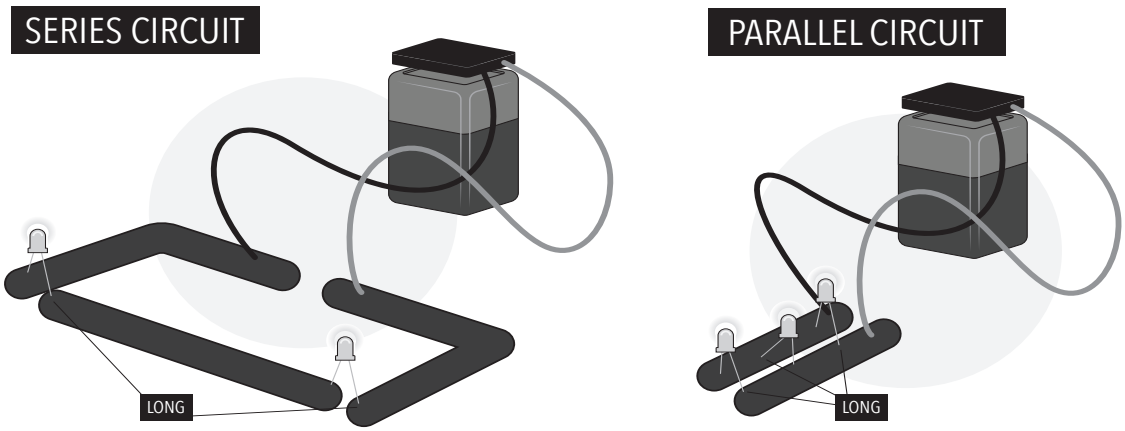
Introduction

Materials that allow a flow of electric current to pass through them more easily are called conductors. Aluminum, silver, copper and water are examples. Insulators block the flow of electricity. Nonmetallic materials, such as rubber, plastic, wood, cloth and dry air are insulators. An electrical circuit is a path of conductors through which electric current flows. Energy can be transferred from place to place by electric current.

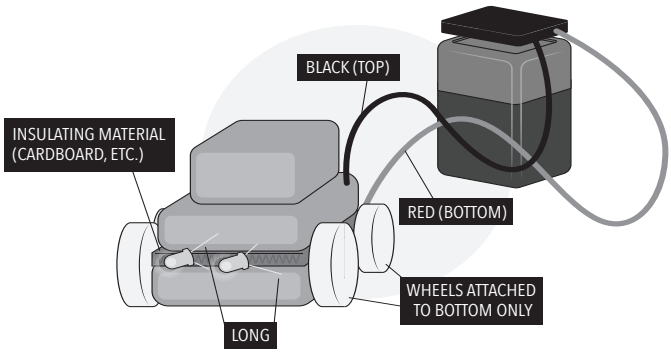
In this activity, students will use salt dough, which is a conductor, to design circuits which will transfer electrical energy. If they are successful, the electricity will be transformed to light and heat energy in a miniature LED bulb.

Procedure

1. Introduce students to their materials:
   a. Attach the battery to a battery clip with red and black cables. The red lead is the positive terminal and the black lead is the negative terminal.
   b. Examine the LED bulb. Two wires (or legs) extend from the bulb. The longer wire is the positive side of the LED and the short wire is the negative side. The LED should only be connected to dough, never directly to the battery terminals, which will cause the bulb to burn out.
2. Tell students that electricity can only go through the circuits they will create in one way. The positive terminal of the battery (red lead on battery clip) must be nearest a positive (long) leg of the LED. A battery pushes electricity around the circuit through the positive leg and out the negative (short) leg, then repeating through the next positive leg (if there is more than one LED in the circuit).
3. Explain that electricity will take the path of least resistance. It is easier for electricity to travel through the dough than through the LED, so if two pieces of dough are touching, the LED will not light.
4. Challenge students to design a simple circuit like the ones on the next page.



If time allows, have students create a circuit work of art like the one below. Since the conductive dough cannot touch, use insulating material between layers.

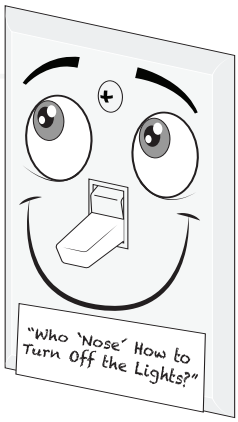


Discussion

- How does your dough circuit light the LED compared to the circuits at your home?
- In a series circuit with multiple LEDs, what happens to the brightness of the LEDs that are further from the battery? Why?

To Know and Do More

When a light switch is off, the electrical pathway to a bulb is not complete and electricity cannot flow to light that bulb. When you flip the switch on, you close the circuit and the light turns on. If light is not needed, it is important not to waste the natural resources used to generate the electrical power that is being transformed to light. Have students create characters without noses to put over light switches at school or home. The art should help remind them to turn lights off!



Activity: Shine a Light on History

Objective

Students will gather details and make inferences from text to explain historical events related to electricity. They will use their knowledge to write information text to support an opinion.

Curriculum Focus

Language Arts
Social Studies
Science

Materials per student group

- Copies of "Edison v. Holonyak"

Key Vocabulary

LED (light-emitting diode)
Incandescent bulb
Filament
Electric meter
Inference
Persuasive
Lumen
Watt

Next Generation Science Correlations

4-PS3 - 2
4-PS3.A-B
MS-PS3 - 3

Introduction

Thomas Edison and Nick Holonyak are two famous lighting inventors. They both made major contributions that changed the way people lived. Thomas Edison patented the incandescent bulb in the late 1870s. Since that time, people have enjoyed the convenience of using electricity for light. Nick Holonyak created the first practical, visible-spectrum LED which revamped lighting as we know it.

In this activity, students will study the contributions of these two inventors. They will gather details to form an opinion about which man was more influential in history.

Procedure

1. Pass out copies of "Edison v. Holonyak" and have students read about each. If time allows, they can use the internet, or other sources, to find additional information.
2. Have students fill out the research cards for each inventor. Using that information, they should decide which inventor was more influential in history and write a persuasive paragraph, with details from their research to support their opinion.
3. Challenge students to practice reciting their paragraph and then present it to another student(s) in an attempt to change a differing opinion.

Discussion

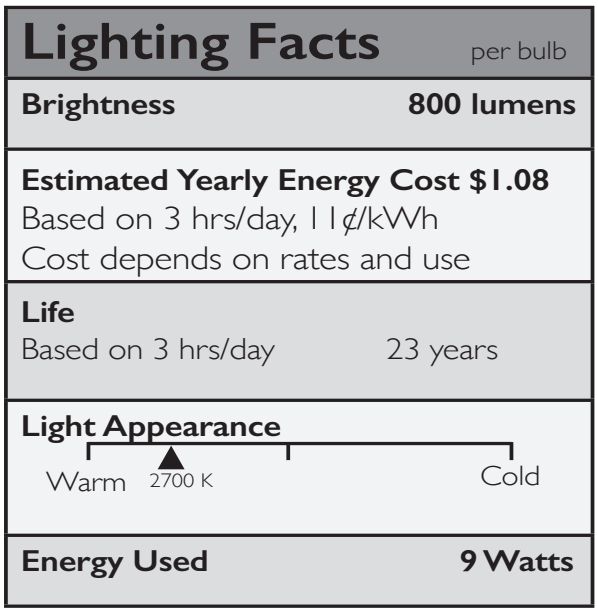
- What kinds of light bulbs are used in your home? How do they affect the way you live and work?
- What do you think the next great electrical invention will be?
- Thomas Edison said, "Genius is one percent inspiration and ninety-nine percent perspiration." What did he mean? How does his quote apply to you?

To Know and Do More

A light bulb package has a lighting facts label that contains different numbers.

- The light output in lumens.
- The power used by the bulbs, measured in Watts. The higher the wattage, the more energy the bulb uses.
- A measure of how warm or cool the light from that bulbs looks, measured in Kelvin (K). Low numbers are warmer light hues (orange or yellow). High numbers are cooler hues (blue or green).

When buying new bulbs, we should shop by lumens, not wattage. We save energy by finding bulbs with the lumens we need, then choosing the lowest wattage possible for that number of lumens.



Activity: Layered Lunch

Objective

Students will understand that natural gas deposits are trapped and held by certain types of geologic formations.

Curriculum Focus

Science
Art

Materials

- Slices of bread
- Almond butter or other thick spread (e.g. cream cheese)
- Honey
- Plastic wrap or wax paper
- Plastic knife

Key Vocabulary

Permeable
Impermeable
Source rock

Next Generation Science Correlations

4-ETS1 - 1
4-ETS1.A
5-ETS1 - 1
5-ETS1.A
MS-LS4 - 1
MS-LS4.A
MS-ESS1 - 4
MS-ESS1.C
MS-ETS1 - 4
MS-ETS1.B

Introduction

How do we find natural gas? Try this activity to get an idea of the type of rock formations and characteristics geologists look for when locating natural gas deposits.

