ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

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

June 1, 2020

VIA ELECTRONIC FILING

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 2019 Annual Energy Efficiency and Peak Load Reduction Report – Docket No. 20-035-27

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 2019 Annual Energy Efficiency and Peak Load Reduction Report ("2019 Report"). Appendix 8 to the 2019 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 2019 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, Regulatory Affairs

Utah Energy Efficiency and Peak Reduction Annual Report

January 1, 2019 – December 31, 2019

Issued June 1, 2020

ROCKY MOUNTAIN POWER

POWERING YOUR GREATNESS

(This page intentionally left blank)

TABLE OF CONTENTS

List of Abbreviations and Acronyms 4
Executive Summary 5
Regulatory Activities 9
DSM Expenditures 13
Planning Process 14
Peak Reduction Programs 17
Irrigation Load Control 18
Cool Keeper 19
Energy Efficiency Programs 23
Residential Programs 25
Wattsmart Homes 26
Home Energy Reports Program 30
Low Income Weatherization 32
Non-Residential Energy Efficiency 35
Communications, Outreach and Education 45
Evaluations 46

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
SEM	Strategic Energy Management
TRC	Total Resource Cost Test
UCT	Utility Cost Test
VFD	Variable Frequency Drive
WBVN	Wattsmart Business Vendor Network

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 948,710 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, 2019 through December 31, 2019.[1] The Company, on behalf of its customers, invested $53.3 million in energy efficiency and peak reduction resource acquisitions during the reporting period. The investment yielded approximately 272,385 megawatt hours ("MWh") in first year energy savings,[2] 2,833,872 MWh of lifetime savings[3] from 2019 energy efficiency acquisitions and maximum realized reductions associated with peak management activities of approximately 202 megawatts.[4] Net benefits based on the projected value of the energy savings over the life of the individual measures are estimated at $132 million [5].

The Demand-side Management ("DSM") portfolio was cost effective based on four of the five standard cost effectiveness tests[6] 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 2019 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 2019 Energy Efficiency Acquisitions was calculated by multiplying First Year Acquisitions (measured at the generator) by the weighted average measure life of the portfolio of 10.4 years. No discount was assumed for possible savings degradation over the life of the measures. Savings are gross at generator.
[4] Realized load as measured at generation.
[5] See Table 1 – Utility Cost Test Net Benefits.
[6] 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)[7]	2.03	$ 139,584,842
Total Resource Cost Test (TRC)[8]	1.84	$ 114,523,515
Utility Cost Test (UCT)[9]	2.11	$ 132,074,758
Participant Cost Test (PCT)[10]	2.57	$ (1,280,331)
Ratepayer Impact Cost Test (RIM)[11]	0.99	$ 134,669,048

2019 Performance Compared to Forecast

Table 2 compares the November filing to actual savings achieved.

[7] 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.
[8] 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.
[9] 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.
[10] The PCT compares the portion of the resource paid directly by participants to the savings realized by the participants.
[11] 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
2019 Forecast to Actual Savings Comparison

Utah 2019 DSM Programs	2017 IRP for 2019 (Gross - at Gen) MWH	MW	2019 Forecast (Gross - at Gen) MWH	MW	2019 Actual (Gross - at Gen) MWH	MW*
Class 1 - Load Control Programs						
A/C Load Control		115		115		202
Irrigation Load Control		20		20		N/A
Total Class 1		135		**135**		**202**
Class 2 - Residential Programs						
Low Income	N/A	N/A	180	0	283	0
Home Energy Reports	N/A	N/A	48,500	9	36,310	7
wattsmart Homes	N/A	N/A	61,365	12	64,287	12
Total Residential Class 2	**N/A**	**N/A**	**110,045**	**21**	**100,880**	**19**
Class 2 - Non-Residential Programs						
wattsmart Business	N/A	N/A	188,675	36	171,505	33
Total Non-Residential Class 2	**N/A**	**N/A**	**188,675**	**36**	**171,505**	**33**
Total Class 2	**255,190[12]**	**49**	**298,720**	**57**	**272,385**	**52**
Total Class 2 Forecast Estimated Savings Range with Home Energy Reports First Year Savings			**283,784 - 313,656**			
Total Class 2 with Home Energy Reports Incremental Savings Only			**242,430 - 267,949**	**48**	**236,076**	**45**

2019 Performance

Program and Sector level results for 2019 are provided in Table 3.

[12] The IRP accounts for incremental Home Energy Report (HER) savings only, whereas the 2019 forecast and the 2019 actuals account for first year savings. To provide greater parity for comparison purposes, the last two rows in Table 2 show Class 2 with and without HER savings.

Table 3[13]
Utah Program Results for January 1, 2019 – December 31, 2019[14]

Load Management Programs	MW/Yr Savings (at site)	MW/Yr Savings (at gen)	Program Expenditures
Cool Keeper	183	202	$ 6,026,271
Irrigation Load Control	N/A	N/A	$ 249,184
Total Load Management	**183**	**202**	**$ 6,275,455**
Energy Efficiency Programs	**kWh/Yr Savings (at site)**	**kWh/Yr Savings (at gen)**	**Program Expenditures**
Low Income Weatherization	259,176	283,326	$ 86,614
Home Energy Reporting	33,214,620	36,309,558	$ 858,307
wattsmart Homes	58,807,482	64,287,163	$ 12,984,642
Total Residential	**92,281,278**	**100,880,048**	$ 13,929,564
Total *Watt*smart Business	**158,675,944**	**171,505,374**	**$ 31,372,618**
Total Energy Efficiency	**250,957,222**	**272,385,421**	**$ 45,302,182**
Other Portfolio Expenditures			
Outreach and Communications			$ 1,161,480
Portfolio - EM&V Non-Residential			$ 34,581
Portfolio - EM&V Residential			$ 323,472
Portfolio - Systems Support			$ 147,369
Portfolio Potential Study			$ 18,033
Portfolio Energy Code Training			$ 70,616
Total Utah Program Expenditures			**$ 53,333,189**

[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 2019 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 February 1, 2019, the Company circulated its quarterly DSM Balancing Account Report for the fourth quarter of 2018 to the DSM Steering Committee.

- On February 8, 2019, an advice letter was filed in Docket No. 19-035-T01 to make changes to the *wattsmart Business* program, administered through Schedule 140. Changes were proposed to modify the design of lighting system retrofits, add new measure variations for Advanced Rooftop Unit controls, and adjust incentives for mid-market lighting and new construction. The Commission approved the proposed changes in its order issued April 22, 2019, with an effective date of April 23, 2019.

- On March 19, 2019, an advice letter was filed in Docket No. 19-035-T04 to make changes to the *Low Income Weatherization* program, administered through Schedule 118. Changes were proposed to add eligibility for insulation to homes with cooling systems, allow for the replacement of inefficient evaporative coolers and window air conditioning units, add crisis measure funding, and to extend energy education funding to all program participants. The Commission approved the proposed changes in its order issued April 11, 2019, with an effective date of April 19, 2019.

- On March 22, 2019, an advice letter was filed in Docket No. 19-035-T05 to make changes to the *Cool Keeper* program, administered through Schedule 114. Changes were proposed to update the structure of Schedule 114 to become an umbrella tariff for demand response offerings, extend the dispatch period and hours, increase incentives, and change the current incentive structure for customers from a one-time annual bill credit to a monthly credit for each month of program participation. The Commission approved the proposed changes in its order issued April 17, 2019, with an effective date of April 22, 2019.

- On April 24, 2019, 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 shifting incentives for central air conditioner and gas furnaces with electrically commutated motors from a split customer and mid-market incentive to solely mid-market. The intent of this shift was to drive market transformation by improving stocking practices and increasing the availability of more energy efficient HVAC equipment through distributor and manufacturing channels. Notice of these changes was also sent to the DSM Steering Committee on April 24, 2019. The posted modifications went into effect June 10, 2019.

- On April 24, 2019, a 45-day notice was posted on the Company's website to make modifications to the wattsmart Business program through the "up to" incentive process established in Docket No. 16-035-T03. Key modifications included shifting incentives for air-cooled packaged unitary commercial air conditioners from a split customer and mid-market incentive to solely mid-market. The intent of this shift was to drive market transformation by improving stocking practices and increasing the availability of more energy efficient HVAC equipment through distributor and manufacturing channels. Notice of these changes was also sent to the DSM Steering Committee on April 24, 2019. The posted modifications went into effect June 10, 2019

- On May 1, 2019, the Company circulated its quarterly DSM Balancing Account Report for the first quarter of 2019 to the DSM Steering Committee.

- On June 18, 2019, the 2018 Energy Efficiency and Peak Reduction Report was filed in Docket No. 19-035-22. The Commission approved a one-time extension request to shift the due date of this report in its order issued May 15, 2019. The Commission acknowledged the report as being compliant with reporting requirements in its correspondence issued August 6, 2019.

- On July 1, 2019, the Company filed its DSM Spring Semi-Annual Forecast Report in Docket No. 19-035-28. The Commission acknowledged the report as being compliant with reporting requirements in its correspondence issued August 21, 2019.

- On July 16, 2019, an advice letter was filed in Docket No. 19-035-T10 to make changes to the *wattsmart Homes* program, administered through Schedule 111. Changes were proposed to 1) retire offerings for advanced power strips, insulation, low-flow showerheads with thermostatic valves, and gas furnaces with electronically commutated motors, 2) add new offerings for evaporative coolers, ground source heat pumps, whole house ventilation fans, rooftop heat tape timers, and new homes, and 3) adjust offerings for smart thermostats, evaporative coolers, central air conditioners, and heat pumps. The Commission approved the proposed changes in its order issued August 9, 2019, with an effective date of August 15, 2019.

- On July 31, 2019, the Company circulated its quarterly DSM Balancing Account Report for the second quarter of 2019 to the DSM Steering Committee.

- On October 25, 2019, the Company posted its *wattsmart Homes* 2017-2018 Program Evaluation to its website and notified the DSM Steering Committee.

- On November 1, 2019, the Company circulated its quarterly DSM Balancing Account Report for the third quarter of 2019 to the DSM Steering Committee

- On November 1, 2019, the Company filed its DSM Fall Semi-Annual Forecast Report in Docket No. 19-035-28. The Commission acknowledged the report as being compliant with reporting requirements in its correspondence issued December 23, 2019.

- On December 20, 2019, the Company filed for approval of its 2019 Strategic Communications and Outreach Plan for DSM programs in Docket No. 19-035-44. The Commission approved the plan in its order issued January 16, 2020, with an effective date of January 20, 2020.

- On December 30, 2019, an advice letter was filed in Docket No. 19-035-T08 to issue a one-time $22 million refund to customers through Schedule 194 on their February 2020 electric bills. The credit was to be 32.5 percent of customers' total Schedule 193 charges from January 2019 to December 2019. The Commission approved the one-time refund in its order issued January 24, 2020, with an effective date of February 1, 2020.

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 2019 on various matters and held formal meetings on the following matters:

February 12, 2019 – DSM Steering Committee
- Reviewed the purpose and role of the DSM Steering Committee;
- Provided an update on demand response; and
- Reviewed cost effectiveness rules and standards.

June 25, 2019 – DSM Steering Committee
- Reviewed the semi-annual report;
- Reviewed the marketing research survey results;
- Discussed incentive comparison methodology related to *wattsmart Business*;
- Provided an update on the *Irrigation Load Control* program; and
- Discussed advice letter proposals for *wattsmart Homes*.

June 25, 2019 – DSM Advisory Group
- Reviewed the 2018 DSM Annual Report; and
- Reviewed program evaluations.

August 22, 2019 – DSM Steering Committee
- Discussed the 2019 IRP publication delay;
- Discussed cost effectiveness research;
- Reviewed cost effectiveness of *wattsmart Homes* program; and
- Discussed program strategy for small business direct install delivery channel.

October 29, 2019 – DSM Steering Committee

- Discussed the 2019 IRP publication;
- Discussed the November 1st 2020 Forecast Report;
- Discussed Schedule 193 rate analysis;
- Provided an update on the *Cool Keeper* program;
- Discussed *wattsmart Business* vendor incentives;
- Discussed 2020 marketing campaign and survey results; and
- Brainstormed ways to improve the DSM Advisory Group.

November 21, 2019 – DSM Advisory Group

- Reviewed the 2017-2018 *wattsmart Homes* Program Evaluation

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 2019 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
18-Dec					$ (16,881,296)	$ (13,057,310)
19-Jan	$ 2,306,948	$ 409,558	$ (5,541,819)	$ (141,978)	$ (20,258,145)	$ (16,024,601)
19-Feb	$ 3,129,924	$ (851,191)	$ 8,834,474	$ (109,568)	$ (8,403,315)	$ (5,020,962)
19-Mar	$ 3,365,855	$ 929,979	$ (4,918,665)	$ (70,454)	$ (10,026,579)	$ (5,714,248)
19-Apr	$ 4,141,931	$ (298,685)	$ (4,518,162)	$ (78,398)	$ (10,481,209)	$ (6,467,562)
19-May	$ 3,733,449	$ (389,337)	$ (4,543,908)	$ (83,553)	$ (11,375,222)	$ (7,750,912)
19-Jun	$ 3,123,513	$ 1,099,368	$ (5,556,106)	$ (96,640)	$ (13,904,454)	$ (9,180,777)
19-Jul	$ 4,088,790	$ 377,100	$ (6,966,777)	$ (117,761)	$ (16,900,202)	$ (11,799,424)
19-Aug	$ 4,218,558	$ 101,144	$ (7,886,882)	$ (143,786)	$ (20,712,312)	$ (15,510,391)
19-Sep	$ 5,581,425	$ (705,972)	$ (7,345,074)	$ (165,735)	$ (22,641,696)	$ (18,145,747)
19-Oct	$ 4,156,269	$ 757,369	$ (4,957,659)	$ (176,850)	$ (23,619,937)	$ (18,366,619)
19-Nov	$ 5,012,554	$ 360,815	$ (4,730,751)	$ (180,202)	$ (23,518,336)	$ (17,904,203)
19-Dec	$ 8,789,582	$ 276,491	$ (5,301,477)	$ (167,118)	$ (20,197,350)	$ (14,306,725)
2019 Total	**$ 51,648,796**	**$ 2,066,639**	**$ (53,432,808)**	**$ (1,532,043)**		

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.

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

- **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 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

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

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.

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 2019, 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 247 MW of maximum potential demand reduction (gross at generation) in 2019. 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

[17] 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.

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 28 through August 16 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 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 and participation for the 2019 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)	20
Maximum Potential MW (at Gen)	12
Average Realized load MW (at Gen)	N/A
Maximum Realized load MW (at Gen)	N/A
Participation Customers	40
Participation (Sites)	182

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 participants.

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 zero load control events initiated called in 2019. In general energy prices were low during the program control season and it did not make economic sense to call upon the program. For the program to add value and lower overall net power costs, the participating load does not need to always be curtailed. The available load from the Irrigation program can be utilized as a reserve which provides value to the program and benefits customers.

COOL KEEPER

The *Cool Keeper* program is an air conditioner direct load management program targeting residential and commercial customers who cool their homes and businesses with electric central air conditioners. The program is called upon for a curtailment under varying circumstances. Due to the flexibility of the program and the real-time dispatch capabilities the resources can be utilized for various smart grid applications. When there is a grid need, 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 a monthly bill credit for participation. The maximum annual incentive for participation is $30 or $60 depending on the size of the air-conditioner. The program is available May 1 through September 30 and its hours are from 2 pm to 9 pm Mountain Time, Monday through Friday, and excludes holidays. The program is limited to 100 hours per program year and events will be limited to four hours per day. In the event of a system emergency, the Company may, at its discretion, expand the dispatch parameters as noted in the tariff[18]. For program participants who are not enrolled for the entire season will receive a daily pro-rated credit for program participation.

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.

[18] https://www.rockymountainpower.net/content/dam/pcorp/documents/en/rockymountainpower/rates-regulation/utah/rates/114_Load_Management_Program.pdf

A summary of the program's cost effectiveness, performance and participation are provided in Tables 8 and 9 below.

Table 8
Cost Effectiveness for *Cool Keeper*

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

Table 9
Program Performance for *Cool Keeper*

Total Enrolled MW (at Gen)	215
Maximum Potential MW (at Gen)	235
Average Realized Load MW (at Gen)	77
Maximum Realized MW (Gross – at Gen)	202
Total Participation	215,000

Cool Keeper Load Control Events and Performance

There were 19 control events initiated in 2019. The date, time and estimated impact for each event is provided in Table 10. During the 2019 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 has the ability to be called upon real-time (no notification) which increases the value and flexibility of the resource. This flexibility allows the program to be utilized for frequency response and contingency reserve obligations which create more opportunities for the program to be called upon.

The program called significant more events during 2019 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 or business. Customer satisfaction for the overall program remained very high during 2019 based on annual customer surveys performed by the program administrator.

Table 10
Cool Keeper Load Control Events

Date	Event	Event Times (MST)	Utah Reductions (MW)
5/16/2019	1	15:58 - 16:10	21
6/27/2019	2	13:20 - 13:25	36
7/26/2019	3	1:12 - 1:17	62
8/1/2019	4	13:51 - 13:56	103
8/3/2019	5	14:41 - 14:46	138
8/5/2019	6	11:01 - 11:06	101
8/7/2019	7	9:36 - 9:42	67
8/16/2019	8	9:21 - 9:26	39
8/18/2019	9	19:38 - 20:00	202
8/21/2019	10	2:41 - 2:50	43
8/23/2019	11	11:43 - 11:48	48
9/2/2019	12	3:29 - 3:34	45
9/3/2019	13	13:15 - 13:20	74
9/4/2019	14	17:22 - 17:45	191
9/5/2019	15	15:35 - 16:16	159
9/10/2019	16	22:22 - 22:27	30
9/11/2019	17	21:52 - 21:57	17
9/19/2019	18	3:01 - 3:06	16
11/4/2019	19	5:32 - 5:37	0

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

A tariff change occurred in 2019 to increase program participation incentive. The incentives increased from $20 to $30 for residential and from $40 to $60 for commercial air conditioners. In addition to increasing participation incentives, the incentives during 2019 were provided as a monthly bill credit to participating customers.

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, and Low Income Weatherization – Schedule 118, and Non-Residential Energy Efficiency (wattsmart 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 two 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 2019 energy efficiency portfolio is provided in Table 11.

Table 11
Cost Effectiveness for Energy Efficiency Portfolio

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	0.85	$ (13,954,033)
TRC	0.77	$ (20,968,908)
UCT	1.49	$ 23,091,017
PCT	2.28	$ 108,160,365
RIM	0.39	$ (111,661,569)

Table 12 provides a program-level summary of gross and net savings acquired in 2019 at site and at generation.

Table 12
Energy Efficiency Gross and Net Savings[19]

Program	Gross kWh savings (@ site)	Net kWh savings (@ site)	Gross kWh savings (@ gen)	Net kWh savings (@ gen)
Low Income Weatherization	259,176	259,176	283,326	283,326
Home Energy Reporting	33,214,620	32,550,328	36,309,558	35,583,368
wattsmart Homes	58,807,482	39,182,099	64,287,163	42,833,087
*watt*smart Business	158,675,945	129,858,830	171,505,374	141,172,131
Total	**250,957,223**	**201,850,433**	**272,385,421**	**219,871,912**

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

Estimated Peak Contributions

The reported capacity reduction of 45.73 MW (at generation) for energy efficiency programs during 2019 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 2019 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 13.

Table 13
Estimated Peak Contribution

Description	Value
First year energy efficiency program MWh savings acquired during 2019 @ Gen	272,385
Conversion factor: Coincident MW/MWh	0.0001679
Estimated coincident peak MW contribution of 2019 energy efficiency acquisitions	45.73[20]

[20] The 52 MW in Table 2 was calculated using an average conversion value, while the 45.73 MW reported in Table 13 used a specific coincident system peak conversion factor.

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.*

The residential portfolio was cost effective based on two of the five standard cost effectiveness tests for the 2019 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 14 shows the cost effectiveness results for the residential portfolio. Includes all residential-sector portfolio costs.

Table 14
Cost Effectiveness for Residential Portfolio

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	0.67	$ (11,684,649)
TRC	0.61	$ (13,836,779)
UCT	1.51	$7,268,267
PCT	1.98	$33,104,459
RIM	0.35	$ (40,620,871)

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 15 below.

Table 15
Cost Effectiveness for *wattsmart Homes*

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	0.64	$ (12,272,532)
TRC	0.58	$ (14,255,910)
UCT	1.53	$ 6,849,137
PCT	1.86	$ 29,170,041
RIM	0.35	$ (37,168,522)

Program participation by measure category is provided in Table 16 and by delivery channel in Table 17.

Table 16
Program Performance by Measure Categories (Units)

Measure Category	Total kWh (at Site)	Total Incentive	Total Quantity
Appliances	-	$ -	77
Building Shell	298,624	$ 195,123	2,063,157 sq ft
Energy Kits	527,378	$ 17,329	2,179
HVAC	10,223,386	$ 2,347,248	23,896
Lighting	36,214,803	$ 2,108,500	1,878,456
Plumbing	-	$ -	2
New Homes	1,960,936	$ 875,175	31,042
Water Heating	1,362,726	$ 55,661	387,404
Whole Building	8,219,629	$ 2,229,924	4,386,213
Grand Total	**58,807,482**	**$ 7,828,960**	

Table 17
Program Performance by Delivery Channel

Delivery Channel	Total kWh (at Site)	Total Incentive	Total Quantity
Downstream	**13,969,736**	**$ 3,867,644**	
Appliances	-	$ -	2
Building Shell	298,624	$ 195,123	2028sq ft
Energy Kits	527,378	$ 17,329	2,179
HVAC	2,954,067	$ 546,643	10,897
Lighting	-	$ -	54
Plumbing	-	$ -	2
New Homes	1,960,936	$ 875,175	4,295
Water Heating	9,101	$ 3,450	12
Whole Building	8,219,629	$ 2,229,924	217
Midstream	**3,342,549**	**$ 1,328,330**	
HVAC	3,342,549	$ 1,328,330	9,530
Upstream	**41,495,197**	**$ 2,632,986**	
HVAC	3,926,769	$ 472,275	88
Lighting	36,214,803	$ 2,108,500	4,070
Water Heating	1,353,625	$ 52,211	54
Grand Total	**58,807,482**	**$ 7,828,960**	

Table 18 below shows new construction measures offered, broken out by single family and multifamily participation rates.

Table 18
New Construction Single Family and Multifamily Participation

New Construction Measures	Total kWh (at Site)	Total Incentives
Single Family		
Central Air Conditioner	19,376	$ 10,400
95% Gas Furnace with ECM	80,431	$ 44,850
Smart Thermostat	35,866	$ 7,900
ENERGY STAR certification	50,640	$ 15,825
HERS index 56-62	444,480	$ 225,050
HERS index 49-55	1,181,139	$ 501,900
HERS index <=48	146,581	$ 68,000
Total Single Family	**1,958,513**	**$ 873,925**
Multi-Family		
New Construction	3,517,863	$ 887,677
Total Multi-Family	**3,517,863**	**$ 887,677**
Grand Total	**5,476,376**	**$ 1,761,602**

The custom multifamily offering includes low income and market rate properties. Table 19 provides savings results for the custom multifamily program in 2019.

Table 19
Custom Multifamily

Custom Multifamily	Total kWh (at Site)	Total Incentives
Low Income	**3,500,337**	**$ 1,050,101**
New Construction	164,223	$ 49,267
Retrofit	3,336,114	$ 1,000,834
Market Rate	**4,719,292**	**$ 1,179,823**
New Construction	3,353,640	$ 838,410
Retrofit	1,365,652	$ 341,413
Grand Total	**8,219,629**	**$ 2,229,924**

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

Since 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.

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 20.

Table 20
Cost effectiveness for Home Energy Reports Program

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	1.93	$798,623
TRC	1.75	$647,993
UCT	1.75	$647,993
PCT	N/A	N/A
RIM	0.34	$ (2,888,229)

Table 21 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 in November 2018. The program was able to improve cost effectiveness in 2019 compared to 2018 due to reduced program costs. The overall program costs were lower due to sending more electronic reports (email) and not incurring startup cost associated with transitioning to a new program administrator during 2018.

Table 21
Savings and Participation for Home Energy Reports

	Legacy	Expansion	Refill	Refill 2	Total
2019 Savings MWh	15,890	12,955	2,548	1,822	**33,215**
Participation as of Dec. 2019	58,099	125,676	25,060	82,061	**290,896**

Reports were initially provided to approximately 322,549 customers in 2019. 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 2019, only 0.74% of customers (2,379 customers) have requested to be removed from the program. As of December 2019, there were 290,896 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.

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 2019, the program achieved savings at site of 259,176 kWh and served 295 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 except for ceiling insulation and wall insulation which are now applicable for dwellings with permanently installed operable electric space heating systems and/or cooling systems.

Cost effectiveness results for 2019 are provided in Table 22.

Table 22
Cost Effectiveness for Low Income Weatherization

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	2.30	$112,733
TRC	2.09	$94,610
UCT	2.09	$94,610
PCT	N/A	N/A
RIM	0.43	$ (240,647)

Total savings, measure type and the corresponding numbers of homes that installed the measure type are provided in Table 23.

Table 23
Total Savings, Homes Served and Measure Counts

Total kWh Savings @ Site	259,176
Participation – Total number of Homes Served	295
Measure Type Installed in Each Home	**#**
Furnace Fans	73
Duct Sealing/Insulation	3
Refrigerator Testing on Models not Replaced	18
Refrigerator Replacements	22
LED Bulbs (total installed)	58
Wall Insulation	1
Ceiling Insulation	20
Double Glass Replacement	1
Energy Education	65
Faucet Aerators	1
Low Income Weatherization Payments	31
Low Income Weatherization Typical	2

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/2019/02/f59/wpn-19-3-poverty-income-guidelines.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

On March 19, 2019, the Company filed changes to Utah Tariff Schedule No. 118, Low Income Weatherization Program. Changes included:

- Modifying eligibility for homes with central air condition systems or evaporative coolers to be eligible for ceiling and wall insulation measures.
- Extending Energy Education reimbursement to all households regardless of the heating type.
- Replacement of inefficient evaporative coolers and window air conditioning units with cost-effective evaporative coolers.
- Customer crisis measure in which Rocky Mountain Power reimburses agency 50% of associated costs incurred for the repair and/or replacement of heating and cooling system when determined a crisis situation for the participant.

All changes listed above were approved by the Public Service Commission of Utah in its order issued April 11, 2019, with an effective date of April 19, 2019.[21]

[21] Docket No. 19-035-T04

NON-RESIDENTIAL ENERGY EFFICIENCY

The commercial, industrial and agricultural energy efficiency program portfolio is offered through a single Non-Residential Energy Efficiency program called Wattsmart Business.

Wattsmart Business is designed to influence new and existing non-residential customers to increase the efficiency of electricity usage through the installation of energy efficiency measures and adoption of improved energy management protocols. Qualifying measures include those which, when implemented in an eligible facility, produce verifiable electric energy efficiency improvements.

Cost effectiveness results for 2019 are provided in Table 24 and is shown with and without sector-level portfolio costs.

Table 24
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	0.98	$ (837,304)	0.99	$ (399,965)
TRC	0.90	$ (5,700,049)	0.90	$ (5,262,710)
UCT	1.55	$ 17,254,829	1.57	$ 17,692,168
PCT	2.48	$ 75,055,907	2.51	$ 75,493,246
RIM	0.41	$ (69,608,619)	0.41	$ (69,171,280)

Total incentives, savings and completed projects are provided in Tables 25 - 27 by customer sector, measure category and delivery channel.

Table 25
Participation by Sector

Sector	Total kWh (at Site)	Total Incentive	Bill Credits	Total # of Projects
Commercial	121,197,233	$ 14,320,895	$ 84,482	4,341
Industrial	35,117,385	$ 3,018,314	$ -	242
Irrigation	2,361,327	$ 209,917	$ -	44
Grand Total	**158,675,945**	**$ 17,549,125**	**$ 84,482**	**4,627**

Table 26
Participation by Measure Category

Measure Category	Total kWh (at Site)	Total Incentive	Bill Credits	Total # of Projects
Additional Measures	4,241,356	$ 585,388	$ -	33
Building Shell	884,657	$ 241,473	$ -	39
Compressed Air	5,397,164	$ 514,043	$ 84,482	34
Direct Install	12,386,841	$ 3,595,022	$ -	1,575

Measure Category	Total kWh (at Site)	Total Incentive	Bill Credits	Total # of Projects
Electronics	31,034	$ 3,945	$ -	2
Energy Management	39,983,199	$ 799,664	$ -	109
Farm & Dairy	67,361	$ 9,670	$ -	4
Food Service Equipment	549,803	$ 36,601	$ -	16
HVAC	27,142,752	$ 3,874,819	$ -	319
Irrigation	2,309,690	$ 200,759	$ -	42
Lighting	51,787,840	$ 5,359,477	$ -	2,360
Motors	10,396,034	$ 1,249,906	$ -	65
Refrigeration	3,498,214	$ 515,481	$ -	18
Energy Proj Mgr Co-fund	-	$ 562,876	$ -	11
Grand Total	**158,675,945**	**$ 17,549,125**	**$ 84,482**	**4,627**

Table 27
Participation by Delivery Channel

Delivery Channel	Total kWh (at site)	Total Incentive	Bill Credits	Total # of Projects
Contracted	**138,876,323**	**$ 158,675,945**	**$ 84,482**	**4,535**
Additional Measures	3,687,903	$ 3,687,903	$ -	29
Building Shell	825,532	$ 825,532	$ -	34
Compressed Air	4,176,217	$ 4,176,217	$ 84,482	27
Direct Install	12,386,841	$ 12,386,841	$ -	1,575
Electronics	31,034	$ 31,034	$ -	2
Energy Management	31,881,900	$ 31,881,900	$ -	82
Farm & Dairy	67,361	$ 67,361	$ -	4
Food Service Equipment	549,803	$ 549,803	$ -	16
HVAC	20,059,262	$ 20,059,262	$ -	291
Irrigation	2,309,690	$ 2,309,690	$ -	42
Lighting	51,620,376	$ 51,620,376	$ -	2,360
Motors	8,823,954	$ 8,823,954	$ -	59
Refrigeration	2,456,450	$ 2,456,450	$ -	13
Energy Proj Mgr Co-fund	-	$ -	$ -	1
In-house	**19,799,622**	**$ 19,799,622**	**$ -**	**92**
Additional Measures	553,453	$ 553,453	$ -	4
Building Shell	59,125	$ 59,125	$ -	5
Compressed Air	1,220,947	$ 1,220,947	$ -	7
Energy Management	8,101,299	$ 8,101,299	$ -	27
HVAC	7,083,490	$ 7,083,490	$ -	28
Lighting	167,464	$ 167,464	$ -	-
Motors	1,572,080	$ 1,572,080	$ -	6
Refrigeration	1,041,764	$ 1,041,764	$ -	5
Energy Proj Mgr Co-fund	-	$ -	$ -	10
Grand Total	**158,675,945**	**$ 178,475,567**	**$ 84,482**	**4,627**

Incentives and services offered through Wattsmart Business include:

- Typical Upgrades: streamlined incentives for lighting, HVAC, compressed air and other equipment upgrades that increase electrical energy efficiency and exceed code energy efficiency requirements.
- Small Business Direct Install: provides enhanced incentives for lighting retrofits installed by a Rocky Mountain Power contractor at eligible small business customer facilities.
- Midstream/LED instant incentives: Provides instant, point-of-purchase incentive for LED lamps, fixtures and retrofit kits sold through qualifying participating distributors. Customers purchasing qualifying equipment from non-participating suppliers can apply for incentives after purchase.
- Custom Analysis: 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 management projects can range in size from small Tune-ups to the robust Strategic Energy Management offering.
- Energy Project Manager Co-funding: available to customers who can commit to an annual goal of completing projects resulting in a minimum of 1,000,000 kWh per year in energy savings.