As natural gas molecules form, they migrate from shale "source rock" into more porous areas such as sandstone. Porous or permeable layers are much like a sponge with little pockets throughout the rock. The natural gas continues to move to either the earth's surface (where it escapes into the atmosphere) or it is trapped when nonporous or impermeable rock layers block its path.

Procedure

Using bread, almond butter and honey, create some edible models of rock layers.

1. Spread thick layers of almond butter then honey on a slice of bread. Top it with another slice of bread.
2. Make a second sandwich just like the first, or gently cut the sandwich in half.
3. Now put one sandwich (or one half) with the almond butter layer above the honey and the other sandwich (or other half) with the honey on top of the almond butter.
4. Next spread a thick layer of only honey on a slice of bread, adding another slice on top.
5. Cover your sandwiches with wax paper or plastic wrap and gently press down on them for about three seconds, representing millions of years of pressure.
6. Cut the sandwiches in half and observe what has happened.

Discussion

1. What do you think the honey represents?

2. Which layer do you think represents porous rock?

3. Which layer is the nonporous rock?

4. Did the honey seep into both slices of bread? Why or why not?

5. What do you predict would happen with a sandwich made with only almond butter?

6. How might the ingredients you used affect your results?

7. Draw the layers of your sandwich and use colored pencils or crayons to distinguish the different layers and write labels for each layer that includes: impermeable, permeable, natural gas, nonporous rock and porous rock.

Answers

The honey represented natural gas or a fossil fuel. The bread was the porous rock where the honey or natural gas gets into the little pockets or air spaces. Almond butter acted like a nonporous rock layer blocking the honey from seeping into the slice of bread above the almond butter. The results may be different depending on your ingredients: denser bread – less seepage, creamier almond butter may be less impermeable or thicker honey may not fill the little pockets as easily.

To Know and Do More

Assign students to further investigate how natural gas is trapped in rock formations. Have them draw pictures of a formation and the trapping of oil and natural gas in the earth.

Visit a natural history museum and look for prehistoric life forms and rock formations.

Activity: How Do You Rate?

Objective
Students will conduct a home survey to determine how they can use energy more efficiently by changing their habits and improving conditions and thereby improve the environment in which they live.

Curriculum Focus
Language Arts
Science
Social Studies

Materials
- Copies of "How Do You Rate?"

Key Vocabulary
Conservation
Efficiency
Environment
Natural resources
Quality of life

Next Generation Science Correlations
4-ESS3 – 1
5-ESS3 – 1
5-ESS3.C
MS-LS2 – 1
MS-ESS3 – 3
MS-ESS3.A

Introduction

We use natural resources every day. Sometimes we use them just as they come from earth or the atmosphere. At other times we alter their makeup to fit our needs. For instance, we use the sun just as it is to dry clothes, but we use photovoltaic cells to capture the sun's energy and convert it to electricity, a secondary energy source. We use coal just as it comes to us from the earth to make electricity, or we use coal to provide coke for steel manufacturing. Many natural resources we use every day are nonrenewable, once we use them they are gone; others are renewable, they can be replaced through natural and/or human processes.

It is responsible to use all resources efficiently and wisely. When we do, we reduce energy use, save money and preserve the environment. Making wise decisions today will have a positive impact on our future.

Imagine the difference we could make if we all used energy more efficiently. We would conserve natural resources for the future and enjoy better air quality and a better life. Each one of us can truly make a difference. All it takes is knowledge and action.

Procedure

Using energy efficiently and conserving our natural resources are responsible and easy actions that students can take today to show they respect the environment and have a desire to protect and preserve it.

1. Pass out "How Do You Rate?" Discuss the actions that may apply to the school (e.g., windows and doors have weather stripping; drapes or blinds are open on cold, sunny days and closed on hot days; thermostats are adjusted at night; lawns are only watered early or late in the day). As you discuss each action, write a T for true or F for false on the board to see how the school rates. What can the students do to improve energy use at school?
2. Decide on several actions the students can take at school to help save energy and protect the environment. One action might be to use both sides of their paper and then recycle. If a room is empty during lunch or at other times, they can be sure lights are turned off and computers are on sleep mode.
3. Have the students take the survey home and complete it with their parent's or guardian's help. Explain to students that it is important to record their true energy use and not mark what they think they should be doing.
4. How did the students' homes rate? Discuss the results of the home survey. Help students to become enthusiastic about conserving natural resources and using energy more efficiently.

5. Prepare a graph to show the results of the energy efficiency survey. Which efficiency tips are already practiced by most students? Which were least used? Graph the number of students marking "yes" for each item.
6. Find the mean, median, mode and range of the data on the home survey.

Discussion

Discuss the benefits of energy conservation. How will our energy use impact our future? Compare the benefits and possible inconveniences and their correlation to our quality of life.

To Know and Do More

Why do you think people do not practice all of the energy efficiency tips on the survey? Are there false assumptions that affect people's behavior? (Believing that turning things on and off uses more energy than leaving them on, for example.)

Discuss how people in other geographic areas and cultures would rate. Does everyone have a car, dishwasher or an air conditioner?

Career Awareness Activity

Have the students think of some careers that could have a big impact on your community's energy usage. Some areas to consider: teachers — impact energy usage through education and by example; utility workers — through education and incentives; government regulators — through restrictions and rewards, such as financial benefits or tax breaks.

Be wattsmart
Begin at home

Student Sheet: How Do You Rate?

How energy efficient is the building you live in? Together with your parents or guardians, answer the following questions to rate your home or apartment.

Circle T if the statement is true, F if the statement is false or NA if the statement does not apply to your living situation.

Heating and Cooling

Windows and doors have good weather stripping.	T	F	NA
Window coverings are open on cold, sunny days and closed on hot days.	T	F	NA
Window coverings are closed at night when heat is on.	T	F	NA
Thermostat is set at 68° F (20° C) or lower in winter.	T	F	NA
Air conditioning is set at 78° F (26° C) or higher in summer.	T	F	NA
Ducts are insulated in unheated/uncooled areas.	T	F	NA
Garage is insulated.	T	F	NA
Air filters on furnace and air conditioner are cleaned and changed regularly.	T	F	NA
Thermostat is adjusted at night.	T	F	NA
Fireplace damper is closed when fireplace is not in use.	T	F	NA

Water

A pitcher of water is kept in the refrigerator for drinking.	T	F	NA
Faucets and toilets do not leak.	T	F	NA
Showers and faucets are fitted with energy-efficient shower heads and aerators.	T	F	NA
Showers last no longer than 5 minutes.	T	F	NA
Toilets are low-flow, or tanks use water displacement devices.	T	F	NA
Hot water heater is set at 120° F (49° C). • If someone in your household has a compromised immune system, consult your physician.	T	F	NA
Hot water pipes from water heater are insulated.	T	F	NA
If located in an unheated area, hot water heater is wrapped in an insulation blanket.	T	F	NA
Broom, not hose, is used to clean driveways and sidewalks.	T	F	NA
Faucet is shut off while brushing teeth and shaving.	T	F	NA

Appliances

Dishwasher is usually run with a full load.	T	F	NA
Automatic air-dry is used with the dishwasher.	T	F	NA
Washing machine is usually run with a full load.	T	F	NA
Cold water is used in washing machine most of the time and is always used for rinses.	T	F	NA
Clothes dryer is usually run with a full load.	T	F	NA
Clothes are often hung up to dry.	T	F	NA
Refrigerator is set no lower than 37° F (3° C).	T	F	NA
Lids are usually put on pots when boiling water.	T	F	NA
Oven is preheated for only 10 minutes (if at all).	T	F	NA

Lighting

Lights are turned off when not in use.	T	F	NA
LED bulbs are used in at least one room.	T	F	NA
Security and decorative lighting is powered by solar energy.	T	F	NA
Light bulbs are kept dusted and clean.	T	F	NA
Sunlight is used whenever possible.	T	F	NA

Trash

Glass, cans and newspapers are recycled.	T	F	NA	Over-packaged products are usually avoided.	T	F	NA
Plastic is separated and recycled.	T	F	NA	Reusable bags are used for groceries, or bags are recycled.	T	F	NA
Old clothes are often given to charities, second-hand clothing stores, etc.	T	F	NA	Rechargeable batteries are used when possible.	T	F	NA
Food scraps and organic waste are composted.	T	F	NA	Food is often bought in bulk.	T	F	NA
				Products made of recycled materials are favored.	T	F	NA

Transportation

Car is properly tuned and tires properly inflated.	T	F	NA	Public transportation is used when possible.	T	F	NA
Family drivers obey speed limit on the highway.	T	F	NA	Family members often walk or ride a bike for short trips.	T	F	NA
Family drives an electric vehicle	T	F	NA	Kids and parents carpool when possible.	T	F	NA

Environment

Trees and bushes are maintained for wildlife shelter and food.	T	F	NA	Bird feeders or bird houses are maintained.	T	F	NA
				Native plants are used to decrease water use.	T	F	NA

Yard and Workshop

Lawns are watered early or late in the day.	T	F	NA	Cutting edges on tools are kept sharp.	T	F	NA
Grass is mowed to a height of 2 to 3 inches (5 to 8 cm).	T	F	NA	Electrical tools are maintained and gas equipment is kept tuned and serviced.	T	F	NA
Hand tools, like pruners and clippers (rather than power tools) are used whenever possible.	T	F	NA				

Score 1 point for True, 0 points for False and 0 points for Not Applicable (NA).