Program Management

The Utah Wattsmart Business Program Manager is also responsible for the Wattsmart Business program in Idaho and Wyoming. For each state, the Program Manager is responsible for managing program implementers, achieving and monitoring program performance/compliance, recommending changes in customer and vendor participation terms and conditions, cost effectiveness, inputs for regulatory changes, marketing, ensuring satisfactory customer complaint resolution, overseeing customer care center agent training (internal and 3rd party call centers) and contracting with program implementers through competitive bid processes.

Program Administration

Wattsmart Business was historically administered through two delivery models that were differentiated based upon customer size and need: 1) internal DSM delivery and 2) contracted DSM delivery. Internal delivery centered on large customers for primarily custom projects, whereas contracted delivery centered on small/medium customers for primarily typical measure projects. The internal program delivery approach was used from January 1, 2019 to June 30, 2019. On July 1, 2019 the program shifted to a fully contracted model, meaning all Utah Wattsmart Business delivery became administered by contracted implementers. The change in program administration was intended to improve customer experience by adding more contracted staff dedicated specifically to Utah Wattsmart Business customers and reducing the project timelines. A narrative of the program administration approaches is described below.

Internal DSM Delivery (January 1, 2019 to June 30, 2019)

Internal DSM Delivery targeted large energy users who generally had multiple opportunities for energy efficiency improvements, such as those that required complex custom analysis. These large projects were administered by internal Company project managers and allowed for a single point of contact to assist customers with their various opportunities. Project managers were responsible for the following:

- Single point of contact for large customers to assist with 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 17, Wattsmart Business Vendor Network Delivery Firms, below.)
- Manage engineering firms to ensure program compliance, quality of work and customer satisfaction.
- Manage Wattsmart Business projects through the whole project lifecycle from project inception to incentive payment.

Contracted DSM Delivery

The Contracted DSM delivery channel targets typical measure upgrades that serve 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 vendor coordination, training and application processing services for commercial measures and industrial/agricultural measures respectively. As of July 1st 2019, Cascade now manages the former "Internal DSM Delivery" (DSM relationship management and custom energy analysis services for large customers). Willdan manages the Small Business Direct Install and Resource Extraction offers.

Nexant and Cascade are responsible for the following:

- Vendor and Midstream/LED instant incentive engagement – includes identification, recruiting, training, supporting and assisting vendors and distributors 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 incentive project management or small/medium customer projects, including the Energy Management offer.
- Nexant provides typical measure support to vendors and customers while also receiving typical measure applications and processing/delivering incentive checks to customers and qualified vendors.
- DSM relationship management and custom analysis for large customer projects, including Energy Management and Energy Project Manager Co-funding (Cascade – July 1, 2019 to present).
- Managing savings acquisition to targets within budget.
- Continual improvement of program operations and customer satisfaction.
- Inspections – includes verifying the installation of measures on an on-going basis. A summary of the inspection process is in Appendix 3.

Willdan is responsible for:

- Small Business Direct Install (SBDI) – includes direct customer outreach, energy assessment, product supply, product installation, project inspection, incentive processing, and administrative support (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).
    - Managing savings acquisition to SBDI targets within budget.
    - Continual improvement of SBDI program operations and customer satisfaction.
- Resource Extraction – Customer relationship management and energy analysis services specific to resource extraction for oil, gas and mining customers.

Infrastructure

To illustrate the Company's delivery infrastructure, Table 28 shows the delivery channel with its respective customer segment, administrator, and measure offerings. A detailed description of each segment follows.

Table 28
Wattsmart Business Structure

Delivery Channel	Targeted Customer Segment	Administrators	Measure Types
(1/1/19 to 6/30/19) In House Project Management	Managed Accounts (Large customer accounts)	Internal staff, Contracted Engineering Firms	Custom, typical, energy management, energy project manager co-funding
Contracted Delivery	Small Business	Willdan	Small Business Direct Install
	Non-Managed Accounts (small to medium customers)	Nexant (commercial) Cascade (industrial)	Typical, midstream, custom, energy management
	(July 1, 2019 to present) Managed Accounts	Cascade & Partners	Custom, typical, energy management, energy project manager co-funding
	Resource Extraction	Willdan	Custom, typical, energy management, energy project manager co-funding

Contracted DSM Delivery – Typical Measures & Midstream Distributor Networks

To help increase and improve the supplier and installation contractor infrastructure for energy efficient equipment and services, the Company established and developed the Wattsmart Business Vendor Network (WBVN) for lighting, HVAC and motors/VFDs. This work includes identifying and recruiting vendors, providing program and technical training and providing vendor sales training and support on an ongoing basis.

The current list of Wattsmart Business Vendors 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.[22] Table 29 provides the engineering firms associated with the WBVN.

Table 29
Wattsmart Business Vendor Network Delivery Firms

Engineering Firm	Main Office Location	Expertise
Nexant, Incorporated (with subcontractors Evergreen Consulting Group, EMP2 and RM Energy Consulting)	Salt Lake City, UT	Commercial
Cascade Energy, with subcontractor partner Rick Rumsey, LLC	Pleasant Grove, UT Ammon, ID	Industrial, Irrigation

[22] Customers receiving Small Business Lighting incentives do need to use an approved contractor that has been selected from a competitive request for bid process.

In most cases, customers are not required to select a vendor from these lists to receive an incentive.[23]

Since 2002, the WBVN has grown into a large, mature vendor network. In 2019, participating vendors continued receiving quarterly vendor performance scorecards to provide timely feedback and encourage vendors to reach "Premium" status which entitles qualifying vendors to improved visibility and enhanced co-branding with the Company. The following vendor performance criteria were established to align with program objectives:

- Industry Certification
- Level of participation (quarterly project count and delivered kWh savings)
- Customer satisfaction (measured by post-project customer surveys)
- Program satisfaction
- Project submission quality (number of submission errors)

In 2019, the number of Premium Vendors ranged from five to seven. No disciplinary actions were determined necessary for any WBVN members.

Contracted DSM Delivery – Small Business Direct Installation Offer

The Small Business Direct Install offering provides enhanced incentives for lighting retrofits installed by a Rocky Mountain Power contractor at eligible small business customer facilities. In 2019, the offer resulted in:

- kWh installed directly at customer sites: 12,386,841 kWh
- Forty-three cities and counties were served.
- 1,575 installed projects
- Average customer energy savings first year: 6,859 kWh;
- Average customer copay: $761;
- Average customer incentive: $2,283.

Internal DSM Delivery – January 1, 2019 to June 30, 2019

Internal DSM delivery targeted large, non-residential customers with custom project opportunities. Each large customer's project was directly managed by one of the Company's internal project managers. A pre-approved, pre-contracted group of engineering firms were used to perform custom facility-specific energy efficiency analysis, quality assurance and verification services for the Wattsmart Business program.

Table 30 lists the engineering firms under contract with the Company during this time to provide energy efficiency analysis for internal DSM delivered.

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

Table 30
Engineering Stable
Engineering Firms on contract through June 30, 2019

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

Contracted DSM Delivery – July 1, 2019 to present

As of July 1, 2019, Cascade Energy and a team of subcontractors took over delivery of the former Internal DSM Delivery project management role (see Table 20 below). Cascade is responsible for their portion of the Utah energy savings target, forecasting and budgeting, relationship management with large energy user and community customers, custom energy analysis, project measurement and verification, quality control (QC) services, and coordination with vendor delivery program personnel.

There are three project managers that assist large commercial and community customers (kW Engineering) and three project managers that assist large industrial customers (Cascade Energy). Project managers travel throughout Utah on a regular basis to visit and assist customers. These project managers provide direct assistance to access all Wattsmart Business program offerings based on rate schedule. This approach ensures that each large customer understands and is taking advantage of the Wattsmart Business program offerings as much as they would like. Cascade is managed by a Company Program Manager. Table 31 shows the engineering firms associated with delivering products and services within this delivery channel

Table 31
Large Customer Program Delivery Staff
July 1, 2019 to Present

Implementer Role	Engineering Firm	Main Office Location
Prime	Cascade Energy	Pleasant Grove, UT
Partner	kW Engineering	Salt Lake City, UT
Partner	Solarc Energy Group	Salt Lake City, UT
Partner	The Brendle Group	Fort Collins, CO
Partner	4Sight Energy	Spokane, WA

Contracted DSM Delivery – Resource Extraction (Oil, Gas and Mining)

Implementer (Willdan) is responsible for turnkey management and delivery of Oil, Gas and Mining sector, which is identified as a unique and specific market in Utah. Willdan (prime) and ERI (sub-contractor) are responsible for this sectors portion of energy savings targets, forecasting, budgeting, customer relationship managing for Utah extraction customers. Willdan conducts energy analysis, project measurement and verification, quality control services and coordination with customer personnel.

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.

In 2019, the Company followed up on the significant effort in 2018 to engage with municipal water and wastewater customers through the Strategic Energy Management (SEM) delivery model. These efforts are expected to yield significant additional savings in future years.

Energy Project Manager Co-Funding

The Energy Project Manager offering is a co-funded staff resource within a customer facility to identify and implement energy projects. Customers establish an annual energy savings goal that exceeds one million kWh 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 32 below table illustrates how Energy Project Manager's may be incented.

Table 32
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 Wattsmart Business structure, Table 21 shows delivery channels, targeted customer segments, provider(s), and service type.

Program Changes

Changes to the Wattsmart Business Program in 2019 were significant. Because LEDs have matured in the mainstream lighting market and are now generally standard practice, lighting incentives were overhauled to encourage behaviors that will move the market toward further adoption of new, increasingly energy efficient technologies.

Lighting controls, especially Advanced Networked Lighting Controls (ANLC), represent the next frontier of significant energy saving technologies in Utah's lighting market. In 2018, Wattsmart Business required all customers to include lighting controls in incentivized lighting projects. Unfortunately, this reduced customer participation more than anticipated.

On April 23, 2019, the Public Service Commission approved Rocky Mountain Power's request to make program adjustments and provide incentives specific to customer size classification (small, medium or large). Small and medium sized customers were allowed to receive lighting incentives for projects that do not include lighting controls. The number and diversity of lamps and fixtures eligible for midstream (point of purchase) incentives also increased.

Prior to April 23, 2019, the most frequently incentivized lighting technologies were LED wall packs (as post-purchase), TLED Type A, A/B Dual Mode, TLED Type B and TLED Type C lamps. After April 23, 2019, the most frequently incentivized lighting technologies were TLED Type A/B, Linear fixture ambient and troffer kits, LED wall packs (as midstream qualifying fixtures).

COMMUNICATIONS, OUTREACH AND EDUCATION

Wattsmart 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 2019 (Year 10) “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 2019 is summarized in the chart below. A summary of the recommendations are provided in Appendix 6. Completed evaluation reports are available at:
https://www.pacificorp.com/environment/demand-side-management.html

Table 33
2019 Evaluation Activities

Program	Years Evaluated	Evaluator	Progress Status	Estimated Completion
Home Energy Reports	2018-2019	Cadmus	In-Process	Q3 2020
*watt*smart Business	2018-2019	Cadmus	In-Process	Q4 2020
Wattsmart Homes	2017-2018	ADM	Completed	N/A
Low Income Weatherization	2016-2017	ADM	In-Process	Q2 2020

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 1

Report Requirements

Report requirements were revised and approved pursuant to the Commission's Order issued August 6, 2019, in Docket No. 19-035-22.

Requirement No.	Description	Report Reference
1.	The Company will file the Annual Report between May 1 and June 1.	.
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. 7, 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
Cost Effectiveness

Guidehouse

Memorandum

To: Nicole Karpavich and Alesha Pino, PacifiCorp

From: David Basak, Guidehouse

Date: May 20, 2020

Re: Cost-Effectiveness for the Portfolio and Sector Level - Utah

Guidehouse estimated the cost-effectiveness for the overall energy efficiency portfolio and component sectors, based on 2019 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.

Cost-effectiveness was tested using the 2017 IRP decrement values for all measure categories. The portfolio passes the cost-effectiveness for all the tests except the RIM test. The memo consists of the following tables.

Table 1 - Utility Inputs
Table 2 - Portfolio Level Costs 2019
Table 3 - Benefit/Cost Ratios by Portfolio Type
Table 4 - 2019 DSM Portfolio
Table 5 - 2019 Total Portfolio Cost-Effectiveness Results
Table 6 - 2019 C&I Energy Efficiency Portfolio Cost-Effectiveness Results
Table 7 - 2019 Residential Energy Efficiency Portfolio Cost-Effectiveness Results

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
guidehouse.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]	$0.1063
Commercial Energy Rate ($/kWh)[1]	$0.0808
Industrial Energy Rate ($/kWh)[1]	$0.0582
Irrigation Energy Rate ($/kWh)[1]	$0.0781
Inflation Rate	2.20%

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

Table 2 - Portfolio Level Costs 2019

Expense	Cost
Outreach and Communications	$1,161,480
Portfolio - EM&V Non-Residential	$34,581
Portfolio - EM&V Residential	$323,472
Portfolio - Systems Support	$147,369
Portfolio Potential Study	$18,033
Portfolio Energy Code Training	$70,616
Total Costs	**$1,755,551**

Table 3 - Benefit/Cost Ratios by Portfolio Type

Portfolio Type	PTRC	TRC	UCT	RIM	PCT
DSM Portfolio	2.03	1.84	2.11	0.99	2.57
Total Energy Efficiency Portfolio	0.85	0.77	1.49	0.39	2.28
C&I Programs	0.98	0.89	1.55	0.41	2.48
Residential Programs	0.67	0.61	1.51	0.35	1.98

Table 4 - 2019 DSM Portfolio

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0911	$136,089,753	$275,674,595	$139,584,842	2.03
Total Resource Cost Test (TRC) No Adder	$0.0911	$136,089,753	$250,613,268	$114,523,515	1.84
Utility Cost Test (UCT)	$0.0793	$118,538,510	$250,613,268	$132,074,758	2.11
Rate Impact Test (RIM)		$253,291,097	$252,010,766	-$1,280,331	0.99
Participant Cost Test (PCT)		$85,707,565	$220,376,613	$134,669,048	2.57
Lifecycle Revenue Impacts ($/kWh)					$0.0000001498
Discounted Participant Payback (years)					6.16

Table 5 - 2019 Total Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0610	$91,117,658	$77,163,626	-$13,954,033	0.85
Total Resource Cost Test (TRC) No Adder	$0.0610	$91,117,658	$70,148,751	-$20,968,908	0.77
Utility Cost Test (UCT)	$0.0315	$47,057,733	$70,148,751	$23,091,017	1.49
Rate Impact Test (RIM)		$181,810,320	$70,148,751	-$111,661,569	0.39
Participant Cost Test (PCT)		$84,310,067	$192,470,433	$108,160,365	2.28
Lifecycle Revenue Impacts ($/kWh)					$0.0004200991
Discounted Participant Payback (years)					3.48

Table 6 - 2019 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	$0.0507	$54,362,077	$53,490,192	-$871,886	0.98
Total Resource Cost Test (TRC) No Adder	$0.0507	$54,362,077	$48,627,447	-$5,734,630	0.89
Utility Cost Test (UCT)	$0.0293	$31,407,199	$48,627,447	$17,220,248	1.55
Rate Impact Test (RIM)		$118,270,647	$48,627,447	-$69,643,200	0.41
Participant Cost Test (PCT)		$50,548,735	$125,604,642	$75,055,907	2.48
Lifecycle Revenue Impacts ($/kWh)					$0.0000164943
Discounted Participant Payback (years)					3.47

Table 7 - 2019 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	$0.0841	$35,358,083	$23,673,434	-$11,684,649	0.67
Total Resource Cost Test (TRC) No Adder	$0.0841	$35,358,083	$21,521,304	-$13,836,779	0.61
Utility Cost Test (UCT)	$0.0339	$14,253,036	$21,521,304	$7,268,267	1.51
Rate Impact Test (RIM)		$62,142,175	$21,521,304	-$40,620,871	0.35
Participant Cost Test (PCT)		$33,761,332	$66,865,791	$33,104,459	1.98
Lifecycle Revenue Impacts ($/kWh)					$0.0000093891
Discounted Participant Payback (years)					3.49

Guidehouse

Memorandum

To: Nicole Karpavich and Alesha Pino, PacifiCorp

From: David Basak, Guidehouse

Date: May 20, 2020

Re: Cost-Effectiveness Results for the Home Energy Savings Program - Utah

Guidehouse estimated the cost-effectiveness results for the Utah Home Energy Savings Program, based on 2019 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.