Total Points: _____

Discuss the results of this survey with your family.
What can you and your family do to raise your score?

Be wattsmart
Begin at home

Activity: Energy in Math

Objective
The students will interpret and evaluate numerical expressions as they solve word problems.

Materials
- Student Worksheet
- Individual White Boards (optional)

Key Vocabulary
Watt

Common Core Correlations
Numbers and Operations

Data Analysis and Probability

Connection to the Real World

Measurement

Introduction:

In this activity, students will complete the problem set found on the bottom of page 22 within an allotted time (10 minutes). Students will solve the mathematical problems making connections to real world situations.

Procedure:

1. Instruct students on the importance of learning to solve real world problems using their math skills. You may want to review some steps to solving word problems before beginning the first problem. The following questions might be useful to review:
   - Can you draw something to help you?
   - What can you draw?
   - What conclusions can you make from your drawing?
2. Pass out the worksheet.
3. Model the problem.

   Have a pair of students work at the board while the others work independently or in pairs at their seats.

   As students work, circulate. Reiterate the questions above. After several minutes, have the demonstrating students receive and respond to feedback and questions from their peers if necessary.
4. Calculate to solve and write a statement.

   Give everyone two minutes to finish work on that question, sharing their work and thinking with a peer. All should write their equations and statements of the answer.
5. Assess the solution for reasonableness.

   Give students one to two minutes to assess and explain the reasonableness of their solution.

Discussion/Debrief

The student debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the problem set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed. Then guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What did you notice about this word problem?
- What is different in the problem?
- What are we trying to find out?
- How can we represent this part of the story? (draw, write a number, use manipulatives)
- What would help us organize our thinking and our work? (answers may vary: draw it out, act it out, write an equation, etc.)
- What strategies can we use to solve this problem?

To Know and Do More

Have your students turn in their worksheet showing their work to solve each problem. This will help you to assess your students' understanding of the math concepts presented in the lesson.

1. Jessie saved more energy than Michael. Michael saved more energy than Maggie. Maggie saved less energy than Jessie. Karen saved more energy than Jessie. List the kids' names in order of how much energy they saved, least to most:
   - Jessie, Karen, Maggie, Michael
   - Maggie, Michael, Jessie, Karen
   - Michael, Jessie, Maggie, Karen
   - Maggie, Karen, Michael, Jessie
2. The Maher family used 57,000 gallons of water a year, costing them $525 to heat it. Estimate how much money they would save in a year if they cut their hot water use by 30,820 gallons.
   - $100
   - $240
   - $284
   - $525
3. If each person in a house uses a 60-watt bulb in their bedroom 4 hours a day, and there are three people living there, how many Watts will be used a day to light their room?
   - 20 Watts
   - 240 Watts
   - 650 Watts
   - 720 Watts
4. For every 10 degrees the water heater setting is turned down, you can save 6% of the energy used. If Charles turns his water heater down by 15 degrees, about what percent savings in energy will he save?
   - 6%
   - 9%
   - 12%
   - 15%

Answers: 1. Maggie, Michael, Jessie, Karen; 2. $284; 3. 720 Watts; 4. 9%

Be *watt*smart
Begin at home

Activity: Be *watt*smart, Begin at home Poster

Objective
The students will make their own energy- efficient choices that can be practiced at home to help future societies.

The students will also learn how they can be part of the solution to save energy and natural resources.

Materials
- House poster found on the following page
- Colored markers or pens

Key Vocabulary
Carbon Footprint
Recycle
Energy efficient

Common Core Correlations
Energy Sources, Forms and Transformation

Personal and Social Perspectives

Research Tools

Problem-solving and Decision-making Tools

Connection to the Real World

Introduction:

This is a fun project for students to create after they have studied energy, energy efficiency and renewable and nonrenewable resources. Using the poster given, students will add or color the items listed below to create a house that is eco-friendly and energy efficient. You can help your students answer questions about what types of energy they can use and how it will work in the house to create efficiency and save energy.

Procedure:

1. Add or color the items listed below. You may want to do different items each day as you cover different topics: electricity, natural gas, water, etc.
    - Add a bicycle.
    - Add recycling bins in the garage.
    - Add trees to shade the house.
    - Add a ceiling or floor fan to the home for cooling.
    - Put a blue star (for ENERGY STAR® products) on the refrigerator, television and furnace.
    - Color the energy-efficient showerhead.
    - Color all items that use electricity, yellow.
    - Color the thermostat, brown.
    - Color the furnace filter that is being changed, orange.
    - Draw a purple water drop next to all items in the house that use water.

To Know and Do More

- Have your students write a brief description of the things their family has done to improve energy efficiency at home. Have your students add any items that will encourage their families to be energy efficient in the future.
- Choose a natural resource used for energy and create a Venn diagram comparing the positive and negative effects of the use of this resource on the physical environment.


National
Energy
Foundation®
cultivating energy literacy

Lingo Card

L	I	N	G	O
Water Heater	Natural Gas	Natural Resource	Incandescent	Reduce
Reuse	Phantom Load	Oil	Coal	ENERGY STAR®
Renewable	Energy	Be ***watt***smart Begin at home	Turn It Off	Uranium
Energy Efficiency	LED	Recycle	68 Degrees	Embodied Energy
Cooking	78 Degrees	Solar	Programmable or Smart Thermostat	Electricity

L	I	N	G	O
Reuse	Natural Gas	Phantom Load	LED	78 Degrees
Cooking	Electricity	Renewable	Recycle	68 Degrees
Natural Resource	Water Heater	Be ***watt***smart Begin at home	ENERGY STAR®	Nonrenewable
Embodied Energy	Coal	Energy Efficiency	Heating	Incandescent
Programmable or Smart Thermostat	Reduce	Oil	Solar	Uranium

L	I	N	G	O
Coal	Natural Gas	Solar	Turn It Off	Renewable
Water Heater	Nonrenewable	Phantom Load	Electricity	Reuse
Energy	Oil	Be ***watt***smart Begin at home	68 Degrees	Cooking
Programmable or Smart Thermostat	Incandescent	Recycle	Uranium	Natural Resource
Reduce	78 Degrees	Embodied Energy	LED	Energy Efficiency

L	I	N	G	O
Natural Resource	Water Heater	Natural Gas	Programmable or Smart Thermostat	78 Degrees
Turn It Off	Reduce	Oil	Embodied Energy	Cooking
Phantom Load	ENERGY STAR®	Be ***watt***smart Begin at home	Uranium	Recycle
Energy	LED	68 Degrees	Energy Efficiency	Heating
Electricity	Renewable	Incandescent	Reuse	Solar

Dear Parents,

Today your child participated in the **Be wattsmart, Begin at home** program sponsored by Rocky Mountain Power. In this engaging presentation, your child learned key concepts of his or her science curriculum as well as important ways to be more efficient with energy use at home.

As part of the **Be wattsmart, Begin at home** program, your child received a:

- **Be wattsmart, Begin at home** booklet
- *Home Energy Worksheet*

Please take a moment to read through this informative booklet with your child. Then, fill out the *Home Energy Worksheet* in one of two ways:

- Visit *hew.nef1.org* and fill out an online worksheet. You will need to enter the teacher ID found on the paper worksheet.

  or

- Fill out the paper worksheet and return it to your child's teacher. To thank you, Rocky Mountain Power will provide your child with a wattsmart nightlight.

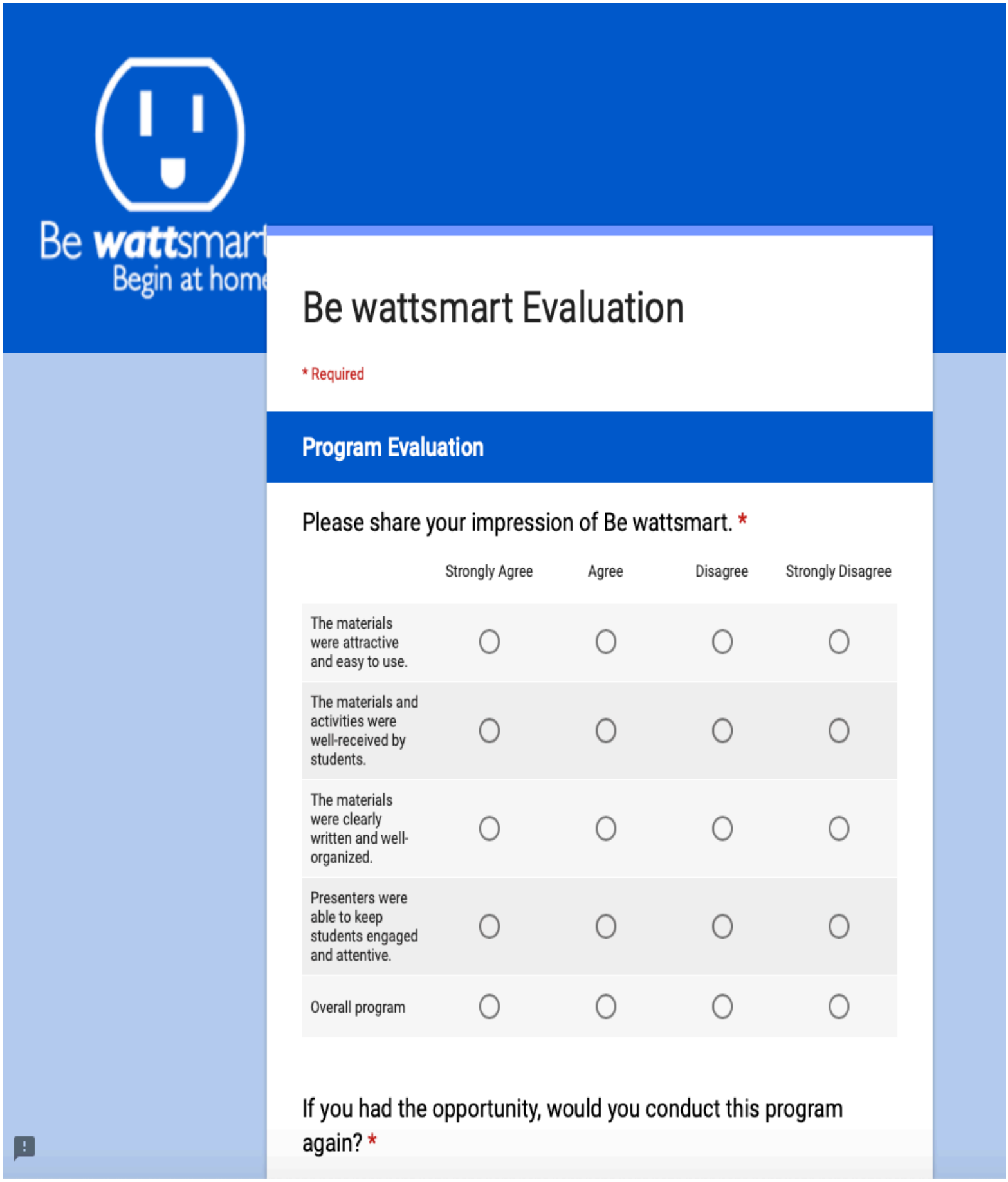
We appreciate your efforts to reinforce important **Be wattsmart, Begin at home** energy knowledge and efficiency actions in your home!

National Energy Foundation
cultivating energy literacy

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

UT-ID

Program Evaluation

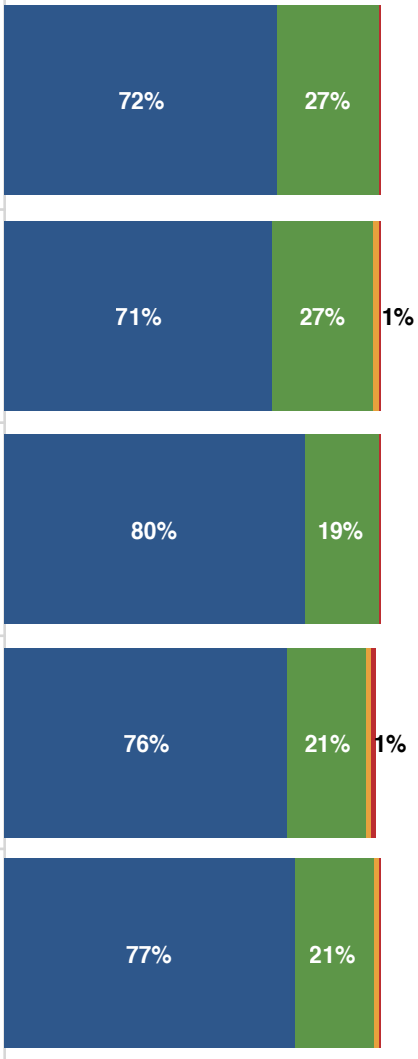


*Watt*smart **Rocky Mountain Power Utah program**

Program Evaluation Summary

Educators' impressions of the program from 108 educators.

	Strongly Agree	Agree	Disagree	Strongly Disagree
Materials were attractive and easy to use.	78	29	0	1
Materials and activities were well received by students.	77	29	1	1
Materials were clearly written and well organized.	86	21	0	1
Presenters were able to keep students engaged and attentive.	82	23	1	2
Overall program	83	23	1	1

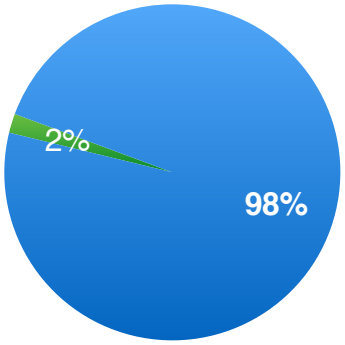


*Watt*smart **Rocky Mountain Power Utah program**

Program Evaluation Summary

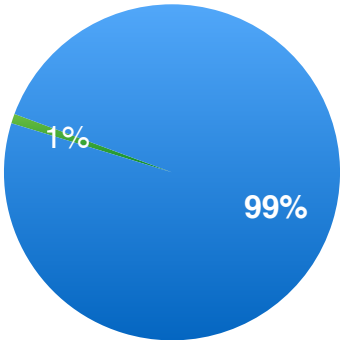
If you had the opportunity, would you conduct this program again?

	Yes	No
Mini-grant	106	2



Would you recommend this program to other colleagues?

	Yes	No
Mini-grant	107	1



In my opinion, the thing the students liked best about the materials/program was:
Activities with students and information
Charge stick
Doing the electricity connection experiment
Easy to understand ways they can help today!
electric stick
Electrical light human connector
Energy stick
Entertaining and informative
Getting an efficient night light for filling out the survey.
hands on
hands on activities
Hands on activities
Hands on activities
Hands on experience
Hands on participation
How interactive the presentation was. They loved the way the presenters engaged them.
interactive
Interactive activities that used student volunteers
interactive LINGO
It supports our core curriculum about electricity perfectly!
It was engaging with the bingo game and presentation
Lingo
Lingo and the conductor sticks
Lingo and the electrode stick thing
Making a complete circuit with their group to turn on the flashing lights.
Making a human current and playing the Lingo game.
making the circuit and playing Lingo
making the circuits and playing lingo
My students enjoyed going home with their worksheet, and they talked with their parents about how they could become more energy wise and conserve power. Many parents thought this was an excellent program as well.
Nice balance between the kids receiving information, processing information, then having some sort of output (game)
Opportunity to do the survey at home and then receive a prize.
Playing LINGO
receiving their own night-light for returning their forms.
Seeing how they can conduct electricity.
Slingo
The "LINGO" Game
The Bingo card
The Bingo game!
The Caitlyn videos in the powerpoint.
The circuit/circle of students that would link or break a circuit and make the tube light up and make sound.
The demonstration of a circuit
The demonstrations that use student volunteers. LINGO
The demonstrations/experiments, and the videos

In my opinion, the thing the students liked best about the materials/program was:
the energy stick
The energy sticks
The engagement - Lingo cards and opportunities to participate and ask/answer questions.
The engaging activities that the presenters had for them to demonstrate the flow of electricity.
The experiences used to show the movement of energy
The fun videos and the Lingo Game
The funny videos, or the circuit.
The glow stick.
The hands on activities
The hands on activities you did.
The hands on activities.
The hands on experience with conducting electricity to power the lights. Also, the videos were short, funny, and engaging while getting the message across.
The hands-on activities.
the human circuit, the example of electricity flowing, the videos of how to conserve energy
The instructors were great!
The interaction and involvement of Students. Lingo and the videos were fun too!
The interactive activities
The involvement during the demonstrations.
The LINGO cards
The Lingo game
The Lingo game
The LINGO game, and the nightlights (when they come).
The Lingo Game. The videos.
The many interactive parts of the presentation.
The new video presentation was very fun and engaging. Plus, the hands on experiment with the students creating a circuit.
The new videos and the circuit activity
the new videos and the human circuit
The night light
The participation
The presenters helped keep the kids interested and they really loved the high five closed-circuit.
The really liked the BINGO game and they liked the video with the girl, she was very engaging.
The short movies with the spunky girl.
The simulation the presenters conducted with students to model how energy is harvested/created from water & air (the pinwheel, tube, generator, etc).
The stick that lights up when you complete the human circuit. They love it every time! The new videos were cute, too. :)
The students enjoyed being involved playing "LINGO" and volunteering at the front of the room. They enjoyed watching and being a part of a group of students conducting electricity to a load.
The students liked the Lingo.
The students really enjoyed the electricity demonstrations/activities. They also liked playing Lingo.
The Students to be able to share knowledge with presenters and to gain knowledge from presenters.
The students were engaged with the hands on activities
The use of Technology
The videos