Table 1 - Home Energy Savings Inputs
Table 2 – Home Energy Savings Annual Program Costs
Table 3 – Home Energy Savings – Savings by Measure Category
Table 4 - Benefit/Cost Ratios by Measure Category
Table 5 – Home Energy Savings Program Level Cost-Effectiveness Results
Table 6 - Home Energy Savings Building Shell Cost-Effectiveness Results
Table 7 - Home Energy Savings Energy Kits - DHW Cost-Effectiveness Results
Table 8 - Home Energy Savings Energy Kits – Lighting Cost-Effectiveness Results
Table 9 - Home Energy Savings HVAC Cost-Effectiveness Results
Table 10 - Home Energy Savings Lighting Cost-Effectiveness Results
Table 11 - Home Energy Savings Water Heating Cost-Effectiveness Results
Table 12 - Home Energy Savings Whole Building Cost-Effectiveness Results
Table 13 - Home Energy Savings New Homes Cost-Effectiveness Results

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

Table 1 - Home Energy Savings Inputs

Parameter	Value
Discount Rate	6.57%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh) [1]	$0.1063
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	$1,619	$34,629	$407	$195,123	$231,779	$1,647,871
Energy Kits - DHW	$0	$2,170	$40,639	$545	$8,466	$51,820	$8,466
Energy Kits - Lighting	$0	$690	$12,916	$173	$8,862	$22,642	$8,862
HVAC	$0	$42,124	$1,456,748	$13,927	$2,347,248	$3,860,046	$7,019,696
Lighting	$0	$196,391	$1,022,236	$49,333	$2,108,500	$3,376,460	$7,940,883
Water Heating	$0	$7,390	$158,024	$1,856	$55,661	$222,932	$33,164
Whole Building	$0	$13,143	$1,480,093	$11,197	$2,229,924	$3,734,358	$12,496,780
New Homes	$0	$825	$605,935	$2,671	$875,175	$1,484,606	$4,605,610
Total	**$0**	**$264,353**	**$4,811,221**	**$80,109**	**$7,828,960**	**$12,984,642**	**$33,761,332**

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	298,624	100%	298,624	96%	285,485	31
Energy Kits - DHW	400,187	100%	400,187	89%	356,967	11
Energy Kits - Lighting	127,191	100%	127,191	89%	113,454	12
HVAC	10,223,386	52%	5,346,831	96%	5,122,264	13
Lighting	36,214,803	87%	31,398,234	74%	23,360,286	12
Water Heating	1,362,726	100%	1,362,726	75%	1,027,495	10
Whole Building	8,219,629	99%	8,112,774	95%	7,739,587	15
New Homes	1,960,936	100%	1,960,936	60%	1,176,562	34
Total	**58,807,482**	**83%**	**49,007,503**	**80%**	**39,182,099**	**13**

Table 4 - Benefit/Cost Ratios by Measure Category

Measure Group	PTRC	TRC	UCT	RIM	PCT
Building Shell	0.22	0.20	1.37	0.41	0.47
Energy Kits - DHW	2.83	2.57	2.52	0.33	47.22
Energy Kits - Lighting	2.35	2.13	2.04	0.33	16.02
HVAC	0.40	0.36	0.77	0.31	1.18
Lighting	1.46	1.33	2.82	0.34	4.40
Water Heating	1.84	1.67	1.44	0.28	38.92
Whole Building	0.42	0.38	1.37	0.39	0.98
New Homes	0.45	0.41	0.93	0.36	1.05
Total	**0.64**	**0.58**	**1.53**	**0.35**	**1.86**

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	$0.0883	$34,089,689	$21,817,157	-$12,272,532	0.64
Total Resource Cost Test (TRC) No Adder	$0.0883	$34,089,689	$19,833,779	-$14,255,910	0.58
Utility Cost Test (UCT)	$0.0336	$12,984,642	$19,833,779	$6,849,137	1.53
Rate Impact Test (RIM)		$57,002,301	$19,833,779	-$37,168,522	0.35
Participant Cost Test (PCT)		$33,761,332	$62,931,373	$29,170,041	1.86
Lifecycle Revenue Impacts ($/kWh)					$0.0000097133
Discounted Participant Payback (years)					6.87

Table 6 through Table 13 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	$0.3360	$1,612,020	$349,876	-$1,262,143	0.22
Total Resource Cost Test (TRC) No Adder	$0.3360	$1,612,020	$318,069	-$1,293,950	0.20
Utility Cost Test (UCT)	$0.0483	$231,779	$318,069	$86,291	1.37
Rate Impact Test (RIM)		$781,580	$318,069	-$463,511	0.41
Participant Cost Test (PCT)		$1,647,871	$770,229	-$877,641	0.47
Lifecycle Revenue Impacts ($/kWh)					$0.0000005573
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	$0.0166	$50,906	$143,926	$93,021	2.83
Total Resource Cost Test (TRC) No Adder	$0.0166	$50,906	$130,842	$79,936	2.57
Utility Cost Test (UCT)	$0.0169	$51,820	$130,842	$79,022	2.52
Rate Impact Test (RIM)		$400,867	$130,842	-$270,025	0.33
Participant Cost Test (PCT)		$8,466	$399,775	$391,309	47.22
Lifecycle Revenue Impacts ($/kWh)					$0.0000008500
Discounted Participant Payback (years)					n/a

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	$0.0208	$21,684	$50,911	$29,227	2.35
Total Resource Cost Test (TRC) No Adder	$0.0208	$21,684	$46,283	$24,598	2.13
Utility Cost Test (UCT)	$0.0217	$22,642	$46,283	$23,641	2.04
Rate Impact Test (RIM)		$141,355	$46,283	-$95,072	0.33
Participant Cost Test (PCT)		$8,862	$141,949	$133,087	16.02
Lifecycle Revenue Impacts ($/kWh)					$0.0000002768
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	$0.1648	$8,237,668	$3,290,049	-$4,947,619	0.40
Total Resource Cost Test (TRC) No Adder	$0.1648	$8,237,668	$2,990,954	-$5,246,714	0.36
Utility Cost Test (UCT)	$0.0772	$3,860,046	$2,990,954	-$869,093	0.77
Rate Impact Test (RIM)		$9,556,459	$2,990,954	-$6,565,506	0.31
Participant Cost Test (PCT)		$7,019,696	$8,293,399	$1,273,703	1.18
Lifecycle Revenue Impacts ($/kWh)					$0.0000177857
Discounted Participant Payback (years)					10.09

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	$0.0334	$7,175,976	$10,482,601	$3,306,625	1.46
Total Resource Cost Test (TRC) No Adder	$0.0334	$7,175,976	$9,529,637	$2,353,661	1.33
Utility Cost Test (UCT)	$0.0157	$3,376,460	$9,529,637	$6,153,177	2.82
Rate Impact Test (RIM)		$27,819,663	$9,529,637	-$18,290,026	0.34
Participant Cost Test (PCT)		$7,940,883	$34,962,269	$27,021,386	4.40
Lifecycle Revenue Impacts ($/kWh)					$0.0000532540
Discounted Participant Payback (years)					2.37

Table 11 - Home Energy Savings Water Heating Cost-Effectiveness Results (Load Shape – Residential_HPWH_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0235	$192,276	$353,573	$161,296	1.84
Total Resource Cost Test (TRC) No Adder	$0.0235	$192,276	$321,430	$129,153	1.67
Utility Cost Test (UCT)	$0.0272	$222,932	$321,430	$98,498	1.44
Rate Impact Test (RIM)		$1,154,193	$321,430	-$832,764	0.28
Participant Cost Test (PCT)		$33,164	$1,290,756	$1,257,592	38.92
Lifecycle Revenue Impacts ($/kWh)					$0.0000028538
Discounted Participant Payback (years)					n/a

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	$0.1601	$13,426,362	$5,631,916	-$7,794,446	0.42
Total Resource Cost Test (TRC) No Adder	$0.1601	$13,426,362	$5,119,924	-$8,306,438	0.38
Utility Cost Test (UCT)	$0.0445	$3,734,358	$5,119,924	$1,385,566	1.37
Rate Impact Test (RIM)		$13,297,212	$5,119,924	-$8,177,288	0.39
Participant Cost Test (PCT)		$12,496,780	$12,253,880	-$242,900	0.98
Lifecycle Revenue Impacts ($/kWh)					$0.0000194448
Discounted Participant Payback (years)					16.60

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	$0.1635	$3,372,797	$1,514,305	-$1,858,492	0.45
Total Resource Cost Test (TRC) No Adder	$0.1635	$3,372,797	$1,376,641	-$1,996,157	0.41
Utility Cost Test (UCT)	$0.0719	$1,484,606	$1,376,641	-$107,966	0.93
Rate Impact Test (RIM)		$3,850,970	$1,376,641	-$2,474,330	0.36
Participant Cost Test (PCT)		$4,605,610	$4,819,115	$213,505	1.05
Lifecycle Revenue Impacts ($/kWh)					$0.0000027227
Discounted Participant Payback (years)					n/a

Guidehouse

Memorandum

To: Nicole Karpavich and Alesha Pino, PacifiCorp

From: David Basak, Guidehouse

Date: May 20, 2020

Re: Cost-Effectiveness Results for the Home Energy Reporting Program - Utah

Guidehouse estimated the cost-effectiveness results for the Utah Home Energy Reporting Program, based on 2019 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.

Table 1 - Home Energy Reporting Inputs
Table 2 – Home Energy Reporting Annual Program Costs
Table 3 – Home Energy Reporting Savings by Measure Category
Table 4 - Home Energy Reporting Program Level Cost-Effectiveness Results

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

Table 1 - Home Energy Reporting Inputs

Parameter	Value
Discount Rate	6.57%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh) [1]	$0.1063
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	$23,885	$833,711	$711	$0	$858,307	$0
Total	**$0**	**$23,885**	**$833,711**	**$711**	**$0**	**$858,307**	**$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	33,214,620	98%	32,550,328	100%	32,550,328	1
Total	**33,214,620**	**98%**	**32,550,328**	**100%**	**32,550,328**	**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	$0.0275	$858,307	$1,656,930	$798,623	1.93
Total Resource Cost Test (TRC) No Adder	$0.0275	$858,307	$1,506,300	$647,993	1.75
Utility Cost Test (UCT)	$0.0275	$858,307	$1,506,300	$647,993	1.75
Rate Impact Test (RIM)		$4,394,529	$1,506,300	-$2,888,229	0.34
Participant Cost Test (PCT)		$0	$3,536,222	$3,536,222	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000538983
Discounted Participant Payback (years)					n/a

Guidehouse

Memorandum

To: Nicole Karpavich and Alesha Pino, PacifiCorp

From: David Basak, Guidehouse

Date: May 20, 2020

Re: Cost-Effectiveness Results for the Low Income Weatherization Program - Utah

Guidehouse estimated the cost-effectiveness results for the Utah Low Income Weatherization Program, based on 2019 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.

Table 1 - Low Income Weatherization Inputs
Table 2 - Low Income Weatherization Annual Program Costs
Table 3 - Low Income Weatherization Savings by Measure Category
Table 4 - Low Income Weatherization Program Level Cost-Effectiveness

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

Table 1 - Low Income Weatherization Inputs

Parameter	Value
Discount Rate	6.57%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh)[1]	$0.1063
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	$10,743	$8,028	$4,905	$62,938	$86,614	$0
Total	**$0**	**$10,743**	**$8,028**	**$4,905**	**$62,938**	**$86,614**	**$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	259,176	100%	259,176	100%	259,176	16
Total	**259,176**	**100%**	**259,176**	**100%**	**259,176**	**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	$0.0295	$86,614	$199,347	$112,733	2.30
Total Resource Cost Test (TRC) No Adder	$0.0295	$86,614	$181,225	$94,610	2.09
Utility Cost Test (UCT)	$0.0295	$86,614	$181,225	$94,610	2.09
Rate Impact Test (RIM)		$421,871	$181,225	-$240,647	0.43
Participant Cost Test (PCT)		$0	$398,196	$398,196	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000005393
Discounted Participant Payback (years)					n/a

Guidehouse

Memorandum

To: Nicole Karpavich and Alesha Pino, PacifiCorp

From: David Basak, Guidehouse

Date: May 20, 2020

Re: Cost-Effectiveness Results for the Wattsmart Business Program - Utah

Guidehouse estimated the cost-effectiveness results for the Utah Wattsmart Business Program, based on 2019 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program and for the 14 measure categories.

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

Table 1 - Utility Inputs
Table 2 – Annual Wattsmart Business Program Costs by Measure Category
Table 3 – Annual Wattsmart Business Program Savings by Measure Category
Table 4 - Benefit/Cost Ratios by Measure Category
Table 5 – Wattsmart Business Program Level Cost-Effectiveness Results
Table 6 - Wattsmart Business Additional Measures Cost-Effectiveness Results
Table 7 - Wattsmart Business Building Shell Cost-Effectiveness Results
Table 8 - Wattsmart Business Compressed Air Cost-Effectiveness Results
Table 9 - Wattsmart Business Direct Install Cost-Effectiveness Results
Table 10 - Wattsmart Business Electronics Cost-Effectiveness Results
Table 11 - Wattsmart Business Energy Management Cost-Effectiveness Results
Table 12 - Wattsmart Business Farm & Dairy Cost-Effectiveness Results
Table 13 - Wattsmart Business Food Service Equipment Cost-Effectiveness Results
Table 14 - Wattsmart Business HVAC Cost-Effectiveness Results
Table 15 - Wattsmart Business Irrigation Cost-Effectiveness Results
Table 16 - Wattsmart Business Lighting Cost-Effectiveness Results
Table 17 - Wattsmart Business Motors Cost-Effectiveness Results
Table 18 - Wattsmart Business Refrigeration Cost-Effectiveness Results
Table 19 - Wattsmart Business Energy Manager Co-Funding Cost-Effectiveness Results

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
guidehouse.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]	$0.0808
Industrial Energy Rate ($/kWh)[1]	$0.0582
Irrigation Energy Rate ($/kWh)[1]	$0.0781
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	$18,269	$23,639	$252,942	$11,690	$585,388	$0	$891,928	$1,588,088
Building Shell	$1,952	$4,033	$63,294	$2,438	$241,473	$0	$313,189	$983,175
Compressed Air	$40,303	$28,164	$399,826	$14,876	$514,043	$84,482	$1,081,693	$1,432,311
Direct Install	$0	$78,753	$1,176,362	$34,140	$3,595,022	$0	$4,884,278	$1,198,341
Electronics	$0	$139	$2,731	$86	$3,945	$0	$6,901	$9,247
Energy Management	$386,402	$205,014	$2,070,013	$110,201	$799,664	$0	$3,571,295	$1,029,596
Farm & Dairy	$0	$104	$24,939	$186	$9,670	$0	$34,898	$23,452
Food Service Equipment	$0	$2,470	$48,607	$1,515	$36,601	$0	$89,194	$84,935
HVAC	$233,823	$123,317	$1,384,392	$74,810	$3,874,819	$0	$5,691,163	$12,920,075
Irrigation	$0	$3,689	$473,750	$6,366	$200,759	$0	$684,564	$646,477
Lighting	$199,780	$225,040	$4,811,073	$142,737	$5,359,477	$0	$10,738,106	$26,786,224
Motors	$51,894	$61,869	$737,635	$28,653	$1,249,906	$0	$2,129,957	$2,586,208
Refrigeration	$34,388	$18,547	$114,517	$9,642	$515,481	$0	$692,575	$1,260,606
Energy Proj Mgr Co-fund	$0	$0	$0	$0	$562,876	$0	$562,876	$0
Total	**$966,811**	**$774,779**	**$11,560,080**	**$437,339**	**$17,549,125**	**$84,482**	**$31,372,618**	**$50,548,735**

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	4,241,356	87%	3,689,980	76%	2,804,385	15
Building Shell	884,657	87%	769,652	76%	584,935	16
Compressed Air	5,397,164	100%	5,397,164	86%	4,641,561	14
Direct Install	12,386,841	100%	12,386,841	91%	11,272,025	12
Electronics	31,034	87%	27,000	76%	20,520	4
Energy Management	39,983,199	100%	39,983,199	89%	35,585,047	3
Farm & Dairy	67,361	90%	60,625	79%	47,894	15
Food Service Equipment	549,803	87%	478,329	76%	363,530	12
HVAC	27,142,752	100%	27,142,752	57%	15,471,369	15
Irrigation	2,309,690	90%	2,078,721	79%	1,642,190	12
Lighting	51,787,840	100%	51,787,840	91%	47,126,934	14
Motors	10,396,034	91%	9,460,391	90%	8,514,352	15
Refrigeration	3,498,214	100%	3,498,214	51%	1,784,089	13
Energy Proj Mgr Co-fund	0	n/a	0	n/a	0	0
Total	**158,675,945**	**99%**	**156,760,706**	**83%**	**129,858,830**	**11**

Table 4 - Benefit/Cost Ratios by Measure Category

Measure Category	PTRC	TRC	UCT	RIM	PCT
Additional Measures	1.06	0.97	1.64	0.47	2.21
Building Shell	0.47	0.43	1.12	0.40	1.01
Compressed Air	1.37	1.25	2.07	0.47	3.38
Direct Install	2.09	1.90	0.93	0.33	11.10
Electronics	0.27	0.24	0.35	0.18	1.33
Energy Management	0.94	0.86	0.88	0.28	9.17
Farm & Dairy	0.64	0.58	0.72	0.32	2.76
Food Service Equipment	1.39	1.27	1.66	0.39	4.90
HVAC	0.99	0.90	1.44	0.41	2.26
Irrigation	0.78	0.71	1.03	0.36	2.77
Lighting	0.83	0.76	2.10	0.44	1.87
Motors	1.52	1.38	2.08	0.52	3.21
Refrigeration	1.08	0.98	1.16	0.40	2.48
Energy Proj Mgr Co-fund	n/a	n/a	n/a	n/a	n/a
Total	**0.98**	**0.90**	**1.55**	**0.41**	**2.48**

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	$0.0507	$54,327,496	$53,490,192	-$837,304	0.98
Total Resource Cost Test (TRC) No Adder	$0.0507	$54,327,496	$48,627,447	-$5,700,049	0.90
Utility Cost Test (UCT)	$0.0293	$31,372,618	$48,627,447	$17,254,829	1.55
Rate Impact Test (RIM)		$118,236,066	$48,627,447	-$69,608,619	0.41
Participant Cost Test (PCT)		$50,548,735	$125,604,642	$75,055,907	2.48
Lifecycle Revenue Impacts ($/kWh)					$0.0000164861
Discounted Participant Payback (years)					3.47

Table 6 through Table 19 provide cost-effectiveness results for all 14 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	$0.0498	$1,513,486	$1,610,760	$97,274	1.06
Total Resource Cost Test (TRC) No Adder	$0.0498	$1,513,486	$1,464,328	-$49,159	0.97
Utility Cost Test (UCT)	$0.0294	$891,928	$1,464,328	$572,399	1.64
Rate Impact Test (RIM)		$3,119,921	$1,464,328	-$1,655,593	0.47
Participant Cost Test (PCT)		$1,588,088	$3,516,958	$1,928,870	2.21
Lifecycle Revenue Impacts ($/kWh)					$0.0000041930
Discounted Participant Payback (years)					5.64

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	$0.1237	$818,929	$385,602	-$433,327	0.47
Total Resource Cost Test (TRC) No Adder	$0.1237	$818,929	$350,547	-$468,382	0.43
Utility Cost Test (UCT)	$0.0473	$313,189	$350,547	$37,358	1.12
Rate Impact Test (RIM)		$881,521	$350,547	-$530,973	0.40
Participant Cost Test (PCT)		$983,175	$989,277	$6,102	1.01
Lifecycle Revenue Impacts ($/kWh)					$0.0000012626
Discounted Participant Payback (years)					24.00

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	$0.0376	$1,799,438	$2,464,656	$665,218	1.37
Total Resource Cost Test (TRC) No Adder	$0.0376	$1,799,438	$2,240,596	$441,158	1.25
Utility Cost Test (UCT)	$0.0226	$1,081,693	$2,240,596	$1,158,903	2.07
Rate Impact Test (RIM)		$4,796,930	$2,240,596	-$2,556,334	0.47
Participant Cost Test (PCT)		$1,432,311	$4,834,085	$3,401,774	3.38
Lifecycle Revenue Impacts ($/kWh)					$0.0000069250
Discounted Participant Payback (years)					2.78

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	$0.0230	$2,379,746	$4,979,031	$2,599,286	2.09
Total Resource Cost Test (TRC) No Adder	$0.0230	$2,379,746	$4,526,392	$2,146,646	1.90
Utility Cost Test (UCT)	$0.0472	$4,884,278	$4,526,392	-$357,886	0.93
Rate Impact Test (RIM)		$13,719,986	$4,526,392	-$9,193,594	0.33
Participant Cost Test (PCT)		$1,198,341	$13,304,592	$12,106,251	11.10
Lifecycle Revenue Impacts ($/kWh)					$0.0000289390
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	$0.1352	$9,983	$2,681	-$7,302	0.27
Total Resource Cost Test (TRC) No Adder	$0.1352	$9,983	$2,437	-$7,546	0.24
Utility Cost Test (UCT)	$0.0935	$6,901	$2,437	-$4,463	0.35
Rate Impact Test (RIM)		$13,273	$2,437	-$10,835	0.18
Participant Cost Test (PCT)		$9,247	$12,330	$3,082	1.33
Lifecycle Revenue Impacts ($/kWh)					$0.0000001011
Discounted Participant Payback (years)					3.29

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	$0.0376	$3,687,971	$3,473,808	-$214,163	0.94
Total Resource Cost Test (TRC) No Adder	$0.0376	$3,687,971	$3,158,008	-$529,963	0.86
Utility Cost Test (UCT)	$0.0364	$3,571,295	$3,158,008	-$413,287	0.88
Rate Impact Test (RIM)		$11,260,153	$3,158,008	-$8,102,145	0.28
Participant Cost Test (PCT)		$1,029,596	$9,438,831	$8,409,235	9.17
Lifecycle Revenue Impacts ($/kWh)					$0.0001007584
Discounted Participant Payback (years)					0.09

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	$0.0843	$43,755	$27,789	-$15,967	0.64
Total Resource Cost Test (TRC) No Adder	$0.0843	$43,755	$25,262	-$18,493	0.58
Utility Cost Test (UCT)	$0.0672	$34,898	$25,262	-$9,636	0.72
Rate Impact Test (RIM)		$78,376	$25,262	-$53,114	0.32
Participant Cost Test (PCT)		$23,452	$64,705	$41,253	2.76
Lifecycle Revenue Impacts ($/kWh)					$0.0000001345
Discounted Participant Payback (years)					3.83

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	$0.0351	$117,144	$163,069	$45,925	1.39
Total Resource Cost Test (TRC) No Adder	$0.0351	$117,144	$148,245	$31,101	1.27
Utility Cost Test (UCT)	$0.0267	$89,194	$148,245	$59,050	1.66
Rate Impact Test (RIM)		$377,942	$148,245	-$229,697	0.39
Participant Cost Test (PCT)		$84,935	$416,532	$331,597	4.90
Lifecycle Revenue Impacts ($/kWh)					$0.0000007230
Discounted Participant Payback (years)					1.64

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	$0.0547	$9,180,786	$9,044,041	-$136,745	0.99
Total Resource Cost Test (TRC) No Adder	$0.0547	$9,180,786	$8,221,855	-$958,930	0.90
Utility Cost Test (UCT)	$0.0339	$5,691,163	$8,221,855	$2,530,693	1.44
Rate Impact Test (RIM)		$20,097,040	$8,221,855	-$11,875,185	0.41
Participant Cost Test (PCT)		$12,920,075	$29,148,289	$16,228,214	2.26
Lifecycle Revenue Impacts ($/kWh)					$0.0000300757
Discounted Participant Payback (years)					8.29

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	$0.0662	$994,522	$777,468	-$217,054	0.78
Total Resource Cost Test (TRC) No Adder	$0.0662	$994,522	$706,789	-$287,733	0.71
Utility Cost Test (UCT)	$0.0455	$684,564	$706,789	$22,226	1.03
Rate Impact Test (RIM)		$1,942,918	$706,789	-$1,236,128	0.36
Participant Cost Test (PCT)		$646,477	$1,793,612	$1,147,135	2.77
Lifecycle Revenue Impacts ($/kWh)					$0.0000038910
Discounted Participant Payback (years)					3.59

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	$0.0608	$29,754,093	$24,811,423	-$4,942,671	0.83
Total Resource Cost Test (TRC) No Adder	$0.0608	$29,754,093	$22,555,839	-$7,198,254	0.76
Utility Cost Test (UCT)	$0.0219	$10,738,106	$22,555,839	$11,817,733	2.10
Rate Impact Test (RIM)		$51,457,390	$22,555,839	-$28,901,551	0.44
Participant Cost Test (PCT)		$26,786,224	$50,105,943	$23,319,718	1.87
Lifecycle Revenue Impacts ($/kWh)					$0.0000782931
Discounted Participant Payback (years)					6.40

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	$0.0348	$3,207,638	$4,865,656	$1,658,018	1.52
Total Resource Cost Test (TRC) No Adder	$0.0348	$3,207,638	$4,423,324	$1,215,686	1.38
Utility Cost Test (UCT)	$0.0231	$2,129,957	$4,423,324	$2,293,367	2.08
Rate Impact Test (RIM)		$8,466,786	$4,423,324	-$4,043,462	0.52
Participant Cost Test (PCT)		$2,586,208	$8,290,827	$5,704,619	3.21
Lifecycle Revenue Impacts ($/kWh)					$0.0000102407
Discounted Participant Payback (years)					2.48

Table 18 - Wattsmart Business Refrigeration 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	$0.0466	$820,004	$884,207	$64,203	1.08
Total Resource Cost Test (TRC) No Adder	$0.0466	$820,004	$803,824	-$16,179	0.98
Utility Cost Test (UCT)	$0.0393	$692,575	$803,824	$111,249	1.16
Rate Impact Test (RIM)		$2,023,831	$803,824	-$1,220,007	0.40
Participant Cost Test (PCT)		$1,260,606	$3,125,786	$1,865,180	2.48
Lifecycle Revenue Impacts ($/kWh)					$0.0000035522
Discounted Participant Payback (years)					6.39

Table 19 - 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	$562,876	$0	-$562,876	0.00
Rate Impact Test (RIM)		$0	$0	$0	n/a
Participant Cost Test (PCT)		$0	$562,876	$562,876	n/a
Lifecycle Revenue Impacts ($/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

	Inspection Requirement	Baseline Verification Techniques
Agency Verification	100%	Inspection by agency inspector of all homes treated, reconciling work completed and quality prior to invoicing Company.
State of Utah	5-10%	State inspectors randomly inspect 5-10 percent of completed homes

1. All measures are qualified through US Department of Energy approved audit tool or priority list.

Wattsmart Homes

	Inspection Rate	Quality Control Verification Techniques
Retrofit / New Home	100%	Post-purchase incented measures include verification of proof of purchase receipt review and eligible equipment review. Verification of customer account and address.
Single Family	>=5%	
Manufactured Home	>=5%	
Multifamily	100%	

1. Measures inspected 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, and insulation
2. Measures not inspected include; central air conditioners, gas furnace with ECM, electric water heaters, evaporative coolers, smart thermostats, and light fixtures
3. 3. Site inspections are not performed on measures that are upstream, or manufacturer buy down model.
4. 4. Promotion agreement contracts are signed with manufacturers and retailers to set incentive levels, final product prices, and limits the total number of units that can be purchased per customer.
5. 5. The Program Administrator verifies the measures for product eligibility and correct pricing. Pricing is also verified by the Program Administrator field visits to retail locations. These measures include; LED bulbs, evaporative coolers, and smart thermostats
6. 6. Customer eligibility for wattsmart Starter Kits is verified using the customer's account number and last name, and cross-verifying with the current Rocky Mountain customer database.