In my opinion, the thing the students liked best about the materials/program was:
The videos
The videos and the interaction with the presenters
The volunteer activities
The whole presentation
They enjoyed the game and human "circuit."
They like the demonstrations showing conduction.
They like the two hands-on activities. The one that demonstrates power sources and the one that demonstrates conductors and insulators.
They love the hands on experiments like making the circuit. I like that it relates to our curriculum.
They love the Lingo game and learning what they can do to save money at their house. They are very excited and motivated to earn the Nightlight to use in their homes to save money.
They love the presentation
They loved the interactive bingo and the parts where students got up and participated.
Using the energy stick and trying out different conductors and insulators!
Video clips on how to save energy
Videos, LIngo & Night Lights
Was Lingo and they LOVED getting their light when they turned in their form.
Watching and learning about how electricity works, especially the human circuit with the light and the insulators, conductors.
When they were able to get in groups and learn about open and closed pathways
Your cute videos toward the end.

In the future, one thing I would change would be:
A better way for all students to see. We felt very cramped and I wish that more of the students would have been able to move and participate. I know its 50 students in 1 hour, but I wish more could have actively participated.
allow more students to try the human circuit
Being able to present to smaller groups, maybe 2 classes at a time instead of 4.
Better lighting for the screen and prizes for Lingo.
Break up the videos; having so many in a row was a bit much.
Clarify rules about LINGO, many students didn't understand that they were only supposed to fill out their card at certain times.
Even more connections to the UT Science core & more with the different types of electricity
even more visuals
Getting the night lights sooner, students ask about them every day.
Gift card for all participants regardless of student response.
Have the night lights ahead of time so the kids who turned in their surveys would get one right away. We (all of us at Bluffdale Elementary) are still waiting for ours.
Having more students participate in an activity
I can't think of anything I would change. I did notice some changes from previous years and I think you are right on track.
I can't think of anything right now.
I can't think of anything that requires changing.
I don't have any other suggestions
I don't think the students will really use/read the student guide.
I had numerous parents who had difficulties finding the survey online
I think every kid would benefit from the hands-on demonstration. Having a time when each class could come and tryout the circuit and the different materials would be beneficial to them.
I think the program is wonderful the way it is.
I think this is a great program.
I thought the whole thing was great. No changes needed.
I wish there were some way to recognize the students who get a Limbo. The students always seem discouraged by this.
I would add pictures of what some of the items on the home evaluation form are. We mostly have ELL students at our school, so having them see what they are looking for with their family would be helpful.
I would mention the safety need to stay away from the big green boxes in their yards. (A transformer near my house blew up last spring and the Rocky Mtn. power crew told me some pretty scary stories of people who didn't realize they shouldn't mess with the boxes.) Also, you may want to include instructions, or an example, at the top of the student home surveys to show whether you prefer an X or a check mark to answer the questions, as I got all different kinds of markings.
I would use the terms power source and pathway because that is what the core uses for the electricity unit
I would wait to tell about filling out the 'bingo' card, they got so caught in filling out the card, that some of them had difficulty focusing on the information.
Include more information on how homes can start using renewable energy resources.
it was great thank you
It was great.
It's a lot of information in a short amount of time.

In the future, one thing I would change would be:

Letting every student try to make a circuit with the sound toy during the presentation. They lost focus at that point.
Lingo
LINGO. I think a different game could simplify the process and still be equally as effective.
LINGO. Maybe take it out, or don't hand out cards until the game actually starts.
make it more applicable to 5th grade curriculum
Making sure that the prize arrives on time. We haven't received ours as of 10/29
More demos?
More instruction about Lingo before they get their cards
more interactive
Nothing - thank you! :)
Nothing :)
Nothing This was the best year ever!!!!!!
Nothing- great program
Nothing! Keep up the great work!
Nothing! It's wonderful!!
Nothing! Keep up the great work!
Nothing. It is always great!
Nothing. I thought it was great!
Nothing. It was seamless in my opinion
Perhaps add some movement or small group engagement opportunities to keep students focused.
Perhaps award small prizes for the Lingo, or a pencil, because students get disappointed when they win, but get nothing.
Perhaps have the night lights available at the time of the presentation.
Present with one class at a time, rather than having the whole grade in attendance.
Presenters came with there own mic-system. Sometimes we get the use of the auditorium for assemblies, yet sometimes we don't.
Shorten the presentation to accommodate for students' attention spans.
Small prizes for LINGO.
Small prizes for winning on the Bingo card
Still waiting on getting the nightlights to give out to the kids who completed the worksheet.
The pamphlets seemed like a lot of info that parents would never take the time to read. It seemed wasteful since they were so nicely made.
The presentation was a little dry. We were under the impression there would be more electrical experiments; many of our students reported feeling bored when we asked if they liked it.
The videos were a bit cheesy, even for the fifth graders, but otherwise the program was excellent!
The visuals on the powerpoint were a bit small and difficult to see from the back of the room.
Through some parts of the presentation there is a lot of information without breaking it up for students. The hands on and the videos all come toward the end. The students seem to have trouble focusing on the information given at the beginning.
tighten it up to be shorter. sitting more than 40 minutes is hard for kids
To have a bigger space for us to meet.
try to have more hands on activities
Trying to meet in a smaller room so the kids could all hear.

In the future, one thing I would change would be:

We should have thought through how cramped our space was. Nothing on your presentation, just better prepping on our part.
We were scheduled to have more students at the presentation than we have had in the past. Because there were so many students in the room the kids were kind of squished and had a hard time paying attention.

Be ***watt***smart
Begin at h☺me

Teacher ID: _____

Teacher Name: _____

Home Energy Worksheet

Student First Name: _____

Heating

1. Install and use a programmable or smart thermostat.
   ☐ Currently do ☐ Will do ☐ Neither
2. Caulk windows and weather strip outside doors.
   ☐ Have done ☐ Will do ☐ Neither
3. Inspect attic insulation and add insulation if needed.
   ☐ Have done ☐ Will do ☐ Neither
4. Keep furnace air filters clean/replaced regularly.
   ☐ Currently do ☐ Will do ☐ Neither

Cooling

5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.
   ☐ Have done ☐ Will do ☐ Neither
6. Close blinds when windows are exposed to the sun.
   ☐ Currently do ☐ Will do ☐ Neither
7. Use a fan instead of air conditioning.
   ☐ Currently do ☐ Will do ☐ Neither
8. Participate in Rocky Mountain Power's Cool Keeper program.
   ☐ Currently do ☐ Will do ☐ Neither

Water heating

9. Set the water heater temperature to 120º F.
   ☐ Have done ☐ Will do ☐ Neither
10. Install a high-efficiency shower head.
    ☐ Have done ☐ Will do ☐ Neither
11. Take 5 minute showers.
    ☐ Currently do ☐ Will do ☐ Neither
12. Wash full loads in the dishwasher and clothes washer.
    ☐ Currently do ☐ Will do ☐ Neither

Lighting

13. Replace inefficient bulbs with LED bulbs.
    ☐ Have done ☐ Will do ☐ Neither
14. Turn lights off when not in use.
    ☐ Currently do ☐ Will do ☐ Neither

Refrigeration

15. Replace old, inefficient refrigerator with an ENERGY STAR® model.
    ☐ Have done ☐ Will do ☐ Neither
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.
    ☐ Have done ☐ Will do ☐ Neither
17. Maintain refrigerator and freezer coils and check door seals twice yearly.
    ☐ Currently do ☐ Will do ☐ Neither

Electronics

18. Turn off computers, TVs and game consoles when not in use.
    ☐ Currently do ☐ Will do ☐ Neither

Cooking

19. Use a microwave oven, toaster oven, slow cooker or outdoor grill instead of a conventional oven.
    ☐ Currently do ☐ Will do ☐ Neither

Get paid for being *watt*smart

20. Visit Rocky Mountain Power at *wattsmart.com* for more energy-saving tips and rebates.
    ☐ Have done ☐ Will do ☐ Neither

National Energy Foundation
cultivating energy literacy

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

WAT UT

Home Energy Worksheet (Spanish)