Wattsmart Business

	Inspection Requirement	Baseline Verification Techniques
Utah Small Business Direct Install	None	Customer projects did not require pre-approval and did not receive pre-installation techniques,
Large Lighting	PRE/POST	A representative percentage of large lighting retrofit projects with an estimated incentive over a certain amount received on-site pre-installation and post-installation inspections. All large lighting projects that were self-installed by customer without the assistance of a vendor were subject to both pre and post-installation inspections.
Large Custom Lighting	PRE/POST	Large custom lighting projects with an estimated incentive over a certain amount received a post-installation on-site inspection (New Construction) and, for retrofits, a pre-installation on-site inspection.
New Construction (Large and Custom)	POST	New construction design projects receive a mandatory pre-project design document review prior to April 23, 2019. After that date, pre-project lighting design reviews were not required because the incentive shifted to DLC Premium fixtures which are confirmed by post-installation inspections.
Midstream Lighting	2% Sampling	A representative sampling of all projects selected by a third-party administrator during incentive batch process for phone inspections were conducted prior to completing incentive batch processes to detect fraudulent activities. An additional representative sampling selected by a third party program administrator during the incentive batch process for on-site inspections was conducted prior to batching.
Custom >=100,000 kWh	PRE/POST	Pre and post-implementation inspections were completed either remotely or on site, depending on the availability of data. Remote inspections were preferred whenever possible for projects of this size
Custom 100,000 - 200,000 kWh	PRE/POST	Either a remote or site visit was performed for the pre-installation inspection, depending on the availability of data. Post installation inspections for projects of this size are completed via on-site visit.
Custom >200,000 kWh	PRE/POST	Both the pre and post-installation inspections are completed via site visit.
Small Business Direct (Lighting)	PRE/POST	Program implementer and customer complete a Pre and Post implementation walkthrough on each project. There are no inspection thresholds needed on this offering as project size is set by tariff

All Programs

As part of the third-party program evaluations (two-year cycle) process, the Company utilized post-project customer satisfaction surveys sent to customers via email. The Company also utilized 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 serves as a further check to verify customer participation, satisfaction and measures installed. Additional record reviews and site inspections (including metering/data logging) are conducted as part of the process and impact evaluations, which serve as a final verification of measure installations.

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 4

*watt*smart Homes Retailers 2019

Contents

Table 1: 2019 Participating Midstream/Upstream Retailers 3
Table 2: 2019 Participating Downstream Retailers 6
Table 3: 2019 Non-Participating Downstream Retailers 22
Table 4: 2019 Participating HVAC Trade Allies 27
Table 5: 2019 Participating Weatherization Trade Allie 29

Table 1: 2019 Participating Midstream/Upstream Retailers

Retailer	City	State	LEDs	Fixtures
Ace Hardware - Hurst #5738	Cedar City	UT	✓	✓
Ace Hardware - Jones #10418	Castle Dale	UT	✓	✓
Ace Hardware - Kamas #15309	Kamas	UT	✓	✓
Ace Hardware - Olympus Hills #16454	Salt Lake City	UT	✓	✓
Ace Hardware - Smith & Edwards #5664	Ogden	UT	✓	□
Ace Hardware - Tremonton #14654	Tremonton	UT	✓	✓
Ace Hardware #11772	Salt Lake City	UT	✓	✓
Ace Hardware #14886	Highland	UT	✓	✓
Ace Hardware #9314	Pleasant Grove	UT	✓	
Ace Hardware Delta #4954	Delta	UT	✓	
Ace Hardware of South Ogden #16287	Ogden	UT	✓	✓
Batteries Plus #355	Washington	UT	✓	
Batteries Plus #356	Layton	UT	✓	
Batteries Plus #358	Salt Lake City	UT	✓	
Batteries Plus #359	Sandy	UT	✓	
Batteries Plus #724	Riverton	UT	✓	
Batteries Plus #754	West Jordan	UT	✓	
Batteries Plus #802	Riverdale	UT	✓	
Batteries Plus #909	West Valley City	UT	✓	
Best Buy #1146	West Jordan	UT	✓	
Best Buy #1761	Park City	UT	✓	
Best Buy #496	Riverdale	UT	✓	
Best Buy #497	Sandy	UT	✓	
Best Buy #527	Salt Lake City	UT	✓	
Burtons Ace Hardware #16499	Salt Lake City	UT	✓	✓
Costco #1019	South Jordan	UT	✓	✓
Costco #113	Salt Lake City	UT	✓	✓
Costco #487	Sandy	UT	✓	✓
Costco #622	West Valley City	UT	✓	✓
Costco #764	Murray	UT	✓	✓
Costco #770	Ogden	UT	✓	✓
Home Depot #4401	Riverdale	UT	✓	✓
Home Depot #4402	Salt Lake City	UT	✓	✓
Home Depot #4403	Salt Lake City	UT	✓	✓
Home Depot #4406	West Valley City	UT	✓	✓
Home Depot #4409	Sandy	UT	✓	✓
Home Depot #4410	West Jordan	UT	✓	✓
Home Depot #4411	Ogden	UT	✓	✓
Home Depot #4413	Salt Lake City	UT	✓	✓

Retailer	City	State	LEDs	Fixtures
Home Depot #4415	Park City	UT	✓	✓
Home Depot #4418	Cedar City	UT	✓	✓
Home Depot #4419	Tooele	UT	✓	✓
Home Depot #4421	Sandy	UT	✓	✓
Home Depot #8566	Riverton	UT	✓	✓
Lowe's #1080	Riverdale	UT	✓	
Lowe's #1133	West Valley City	UT	✓	
Lowe's #15	Layton	UT	✓	
Lowe's #1613	West Jordan	UT	✓	
Lowe's #2275	Salt Lake City	UT	✓	
Lowe's #2296	Riverton	UT	✓	
Lowe's #2606	Sandy	UT	✓	
Lowe's #2845	Clinton	UT	✓	
Lowe's #2858	Ogden	UT	✓	
Lowe's #342	Murray	UT	✓	
P&D Ace Hardware #15224	Green River	UT	✓	
Ream's Foods #11	West Jordan	UT	✓	
Ream's Foods #12	Salt Lake City	UT	✓	
Ream's Foods #15	Sandy	UT	✓	
Ream's Foods #2	Salt Lake City	UT	✓	
Ream's Foods #6	Salt Lake City	UT	✓	
Ream's Foods #8	Magna	UT	✓	
Sam's Club #4718	South Jordan	UT	✓	
Sam's Club #4730	West Jordan	UT	✓	
Sam's Club #6682	Layton	UT	✓	
Sam's Club #6683	Murray	UT	✓	
Sam's Club #6684	Riverdale	UT	✓	
Sam's Club #6686	Salt Lake City	UT	✓	
Smith's #108	Herriman	UT	✓	
Smith's #131	Ogden	UT	✓	
Smith's #132	Draper	UT	✓	
Smith's #137	West Valley City	UT	✓	
Smith's #138	South Jordan	UT	✓	
Smith's #139	West Jordan	UT	✓	
Smith's #140	Sunset	UT	✓	
Smith's #142	Syracuse	UT	✓	
Smith's #144	Orem	UT	✓	
Smith's #147	West Valley City	UT	✓	
Smith's #153	Sandy	UT	✓	
Smith's #158	West Jordan	UT	✓	
Smith's #272	West Point	UT	✓	

Retailer	City	State	LEDs	Fixtures
Smith's #279	North Ogden	UT	✓	
Smith's #28	Salt Lake City	UT	✓	
Smith's #30	Ogden	UT	✓	
Smith's #42	Cedar City	UT	✓	
Smith's #44	Salt Lake City	UT	✓	
Smith's #47	Sandy	UT	✓	
Smith's #65	Magna	UT	✓	
Smith's #66	Salt Lake City	UT	✓	
Smith's #69	Salt Lake City	UT	✓	
Smith's #72	Park City	UT	✓	
Smith's #73	Pleasant Grove	UT	✓	
Smith's #77	Salt Lake City	UT	✓	
Smith's #80	Salt Lake City	UT	✓	
Smith's #81	Salt Lake City	UT	✓	
Smith's Marketplace #274	West Jordan	UT	✓	
Smith's Marketplace #475	Salt Lake City	UT	✓	
Smith's Marketplace #495	West Jordan	UT	✓	
Smith's Marketplace #94	Salt Lake City	UT	✓	
Sutherlands Lumber #2810	Salt Lake City	UT	✓	
Target Store 1752	Sandy	UT	✓	
Target Store 1753	Riverdale	UT	✓	
Target Store 1755	Layton	UT	✓	
Target Store 2123	South Jordan	UT	✓	
Target Store 2150	West Jordan	UT	✓	
Target Store 2609	West Valley City	UT	✓	
Target Store 2641	Salt Lake City	UT	✓	
Target Store 768	West Jordan	UT	✓	
True Value Hardware - Losee Lumber	Delta	UT	✓	
Walmart #1438	Cedar City	UT	✓	✓
Walmart #1440	Tooele	UT	✓	✓
Walmart #1686	Taylorsville	UT	✓	✓
Walmart #1699	Layton	UT	✓	✓
Walmart #1708	Riverdale	UT	✓	✓
Walmart #1827	Park City	UT	✓	✓
Walmart #2207	Midvale	UT	✓	✓
Walmart #2307	South Jordan	UT	✓	✓
Walmart #2921	Harrisville	UT	✓	✓
Walmart #3232	West Jordan	UT	✓	✓
Walmart #3568	West Valley City	UT	✓	✓
Walmart #3589	Salt Lake City	UT	✓	✓
Walmart #3620	Riverton	UT	✓	✓

Retailer	City	State	LEDs	Fixtures
Walmart #3789	Ogden	UT	✓	✓
Walmart #3848	Syracuse	UT	✓	✓
Walmart #4208	Salt Lake City	UT	✓	✓
Walmart #4689	Cedar Hills	UT	✓	✓
Walmart #4700	Pleasant Grove	UT	✓	
Walmart #4706	Magna	UT	✓	
Walmart #5109	West Valley City	UT	✓	
Walmart #5110	Draper	UT	✓	
Walmart #5205	Layton	UT	✓	
Walmart #5206	South Ogden	UT	✓	
Walmart #5233	West Valley City	UT	✓	✓
Walmart #5234	Clinton	UT	✓	✓
Walmart #5235	Sandy	UT	✓	✓
Walmart #5270	Lindon	UT	✓	✓
Walmart #5763	South Jordan	UT	✓	✓
Walmart #7043	Riverton	UT	✓	
Walmart #7168	Herriman	UT	✓	

Table 2: 2019 Participating Downstream Retailers

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
1st Class Comfort and Air	Draper	UT							✓
AAA comfort specialist John Stone	Orem	UT							✓
AAA Rewards	online	UT							✓
AAFES	Hill Air Force base	UT							✓
Absolute Air	Mapleton	UT	✓					✓	✓
Absolute Air Heating and Air Conditioning	Mapleton	UT							✓
Absolute Aire	Mapleton	UT							✓
Ace Hardware	Centerville	UT						✓	
Action Plumbing & Heating	Salt Lake City	UT							✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
ACX Service	West Haven	UT							✓
After Hours Heating & Cooling	Holladay	UT							✓
Air Express	Lehi	UT							✓
Air Now	Ogden	UT							✓
Air Now Heating and Air Conditioning	Ogden	UT							✓
Air Pure, LLC	Logan	UT							✓
Aire Express	Tooele	UT				✓			
Allred's Inc.	Midvale	UT							✓
Amazon	City	UT							✓
Amazon	Salt Lake City	UT						✓	✓
AMAZON.COM	Herriman	UT						✓	
AMAZON.COM	Salt Lake City	UT							✓
AMAZON.COM	SLC	UT		✓					✓
Amazon.com / E ZEE ELECTRONICS	Salt Lake City	UT							✓
Any Hour Electric, Plumbing, Heating & Air	Orem	UT							✓
Apex Clean Air	Salt Lake City	UT							✓
Apollo energy	West Haven Utah	UT							✓
Apple Store	Murray	UT						✓	
Argenta Home	Sandy	UT						✓	
Arrant Heating & Air Conditioning	Hooper	UT							✓
Auric	West Valley City	UT							✓
Bed Bath & Beyond - Online	online	UT							✓
Bed Bath & Beyond #0783	Ogden	UT						✓	✓
Bed Bath & Beyond #0802	West Jordan	UT						✓	✓
Bed Bath & Beyond #1140	American Folk	UT							✓
Bed Bath & Beyond #198	Midvale	UT							✓
Bed Bath & Beyond #270	West Valley City	UT	✓						
Bed Bath & Beyond #294	Salt Lake City	UT						✓	✓
Ben Henry Heating and Air	North Ogden	UT							✓
Ben Lomond HVAC	Ogden	UT							✓
Best Buy	Alpine	UT						✓	

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Best Buy	American Fork	UT							✓
Best Buy	Farmington	UT							✓
Best Buy	Logan	UT				✓	✓	✓	✓
Best Buy	Murray	UT							✓
Best Buy	Riverdale	UT	✓						
Best Buy	Sandy	UT							✓
Best Buy #1146	West Jordan	UT	✓	✓		✓		✓	✓
Best Buy #1402	American Fork	UT	✓	✓				✓	✓
Best Buy #1761	Park City	UT	✓				✓		✓
Best Buy #1887	Farmington	UT		✓				✓	✓
Best Buy #496	Riverdale	UT						✓	✓
Best Buy #497	Sandy	UT	✓					✓	✓
Best Buy #521	Murray	UT	✓					✓	✓
Best Buy #527	Salt Lake City	UT		✓				✓	✓
Best Buy #773	Orem	UT							✓
Best Buy #891	Washington	UT							✓
Best Buy #945	Logan	UT		✓					
Best Buy 1402	American Fork	UT	✓						
Best Buy BBY_521	Murray	UT							✓
Best Buy Farmington	Farmington	UT						✓	✓
Best Buy online	Ogden	UT	✓					✓	✓
Best Buy online	Pleasant Grove	UT						✓	✓
BestBuy	American Fork	UT							✓
BestBuy	Murray	UT							✓
BestBuy	Sandy	UT							✓
Bills Comfort Systems	Layton	UT						✓	□
Bills Comfort Systems Murray	Murray	UT							✓
Black Diamond Service Experts	South Salt Lake	UT							✓
Border States Electric Wholesale Supply	Orem	UT							✓
Bountiful Mechanical	west bountiful	UT							✓
Brigham Heating & Cooling	Brigham City	UT						✓	□

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
CED Green Tech	West Valley City	UT							✓
Cedar Valley Heating & Air Conditioning	Cedar City	UT							✓
CEME LED LLC	Layton	UT					✓		□
Chadsco Service LLC.	84070	UT							✓
Clean Air of Utah	N. Salt Lake	UT							✓
Comfort Level LLC	Draper	UT							✓
Comfort Technologies	Tooele	UT						✓	✓
Comfort Zone	Midvale	UT							✓
Connelly Heating & Air Conditioning, Inc.	Provo	UT							✓
Consolidated Electrical Distribution	Ogden	UT							✓
Contractor installed. Genuine Comfort HVAC	Centerville	UT							✓
COOLING AND HEATING SUPPLY	Cedar City	UT							✓
Costco	Bountiful	UT							✓
Costco	Lehi,	UT	✓						✓
Costco	Murray	UT							✓
Costco	Ogden	UT						✓	
Costco	Orem	UT							✓
Costco	Salt Lake City	UT						✓	✓
Costco	Sandy	UT							✓
Costco	South Jordan	UT						✓	✓
Costco	South Ogden	UT							✓
Costco	Spanish Fork	UT							✓
Costco	St. George	UT							✓
Costco	West Valley City	UT							✓
Costco #1019	South Jordan	UT	✓			✓		✓	✓
Costco #1118	Spanish Fork	UT							✓
Costco #113	Salt Lake City	UT	✓	✓				✓	✓
Costco #484	Orem	UT	✓				✓	✓	✓
Costco #487	Sandy	UT	✓					✓	✓
Costco #622	West Valley City	UT	✓					✓	✓
Costco #672	St. George	UT				✓		✓	✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Costco #733	Lehi	UT		✓				✓	✓
Costco #735	W Bountiful	UT						✓	✓
Costco #735	west bountiful	UT	✓					✓	✓
Costco #764	Murray	UT	✓					✓	✓
Costco #770	Ogden	UT	✓			✓		✓	✓
Costco Sandy	Sandy	UT	✓					✓	✓
Costco West Bountiful #735	west bountiful	UT						✓	✓
Costco West Valley	West Valley City	UT		✓				✓	✓
COSTCO WHOLESALE	Bountiful	UT	✓					✓	✓
COSTCO WHOLESALE	Murray	UT						✓	✓
COSTCO WHOLESALE	Orem	UT							✓
COSTCO WHOLESALE	Salt Lake City	UT						✓	✓
COSTCO WHOLESALE	South Jordan	UT							✓
COSTCO WHOLESALE	South Ogden	UT	✓						✓
COSTCO WHOLESALE	St. George	UT							✓
COSTCO WHOLESALE	west bountiful	UT							✓
Costco Wholesale #1019	South Jordan	UT	✓						✓
Costco Wholesale 1019	South Jordan	UT	✓						✓
Costco.com	0	UT							✓
Costco.com	Sandy	UT	✓					✓	
COZY HVAC	Draper	UT							✓
Denny's Service Co	Ogden	UT							✓
Dish Network	Salt Lake City	UT							✓
Dish Network	St. George	UT				✓			✓
Duct Cleaning + HVAC	Ogden	UT							✓
EBay	Draper	UT						✓	
EBay	Salt Lake City	UT							✓
Ecobee.com	unknown	UT						✓	✓
Efficient Systems Heating & Cooling	Murray	UT							✓
Epic Heating & Air	Salt Lake City	UT							✓
ESCO Heating, Cooling, Plumbing & Electrical	Salt Lake City	UT				✓		✓	

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
ESCO Services	Salt Lake City	UT							✓
Ferguson	Lehi	UT							✓
Ferguson	Salt Lake City	UT							✓
Ferguson Enterprises	Salt Lake City	UT							✓
Fifth Gear A/V	Orem	UT							✓
GA LARSON	Salt Lake City	UT							✓
Genuine Comfort HVAC	Centerville	UT							✓
Google Fiber	Salt Lake City	UT	✓						
Google Store	online	UT	✓	✓		✓			✓
Green Canyon Electrical Inc.	Farmington	UT	✓						
Greenfly Energy Savers	Sandy	UT						✓	✓
Heavenly Heating and Cooling	Magna	UT						✓	✓
Home Depot	American Fork	UT						✓	✓
Home Depot	Centerville	UT	✓					✓	✓
Home Depot	Layton	UT							✓
Home Depot	Ogden	UT							✓
Home Depot	Provo	UT	✓						
Home Depot	Riverdale	UT	✓					✓	✓
Home Depot	Riverton	UT						✓	
Home Depot	Salt Lake City	UT			✓			✓	✓
Home Depot	Sandy	UT						✓	✓
Home Depot	South Jordan	UT							✓
Home Depot	West Jordan	UT							✓
Home Depot - Online	online	UT							✓
Home Depot - Online	Salt Lake City	UT							✓
Home depot # 4411	Ogden	UT							✓
HOME DEPOT #3852	Riverton	UT						✓	✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Home Depot #4401	Riverdale	UT	✓	✓				✓	✓
Home Depot #4402	Salt Lake City	UT		✓			✓	✓	✓
Home Depot #4403	Salt Lake City	UT					✓	✓	✓
Home Depot #4406	West Valley City	UT	✓					✓	✓
Home Depot #4407	Lindon	UT	✓					✓	✓
Home Depot #4408	Centerville	UT	✓			✓		✓	✓
Home Depot #4409	Sandy	UT	✓			✓		✓	✓
Home Depot #4410	West Jordan	UT	✓					✓	✓
Home Depot #4411	Ogden	UT	✓				✓	✓	✓
Home Depot #4412	Washington	UT				✓			✓
Home Depot #4413	Salt Lake City	UT	✓					✓	✓
Home Depot #4414	Logan	UT	✓					✓	✓
Home Depot #4415	Park City	UT	✓						✓
Home Depot #4416	Provo	UT						✓	✓
Home Depot #4417	American Fork	UT	✓			✓		✓	✓
Home Depot #4418	Cedar City	UT	✓						✓
Home Depot #4419	Tooele	UT	✓						✓
Home Depot #4420	St. George	UT	✓					✓	✓
Home Depot #4421	Sandy	UT	✓					✓	✓
Home Depot #4422	Richfield	UT	✓					✓	✓
Home Depot #8566	Riverton	UT	✓	✓		✓		✓	✓
Home Depot #8583	Layton	UT	✓				✓	✓	✓
Home Depot Lindon	Lindon	UT							✓
Home Depot Ogden	Ogden	UT						✓	✓
HOME DEPOT ONLINE	Layton	UT							✓
HOME DEPOT ONLINE	Riverton	UT							✓
Home depot	American Fork	UT						✓	✓
Home depot	Cedar City	UT							✓
Home depot	Park City	UT							✓
Home depot	Provo	UT							✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Home depot	Salt Lake City	UT							✓
Home depot	West Jordan	UT							✓
HomeDepot.com	Sandy	UT							✓
Humphrey heating and air	Bountiful	UT							✓
HVAC Services of Utah LLC	Layton	UT							✓
JC Penney	Riverdale	UT							✓
JD Electric LLC	Saratoga Springs	UT							✓
JL Mechanical	Pleasant Grove	UT							✓
Johnson Mechanical solution	Brigham City	UT						✓	
JOHNSTONE SUPPLY	Salt Lake City	UT	✓						✓
JOHNSTONE SUPPLY	SLC	UT							✓
Jones Heating & Air Conditioning	West Valley City	UT							✓
Jones Heating & Air Conditioning, Inc.	West Valley City	UT							✓
JRC, INC	Salt Lake City	UT							✓
KEYSTONE TECHNOLOGIES	Roy	UT							✓
Kohl’s	Clinton	UT					✓		
Kohl’s	Draper	UT							✓
Kohl’s	Layton	UT						✓	✓
Kohl’s	North Logan	UT							✓
Kohl’s	Salt Lake City	UT							✓
Kohl’s	Washington	UT						✓	✓
Kohl’s	West Jordan	UT	✓					✓	✓
Kohl's	Centerville	UT							✓
Kohl's	Clinton	UT	✓						
Kohl's	online	UT	✓						
Kohl's	Riverton	UT	✓						
Kohl's	West Jordan	UT						✓	
Kohl's - Brickyard	Salt Lake City	UT							✓
Kohl's Online	n/a	UT						✓	✓
L & H Electric, Inc.	Beaver	UT							✓
Larsen Heating and Air	Saratoga Springs	UT							✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Loews #1613	West Jordan	UT		✓					
Lowes	Clinton	UT						✓	
Lowes	Lehi	UT	✓						✓
Lowes	Riverdale	UT						✓	
Lowes	Riverton	UT							✓
Lowes Home Centers, LLC	Logan	UT							✓
Lowes	Bountiful	UT							✓
Lowes	Clinton	UT							✓
Lowes	Layton	UT						✓	
Lowes	Lehi	UT							✓
Lowes	Logan	UT							✓
Lowes	Murray	UT							✓
Lowes	Orem	UT							✓
Lowes	Riverdale	UT						✓	✓
Lowes	Riverton	UT						✓	✓
Lowes	Salt Lake City	UT							✓
Lowes	Sandy	UT							✓
Lowes	Vernal	UT					✓		
Lowes	WEST VALLEY	UT						✓	
Lowes	west bountiful	UT						✓	✓
Lowes	West Jordan	UT							✓
Lowes	West Valley City	UT							✓
Lowe's	Layton	UT						✓	✓
Lowe's	Lehi	UT							✓
Lowe's	Logan	UT							✓
Lowe's	Ogden	UT							✓
Lowe's	Orem	UT						✓	
Lowe's	Riverton	UT	✓					✓	✓
Lowe's	Salt Lake City	UT							✓
Lowe's	Sandy	UT							✓
Lowe's	west bountiful	UT							✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
LOWES - 0015	Layton	UT					✓	✓	✓
LOWES - 0342	Murray	UT						✓	✓
Lowe's - 1133	West Valley City	UT							✓
Lowes - 2606	Sandy	UT							✓
LOWES - 2845	Clinton	UT						✓	✓
Lowe's #1080	Riverdale	UT							✓
Lowe's #1118	St. George	UT							✓
Lowe's #1133	West Valley City	UT						✓	✓
Lowe's #15	Layton	UT	✓						✓
Lowe's #1501	Logan	UT						✓	✓
Lowes #1613	West Jordan	UT	✓						
Lowe's #1613	West Jordan	UT						✓	✓
Lowe's #178	Orem	UT						✓	✓
Lowe's #2275	Salt Lake City	UT							✓
Lowe's #2293	Lehi	UT						✓	✓
Lowe's #2296	Riverton	UT	✓					✓	✓
Lowe's #2606	Sandy	UT						✓	✓
Lowe's #2662	west bountiful	UT	✓						✓
Lowe's #2834	Vernal	UT	✓						
Lowe's #2845	Clinton	UT		✓				✓	✓
Lowe's #2858	Ogden	UT							✓
Lowe's #342	Murray	UT							✓
Lowes 1613	West Jordan	UT	✓						✓
Lowe's Home Center	Clinton	UT							✓
Lowe's Home Center, LLC	Sandy	UT							✓
LOWE'S HOME CENTERS, LLC	Riverton	UT	✓						
LOWE'S HOME CENTERS, LLC	Salt Lake City	UT							✓
LOWE'S HOME CENTERS, LLC	West Jordan	UT							✓
Lowes Home Improvement	Riverton	UT						✓	
Lowe's of Lehi Utah	Lehi	UT							✓
Lowes of Ogden Utah	Ogden	UT							✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Lowe's of Sandy, UT	Sandy	UT							✓
Lowes online	Riverdale	UT							✓
LOWES- ONLINE	Ogden	UT							✓
LOWES STORE # 2662	west bountiful	UT							✓
Lowes Store #2275	Salt Lake City	UT						✓	✓
Lowes.com	Layton	UT							✓
lowes.com - Picked up Riverton, UT #2296	Riverton	UT							✓
Lowes-907	Clinton	UT							✓
Macys	Sandy	UT						✓	✓
Main Street Heating & Cooling	Sandy	UT	✓						✓
Main Street Heating and Cooling	Sandy	UT						✓	✓
Main street Heating and Air	Sandy	UT						✓	
Manwill Plumbing and Heating	Salt Lake City	UT						✓	
Modern Furnace and Air	Salt Lake City	UT							✓
Modern Heating and Air	West Jordan	UT							✓
Mountain Breeze Heating & Air LLC	Taylorsville	UT							✓
Mountain West Distributors INC	Salt Lake City	UT						✓	✓
My Buddy the Plumber	Salt Lake	UT						✓	✓
Nest	Nest.com	UT						✓	✓
Nest.com	.	UT				✓		✓	✓
Nest.com	online	UT						✓	✓
Newton Heating and Air Conditioning	SLC	UT						✓	
Nordstrom	Murray	UT						✓	✓
Nordstrom	Salt Lake City	UT							✓
Office Depot	American Fork	UT							✓
Office Depot	Layton	UT							✓
Office Max	Layton	UT							✓
One Stop Heating and Air Conditioning	Sandy	UT							✓
Osman’s Hometown Heating & Air	Heber	UT		✓					✓
Overstock.com	Midvale	UT							✓
Paul Bros Heating and Air	Midvale	UT						✓	

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Platinum Mechanical	Hooper	UT							✓
Plumbers Stock	Cedar City	UT							✓
Pond's Plumbing Heating & Air Conditioning	North Salt Lake	UT				✓			
PRECISION AIR MANAGEMENT	Lehi	UT							✓
Premier Strand	Murray	UT					✓		✓
Quality HVAC Service	Cottonwood Heights	UT							✓
Rakuten.com	online	UT						✓	✓
RC Willey	Draper	UT							✓
RC Willey	South Salt Lake	UT	✓					✓	
RC Willey	Syracuse	UT							✓
RC Willey - Riverdale	Riverdale	UT						✓	✓
RC Willey - Syracuse	Syracuse	UT							✓
RC Willey- Draper	Draper	UT							✓
RC Willey Home Furnishings	Salt Lake City	UT						✓	✓
RCWilley	Draper	UT							✓
RCWilley	Murray	UT							✓
RCWilley.com	Salt Lake City	UT							✓
RENTMEISTER	Syracuse	UT							✓
Retro Man	Layton	UT							✓
Riverton Home Depot	Riverton	UT							✓
Royal Plumbing, Heating & Air Conditioning	Ogden	UT							✓
Royal Wholesale Electric	Logan	UT						✓	
salmon hvac	Centerville	UT							✓
Salt Lake City Lowe's	Salt Lake City	UT							✓
Same Day Heating & Air	South Salt Lake	UT							✓
Sam’s Club	Layton	UT						✓	
Sam’s Club	Logan	UT		✓					
Sam’s Club	Provo	UT						✓	
Sam’s Club	Layton	UT							✓
Sam’s Club	West Jordan	UT							✓
Sam's Club #4718	South Jordan	UT							✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Sam's Club #6686	Salt Lake City	UT							✓
Scott Heating & Air Inc.	Ogden	UT	✓						✓
SELECT COMFORT SYSTEMS	West Valley City	UT				✓			
SHOPKO	Layton	UT							✓
SHOPKO	Logan	UT						✓	
SHOPKO	Orem	UT							✓
SHOPKO	Taylorsville	UT							✓
Shopko Riverdale	Riverdale	UT							✓
Sky lake Heating & Air	Herriman	UT							✓
Smiths	West Jordan	UT							✓
Smith's	online	UT							✓
Smith's #444	Bountiful	UT							✓
Smith's Market place	Salt Lake City	UT							✓
Smith's Marketplace	Lehi	UT							✓
Smith's Marketplace #475	Salt Lake City	UT		✓					
Smith's Marketplace #495	West Jordan	UT							✓
Sorenson Unity Center	Salt Lake City	UT						✓	
South Jordan Target	South Jordan	UT						✓	✓
Southern Comfort Heating/Air	Mount Pleasant	UT							✓
Standard Plumbing Supply	Sandy	UT							✓
Staples.com	Layton	UT							✓
STRAND HVAC	Park City	UT							✓
Target	American Fork	UT						✓	✓
Target	Riverdale	UT							✓
Target	Sandy	UT							✓
Target	South Jordan	UT							✓
Target	St George	UT							✓
Target	West valley	UT							✓
Target #T1751	Salt Lake City	UT	✓					✓	✓
Target #T1754	Orem	UT						✓	✓
Target of American Fork	American Fork	UT						✓	✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Target Store 1752	Sandy	UT						✓	✓
Target Store 1755	Layton	UT						✓	✓
Target Store 2123	South Jordan	UT							✓
Target Store 2150	West Jordan	UT							✓
Target Store 2609	West Valley City	UT							✓
Target Store 2641	Salt Lake City	UT							✓
Target-Centerville	Centerville	UT	✓					✓	✓
the home deport	Sandy	UT						✓	
The Home Depot	American Fork	UT						✓	✓
The Home Depot	Cedar City	UT							✓
The Home Depot	Herriman	UT							✓
The Home Depot	Logan	UT							✓
The Home Depot	Ogden	UT						✓	✓
The Home Depot	Riverton	UT						✓	✓
The Home Depot	Salt Lake City	UT						✓	✓
The Home Depot	Sandy	UT							✓
The Home Depot	SLC	UT							✓
The Home Depot	Tooele	UT							✓
The Home Depot	West Jordan	UT						✓	
The Home Depot # 4420	St. George	UT	✓						
The Home Depot #4417	American Fork	UT	✓					✓	✓
The Home Depot 4411	Ogden	UT							✓
Thompson Comfort Connection	Sandy	UT							✓
Thompsons comfort connection	Midvale	UT							✓
Thompson's	Sandy	UT							✓
Thompson's Comfort Connection	Midvale	UT						✓	✓
Thompson's Comfort Connection	Sandy	UT	✓			✓		✓	✓
Thompsons Comfort Connection	Sandy	UT						✓	
Thornton Plumbing and Heating	Midvale	UT							✓
T-Mobile	American Fork	UT							✓
T-Mobile	Springville	UT						✓	