Ser ***watt***smart
Empieza en casa

Identificación del profesor(a): _____

Nombre del profesor(a): _____

Verificación de Energía Doméstica

Primer nombre del estudiante: _____

Calefacción

1. Instalar y usar un termostato programable o termostato inteligente.
   ☐ Lo hago ☐ Lo haré ☐ Ninguno
2. Calafatear ventanas e instalar burletes en el exterior de las puertas.
   ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
3. Inspeccionar el aislamiento del ático y agregar aislamiento si es necesario.
   ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
4. Mantener los filtros de aire de la calefacción limpios/reemplezarlos regularmente.
   ☐ Lo hago ☐ Lo haré ☐ Ninguno

Enfriamiento

5. Reemplazar la unidad de aire acondicionado existente por una unidad de alta eficiencia o un enfriador evaporativo.
   ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
6. Cerrar las persianas cuando las ventanas están expuestas al sol.
   ☐ Lo hago ☐ Lo haré ☐ Ninguno
7. Usar un ventilador en lugar del aire acondicionado.
   ☐ Lo hago ☐ Lo haré ☐ Ninguno
8. Participar en el programa “Cool Keeper” de Rocky Mountain Power.
   ☐ Lo hago ☐ Lo haré ☐ Ninguno

Calentadores de agua

9. Programar el calentador de agua a 120º F.
   ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
10. Instalar un cabezal de ducha de alta eficiencia.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
11. Tomar duchas de 5 minutos.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno
12. Lavar cargas llenas en los lavaplatos y las lavadoras de ropa.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno

Iluminación

13. Reemplazar los focos ineficientes con focos LED.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
14. Apagar las luces cuando no estén en uso.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno

Refrigerador

15. Reemplazar refrigerador antiguo e ineficiente con un modelo de ENERGY STAR®.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
16. Desenchufar refrigeradores/congeladores viejos y/o desecharlos de una manera ambientalmente segura.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
17. Mantener las bobinas del refrigerador y del congelador e inspeccionar el sello de las puertas dos veces al año.
    ☐ Lo hago ☐ Lo hago ☐ Ninguno

Electrónicos

18. Apagar computadoras, televisores y consolas de juegos cuando no estén en uso.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno

Cocinar

19. Usar un horno microonda, un horno eléctrico, un olla de cocimiento lento o un parrilla de aire libre en lugar del horno convencional.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno

Reciba paga siendo *watt*smart

20. Visite Rocky Mountain Power en *wattsmart.com* para obtener más consejos y rebajas de ahorro de energía.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno

National Energy Foundation
cultivating energy literacy

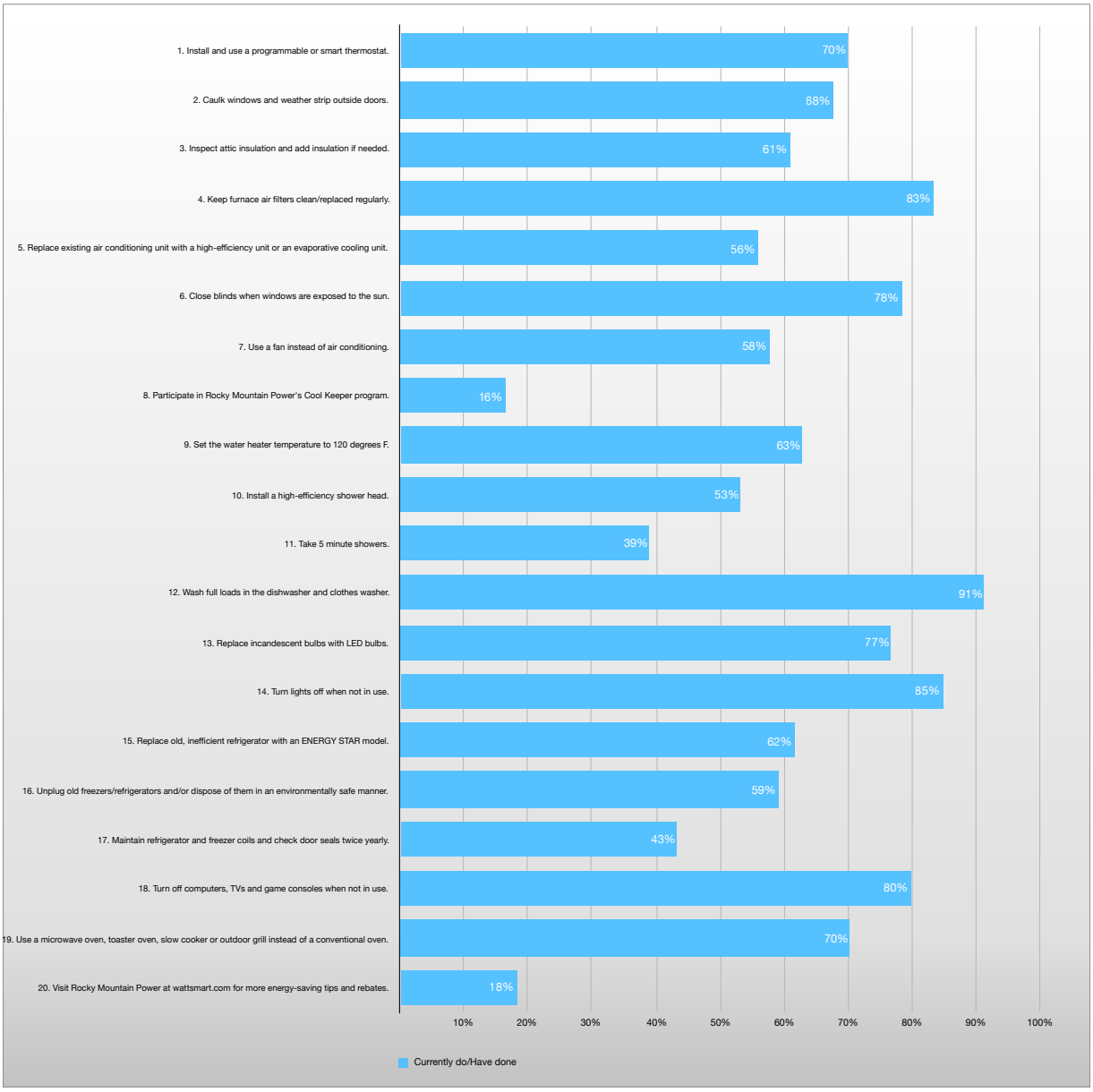
ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

WAT UT

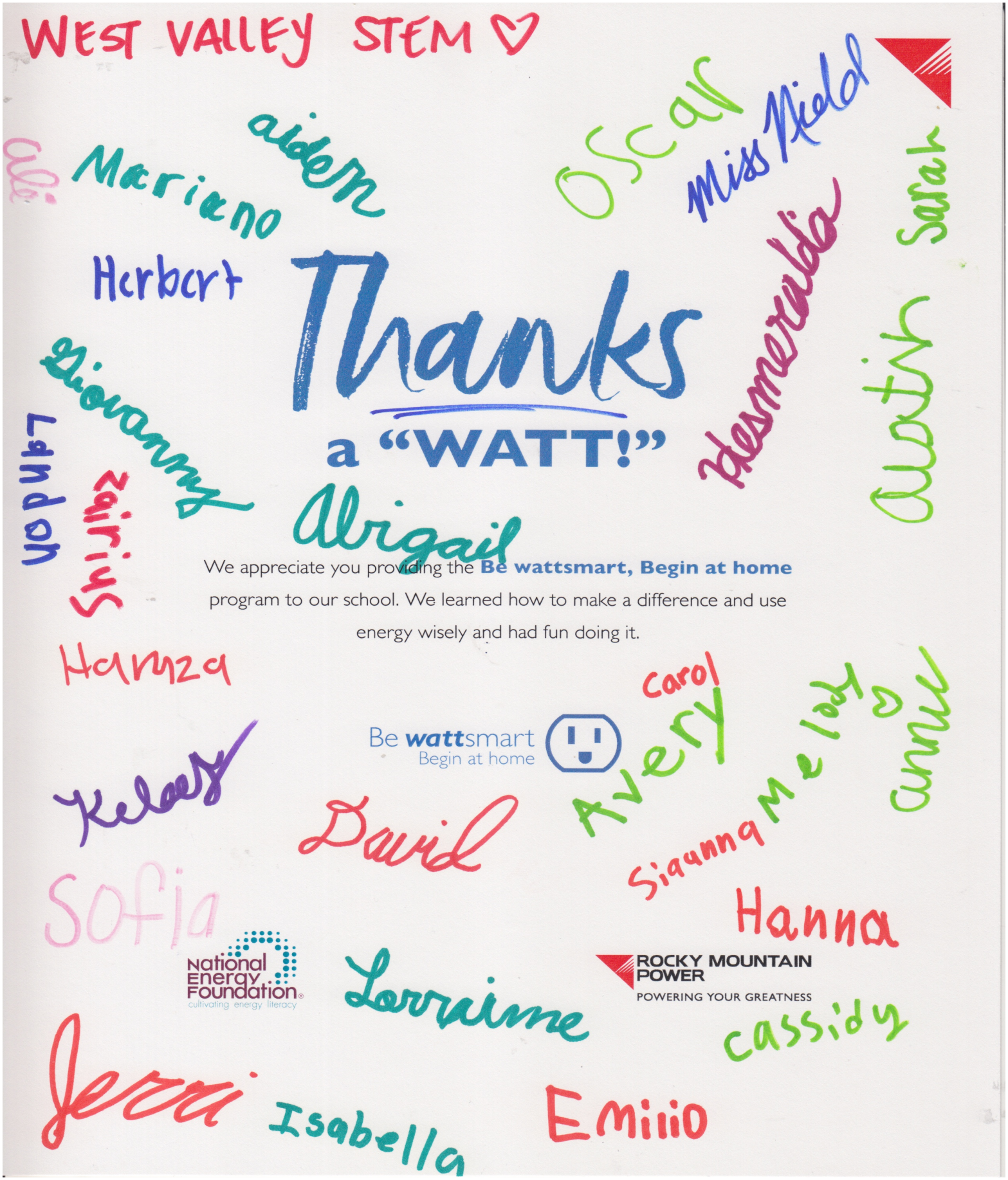
Home Energy Worksheet Summary – Rocky Mountain Power

Energy Efficient Activity	Currently do/Have done	Will do	Neither
1. Install and use a programmable or smart thermostat.	70%	14%	16%
2. Caulk windows and weather strip outside doors.	68%	19%	13%
3. Inspect attic insulation and add insulation if needed.	61%	18%	21%
4. Keep furnace air filters clean/replaced regularly.	83%	12%	4%
5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.	56%	17%	27%
6. Close blinds when windows are exposed to the sun.	78%	12%	10%
7. Use a fan instead of air conditioning.	58%	16%	26%
8. Participate in Rocky Mountain Power's Cool Keeper program.	16%	26%	57%
9. Set the water heater temperature to 120 degrees F.	63%	20%	17%
10. Install a high-efficiency shower head.	53%	20%	27%
11. Take 5 minute showers.	39%	27%	33%
12. Wash full loads in the dishwasher and clothes washer.	91%	5%	4%
13. Replace incandescent bulbs with LED bulbs.	77%	16%	7%
14. Turn lights off when not in use.	85%	13%	2%
15. Replace old, inefficient refrigerator with an ENERGY STAR model.	62%	16%	22%
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.	59%	16%	25%
17. Maintain refrigerator and freezer coils and check door seals twice yearly.	43%	38%	19%
18. Turn off computers, TVs and game consoles when not in use.	80%	15%	5%
19. Use a microwave oven, toaster oven, slow cooker or outdoor grill instead of a conventional oven.	70%	14%	16%
20. Visit Rocky Mountain Power at wattsmart.com for more energy-saving tips and rebates.	18%	56%	26%

Wise Energy Behaviors in Rocky Mountain Power Utah Homes



Sampling of *Thanks a "WATT" Cards*



Georgia

Thank you so Much - Mia

Emi

Thanks a "WATT!"

Thank you so much - Chiara

Dear

I enjoyed the presentation a lot. Thank you! - Ty

Miles

We appreciate you providing the **Be wattsmart, Begin at home** program to our school. We learned how to make a difference and use energy wisely and had fun doing it.

Thank you for coming! Claire

Kai O

Be wattsmart Begin at home

Fabulous presenters - Pam and Diane. Thank you for Claires engaging my students in Pro-Planet thinking!

I am very glad you guys came - Thank you

pedro

National Energy Foundation cultivating energy literacy

ROCKY MOUNTAIN POWER POWERING YOUR GREATNESS

Thanks

Thank you so much - Becky

Thank you guys for coming Emma F.

Thank You for coming! - Adele

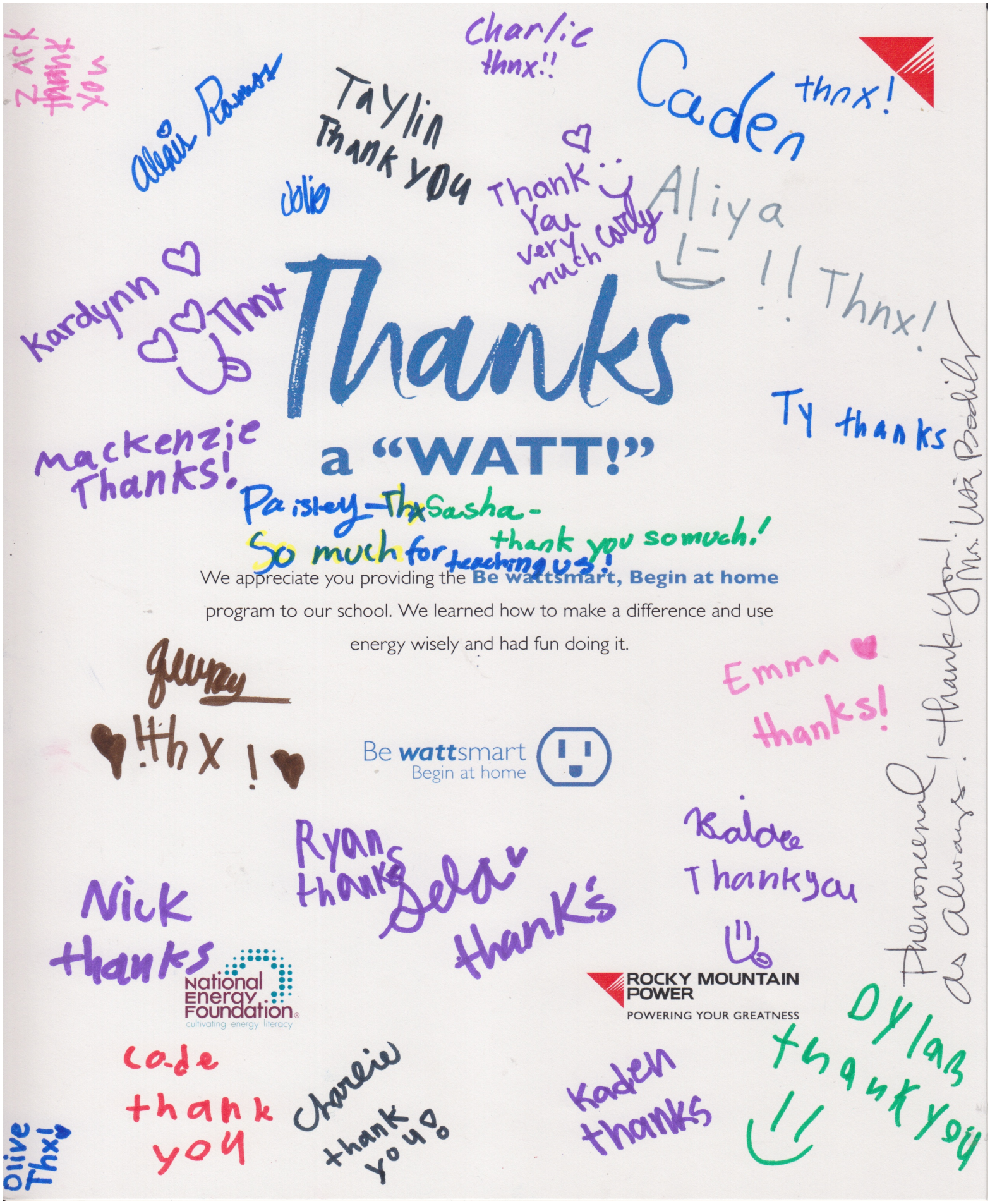
Thanks a "WATT!"

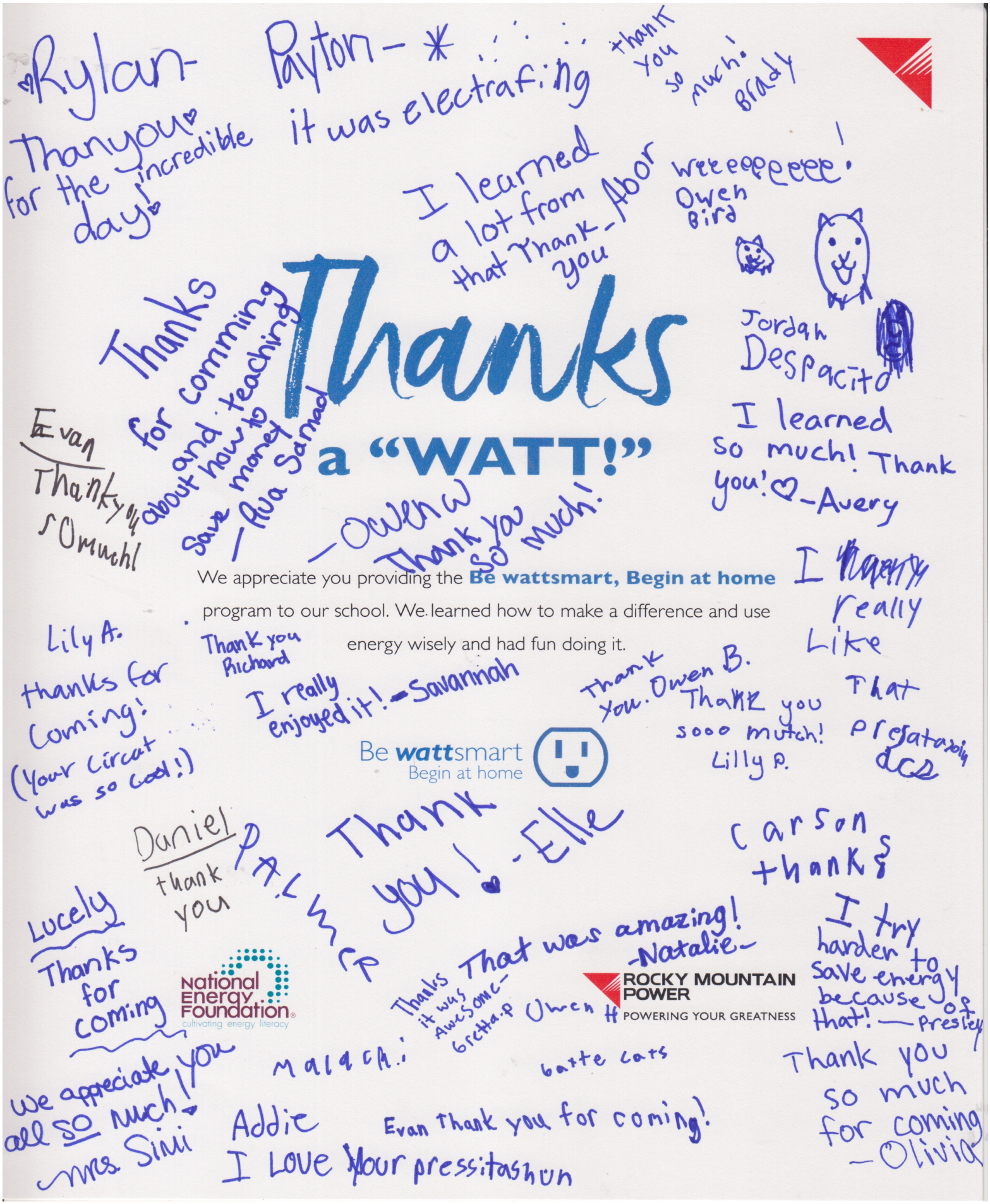
We appreciate you providing the **Be wattsmart, Begin at home** program to our school. We learned how to make a difference and use energy wisely and had fun doing it.

Be wattsmart Begin at home

National Energy Foundation
cultivating energy literacy

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS





ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Exhibit C

Creative and News Releases

wattsmart TV

- Good for Utah – Winter insights online
- Good for Utah – Spanish 78-degrees
- Good for Utah – Summer 78-degrees
- Smith's Food & Drug Stores :30
- Casper's FatBoy Ice Cream :30

wattsmart radio

- Good for Utah :60
- Good for Utah : 30
- Maverik :60
- Smith's Food & Drug Stores :60
- Casper's FatBoy Ice Cream :60
- Small Business Direct – Vernal :30
- Traffic radio – script
- Radio Underwriting - script

wattsmart Print

- Thank you ad
- Partners in Innovation large small
- Partners in Innovation update color
- Maverik color | b/w
- Smith's Food & Drug - color | b/w
- Casper's FatBoy Ice Cream – color | b/w
- Small Business Direct – Vernal
- Small Business Direct – Utah County
- Incentives for irrigation projects
- Irrigation ad update
- Small Business resource guide
- *Deseret News* Kid's Earth Day

wattsmart Video – longer format for digital, social, web

- Small Business Direct Install
- Casper's FatBoy Ice Cream
- Maverik
- Smith's Food & Drug Stores

Digital & Facebook

- Good for Utah Winter Facebook & YouTube
- Bueno – Spanish Summer digital ad
- Good for Utah – Summer Facebook video thumbnail
- Ceiling fan – cooling Facebook
- Ceiling fan – cooling digital
- Smart Thermostat - cooling Facebook
- Smart Thermostat – cooling digital
- Smart Thermostat – Black Friday Facebook
- HVAC Check-up Facebook Carousel ads | Ad 1 | Ad 2 | Ad 3
- Smith's Food & Drug digital
- Smith's Food & Drug Facebook

- Maverik Facebook
- Maverik YouTube
    - Maverik :30 (for YouTube)
- Maverik Digital mobile
- Maverik Digital static
- Casper's FatBoy Ice Cream Digital static
- Casper's FatBoy Ice Cream Facebook
- Small Business Direct – link to video
- Small Business Direct – West Haven
- Small Business Direct – South Ogden

Direct mail

- Cool Keeper letter
- Irrigation letter | LESA flyer and application – Spring
- Irrigation letter | VFD flyer application – Fall

Email

- Spring Home Show Email
- Evaporative Cooler Email
- Fall Home Show Email
- Black Friday Smart Thermostat Email
- Cool Keeper Pre-Season Email
- Thank you for being wattsmart

Collateral

- wattsmart Business Brochure – January 2018
- wattsmart Business Brochure – updated program changes – July 2018
- wattsmart Business Overview – January 2018
- wattsmart Business LED instant incentives – January 2018
- wattsmart Business Lighting Instant Incentives – July 2018
- wattsmart Business Oil and Gas Incentives
- wattsmart Business water and wastewater efficiency
- Partners in Innovation brochure
- Case study: Boston Building
- Case study: Project Open
- HVAC Instant Incentives Overview – January 2018
- Heating and Cooling Instant Incentives – residential – February 2018
- Advanced Rooftop Controls brochure
- Small Business Direct Brochure
- Small Business Direct next steps postcard
- Customer Solutions Brochure
- Evaporative Cooler Instant Incentives

Videos for Classroom Program

- Close the refrigerator
- Cooling off
- Dishwasher fun facts
- Light bulb bonanza
- Light ninja

Sample Web Features

Imagery on wattsmart.com:

Newsletters/Bill Inserts

Connect Newsletters

- April/May 2018 – Save with a Smart Thermostat
- July 2018 – Cool Moves for Saving Energy
- October 2018 – Get a jump on winter Savings

Bill Inserts

- Instant Savings on Smart Thermostats

News Releases

- Rocky Mountain Power Makes It Easier to Stay on Top of Winter Bills
- Celebrate Earth Day with Instant Savings on Smart Thermostats
- Extra Savings on Nest Thermostats, Just in Time for Summer
- Four Key Steps to Saving Energy During Summer Weather
- Salt Lake Manufacturer Taking Giant Steps in Energy Efficiency
- Headed Out of Town This Weekend? Save Energy By Putting Your Home in Vacation-Mode
- Energy Saving Tips to Manager your Winter Power Bill

Press Coverage for School Videos

- Fresh Living 11/8/18
- The Place 11/9/18
- Studio 5 11/12/18
- Facebook paid posts – Nov. 7-14, 2018

Photo from 2018 Salt Lake Tribune Home & Garden Festival

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Confidential Appendix 8
Confidential Cost Effectiveness
2018 Utah Peak Reduction

THIS EXHIBIT IS CONFIDENTIAL AND IS PROVIDED UNDER SEPARATE COVER

CONFIDENTIAL INFORMATION CERTIFICATE

IN DOCKET NO. 19-035-22

I have reviewed the Public Service Commission of Utah Rule R746-1-603 and/or the Protective Order entered by the Public Service Commission of Utah in Docket No. 19-035-22 with respect to the review and use of confidential information and agree to comply with the terms and conditions of the rule and/or Protective Order.

_____
Signature

_____
Name (Type or Print)

_____
Employer or Firm

_____
Business Address

_____
Party Represented

_____
Date Signed

CERTIFICATE OF SERVICE

Docket No. 19-035-22

I hereby certify that on June 18, 2019, a true and correct copy of the foregoing was served by electronic mail to the following:

Utah Office of Consumer Services	
Cheryl Murray	cmurray@utah.gov
Michele Beck	mbeck@utah.gov
Division of Public Utilities	
	dpudatarequest@utah.gov
Chris Parker	chrisparker@utah.gov
Artie Powell	wpowell@utah.gov
Brenda Salter	bsalter@utah.gov
Rocky Mountain Power	
Data Request Response Center	datarequest@pacificorp.com
Michael Snow	michael.snow@pacificorp.com
Jana Saba	jana.saba@pacificorp.com; utahdockets@pacificorp.com

Katie Savarin
Coordinator, Regulatory Operations