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Total Air Control	Layton	UT							✓
Tygr Industries	Springville	UT							✓
Unique Heating and Cooling Systems	Riverton	UT							✓
Utah's Best Heating and Air	Layton	UT							✓
VERIZON	West Valley City	UT						✓	
Verizon Wireless	Logan	UT							✓
Verizon Wireless	Orem	UT							✓
Verizon Wireless	Riverton	UT							✓
Vivant Home Services	SLC	UT							✓
VIVINT	Provo	UT							✓
Vivint Smart Home	Provo	UT		✓				✓	✓
Vivint Smart Home	Salt Lake City	UT							✓
Walmart	Harrisville	UT							✓
Walmart	Layton	UT							✓
Walmart	Perry	UT							✓
Walmart	Riverton	UT	✓						
Walmart	Salt Lake City	UT							✓
Walmart	Spanish Fork	UT							✓
Walmart #04272	Logan	UT							✓
Walmart #1438	Cedar City	UT							✓
Walmart #1708	Riverdale	UT							✓
Walmart #2307	South Jordan	UT							✓
Walmart #2921	Harrisville	UT							✓
Walmart #3589	Salt Lake City	UT							✓
Walmart #3848	Syracuse	UT						✓	
Walmart #4689	Cedar Hills	UT							✓
Walmart #5167	Payson	UT							✓
Walmart #5234	Clinton	UT							✓
Walmart #5763	South Jordan	UT							✓
Walmart of Saratoga Springs	Saratoga Springs	UT							✓
Walmart Online	Internet	UT							✓

Retailers	City	State	Connected Thermostat - CAC Only - UT	Connected Thermostat - Electric FAF w/ CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Connected Thermostat - Electric FAF w/out CAC - UT	Smart T-stat w/ ASHP - UT	Smart T-stat w/ EFAF + CAC - UT	Smart T-stat w/ Gas FAF + CAC - UT
Walmart Supercenter	Centerville	UT							✓
West Bountiful Lowes - Online	west bountiful	UT						✓	
Western Heating & Air Conditioning	Orem	UT							✓
Winnelson	Vernal	UT							✓
www.Bestbuy.com	SLC	UT						✓	✓
www.nest.com	Woods Cross	UT							✓
Your Comfort Heating & Air Conditioning	Brighton City	UT							✓
Zulily	online	UT							✓

Table 3: 2019 Non-Participating Downstream Retailers

Retailers	City	State	Connected Thermostat CAC Only - UT	Connected Thermostat Electric FAF w/CAC - UT	Connected Thermostat Electric Heat Pump - UT	Smart T-stat w/ASHP - UT	Smart T-stat w/EFAF - UT	Smart T-stat w/EFAF + CAC- UT	Smart T-stat w/Gas FAF + CAC- UT
1601	NEWARK	DE							✓
AAFES-Military Exchange	Dallas	TX	✓						
AC Wholesalers	Doral	FL							✓
AceHardware.com	Loxley	AL							✓
Adorama.com	New York	NY							✓
Amazon	NA	IL							✓
Amazon	online	AL	✓					✓	✓
Amazon	online	NJ						✓	✓
Amazon	Seattle	WA	✓					✓	✓
Amazon Fulfillment Services	North Las Vegas	NV							✓
Amazon Prime	Seattle	WA						✓	✓
AMAZON.COM	Kent	WA							✓
AMAZON.COM	N Seattle	WA	✓	✓					✓
AMAZON.COM	Seattle	WA	✓	✓		✓		✓	✓
Amazon.com Inc.	Seattle	WA	✓	✓		✓		✓	✓
Amazon.com, Inc.	Seattle	WA						✓	✓
B&H Photo Video	New York	NY							✓
Bed Bath & Beyond	Lakewood	CA						✓	
Bed Bath & Beyond Inc.	Union	NJ							✓
Bed bath and beyond	Las Vegas	NV							✓
Best Buy	online	NJ							✓
Best Buy	Richfield	MN						✓	✓
Best Buy #109	Los Angeles	CA						✓	
Best Buy (Online)	online	NJ							✓
Best Buy online	Richfield	MN						✓	
BestBuy	Grand Junction	CO				✓			
BestBuy	Houston	TX							✓
BestBuy.com	East Brunswick	NJ							✓
BestBuy.com	Minneapolis	MN	✓	✓					
BestBuy.com	online	NJ				✓		✓	✓
BestBuy.com	Richfield	MN						✓	✓
BestBuy.com	(blank)	(blank)							✓
bhphotovideo.com	New York	NY							✓
BLINQ.com	DC	WA							✓
Build.com	ON-LINE	NJ						✓	
buydig.com	EDISON	NJ		✓					✓

Retailers	City	State	Connected Thermostat CAC Only - UT	Connected Thermostat Electric FAF w/CAC - UT	Connected Thermostat Electric Heat Pump - UT	Smart T-stat w/ASHP - UT	Smart T-stat w/EFAF - UT	Smart T-stat w/EFAF + CAC- UT	Smart T-stat w/Gas FAF + CAC- UT
Costco	Billings	MT							✓
Costco	FULLERTON	CA							✓
Costco	Online Purchase	NJ						✓	✓
Costco Online	EDISON	NJ							✓
Costco #09	Aloha	OR							✓
Costco #117	Westlake Village	CA							✓
Costco (online)	Brick	NJ							✓
Costco .com online order	Seattle	WA						✓	✓
Costco Online	online	NJ						✓	✓
Costco Online	Seattle	WA				✓		✓	✓
Costco Online	WOOD RIDGE	NJ						✓	
COSTCO WHOLESALE	Issaquah	WA							✓
COSTCO WHOLESALE	Morganville	NJ					✓	✓	✓
COSTCO WHOLESALE	Roseburg	OR						✓	
COSTCO WHOLESALE (ONLINE AT COSTCO.COM)	Seattle	WA	✓				✓	✓	✓
Costco Wholesale - Costco.com	online	NJ							✓
Costco Wholesale - www.costco.com	online	NJ							✓
Costco.com	Issaquah	WA						✓	✓
Costco.com	Issaquah	WA	✓	✓					✓
Costco.com	NORTH BRUNSWICK	NJ							✓
Costco.com	ONLINE ORDER	AL	✓					✓	✓
Costco.com	Seattle	WA	✓					✓	✓
Costco.com	(blank)	(blank)				✓		✓	✓
Costco.com (online)	Randolph	NJ							✓
COSTCOWHOLESALE.COM	ONLINE ORDER	AL	✓					✓	✓
Crutchfiled	Charlottesville	VA							✓
Daily Steals online through Facebook marketplace	Miami	FL						✓	
Dell	Idaho	ID							✓
Dell	Lebanon	TN							✓
EBay	EDISON	NJ							✓
EBay	San Hose	CA							✓
EBay	San Jose	CA							✓
EBay	The Internet	CA							✓
EBay	Westminster	CA							✓
EBay - Callaway Group, Inc.	Newport Beach	CA							✓
EBay - Diehard 3	Alexandria	VA							✓

Retailers	City	State	Connected Thermostat CAC Only - UT	Connected Thermostat Electric FAF w/CAC - UT	Connected Thermostat Electric Heat Pump - UT	Smart T-stat w/ASHP - UT	Smart T-stat w/EFAF - UT	Smart T-stat w/EFAF + CAC- UT	Smart T-stat w/Gas FAF + CAC- UT
eBay Inc.	San Jose	CA						✓	✓
EBay online	San Jose	CA							✓
ebay.com	San Jose	CA						✓	✓
Ecobee	Carol Stream	IL						✓	✓
Ecobee LTD	Carol Stream	IL							✓
Ecobee.com	Carol Stream	IL						✓	✓
Ecobee.com	Toronto	ON							✓
ETech Galaxy	Ft Worth	TX							✓
E-Tech Galaxy LLC	Fort Worth	TX							✓
Facebook	Menlo Park	CA							✓
Facebook Daily Steals	Menlo Park	CA						✓	
Fingerhut	Eden prairie	MN							✓
Good Guys Electronics	Still Online	CA							✓
Google Express	Mountain View	CA						✓	
Google Express	San Francisco	CA				✓		✓	
Google Express	San Jose	CA						✓	✓
Google Fiber	Mountain View	CA							✓
Google Fiber	Mountain View	CA							✓
Google LLC	Mountain View	CA	✓	✓					✓
Google Merchandise Store	Mountain View	CA						✓	
Google Nest Online Store	online	WY						✓	✓
Google Store	Mountain View	CA	✓	✓	✓		✓	✓	✓
Google, Inc.	Mountain View	CA						✓	✓
Groupon.com	Hebron	KY						✓	✓
Hewlett-Packard	Pail Alto	CA							✓
Home Depot	Baton Rouge	LA							✓
Home Depot	online	NJ							✓
Home Depot	ON-LINE	NJ							✓
Home Depot #3855	Fairborn	OH							✓
Home Depot Online - www.HomeDepot.com	Home Depot Online - www.HomeDepot.com	NJ							✓
Home Depot Online www.homedepot.com	Atlanta	GA	✓					✓	✓
HOME DEPOT.COM	0	NJ							✓
HomeDepot.com	n/a	(blank)					✓	✓	✓
HomeDepot.com	ONLINE ORDER	NJ						✓	
Innovative Tech Corp	Brooklyn	NY							✓
Kohl?s.com	Middletown	OH							✓

Retailers	City	State	Connected Thermostat CAC Only - UT	Connected Thermostat Electric FAF w/CAC - UT	Connected Thermostat Electric Heat Pump - UT	Smart T-stat w/ASHP - UT	Smart T-stat w/EFAF - UT	Smart T-stat w/EFAF + CAC- UT	Smart T-stat w/Gas FAF + CAC- UT
Kohl’s	Middletown	OH							✓
Kohl's	Lakeside	CA							✓
Kohl’s Department Stores INC	Menomonee Falls	WI	✓					✓	✓
Kohls.com	Middletown	OH							✓
Kohls.com	Milwaukee	WI							✓
Kroger	Cincinnati	OH						✓	
Kwality Co	Ephrata	PA						✓	
Lowes	Grand Junction	CO							✓
Lowes	online	NJ							✓
Lowe's	North Wilkesboro	NC	✓						✓
Lowe's	Rancho Cucamonga	CA							✓
Lowes - 506	Athens	GA							✓
LOWE'S - Online	North Wilkesboro	NC						✓	✓
Lowes #1636- ABQ- Albuquerque	Albuquerque	NM							✓
Lowe's Online	North Wilkesboro	NC	✓						✓
Lowes.com	Millville	NJ						✓	
Lowes.com	North Wilkesboro	NC	✓						✓
Lowes.com	ONLINE ORDER	NJ							✓
Lowes.com	(blank)	(blank)	✓					✓	✓
Lowe's.com	Sicklerville	NJ							✓
Mass Genie	Irvine	CA							✓
massgenie.com	Costa Mesa	CA						✓	
Meijer #169	Bolingbrook	IL							✓
Mercari	Palo Alto	CA							✓
Monoprice Inc.	Ranco Cucamonga	CA							✓
Monoprice, Inc.	Rancho Cucamonga	CA							✓
Nest	Mira Loma	CA							✓
Nest	Palo Alto	CA						✓	✓
Nest Labs, Inc.	Palo Alto	CA							✓
Nest.com	Palo Alto	CA						✓	✓
Newegg	City of Industry	CA							✓
Newegg, Online	City of Industry	CA						✓	✓
newegg.com	City of Industry	CA							✓
newegg.com	online	CA						✓	✓
newegg.com	Whittier	CA							✓
Office Depot	Denver	CO							✓
go wireless	riverside	CA							✓

Retailers	City	State	Connected Thermostat CAC Only - UT	Connected Thermostat Electric FAF w/CAC - UT	Connected Thermostat Electric Heat Pump - UT	Smart T-stat w/ASHP - UT	Smart T-stat w/EFAF - UT	Smart T-stat w/EFAF + CAC- UT	Smart T-stat w/Gas FAF + CAC- UT
PayPal	Oceanside	NY						✓	✓
PCMag Shop	Austin	TX							✓
QVC	West Chester	PA						✓	✓
Rakuten	San Mateo	CA							✓
Rakuten.com	Aliso Viejo	CA						✓	✓
Rakuten.com	Chatsworth	CA						✓	✓
Sam's Club	online	NJ							✓
SANIeStore	Butte	MT							✓
store.nest.com	Palo Alto	CA						✓	✓
Target.com	Indianapolis	IN	✓					✓	✓
Target.com	Minneapolis	MN				✓		✓	✓
Target.com	online	CA						✓	✓
The Home Depot, Inc.	Atlanta	GA							✓
Verizon.com	New York	NY							✓
Walmart #1878	Rexburg	ID							✓
wal-mart.com	(blank)	(blank)						✓	✓
Wholesale Home Improvements	Bayonne	NJ							✓
Woot.com	Carrollton	TX						✓	✓
WWW COSTCO COM	Issaquah	WA						✓	✓
www.Amazon.com	n/a	AK							✓
www.costco.com	online	WA							✓
www.costco.com	online	NJ							✓
www.eBay.com	San Jose	CA						✓	✓
www.wayfair.com	Boston	MA						✓	

Table 4: 2019 Participating HVAC Trade Allies

Retailers	City	State	Ductless Heat Pump- Multi-Head - Downstream UT	Ductless Heat Pump- Supplemental Heat - Downstream UT	ECM on Existing Furnace - Downstream - UT	Evaporative Cooler - Midmarket - Distributor - Min 3,500 CFM - UT	Evaporative Cooler - Midmarket - Retail - Min 3,500 CFM - UT	Heat Pump Conversion - Tier 1 - 9.0 HSFP and 15 SEER - Downstream - UT	Heat Pump Conversion - Tier 2 - 9.5 HSFP and 16 SEER - Downstream - UT	HPWH - Tier 2 and above - Indoor Gas Heat - 0.55 Gallons - Self Install -	HPWH - Tier 2 and above - Basement- 0.55 Gallons - Self Install -	HPWH - Tier 3+ - 0.55 Gal - Self Install - UT	Whole House Ventilation Fan - UT
Absolute Air Heating and Air Conditioning	Mapleton	UT	✓	✓									
ACX Service	West Haven	UT			✓								
Advanced Air Inc.	Hurricane	UT	✓										
After Hours Heating & Cooling	Holladay	UT		✓	✓								
Air Care Professionals, LLC	St. George	UT		✓									
Air Now Heating & Air Conditioning	Ogden	UT	✓	✓									
Any Climate Mechanical	Sandy	UT		✓									
Any Hour, Inc.	Orem	UT		✓									
Authority Heating & Cooling	Orem	UT		✓									
Black Diamond Experts	Salt Lake City	UT	✓										
Bridger land Heating & Air Conditioning	Farr West	UT	✓										
Bryan Pons Enterprises	Taylorsville	UT		✓									
Cedar Valley Heating and Air Conditioning	Cedar City	UT				✓							
Comfort Solutions	Ogden	UT		✓									
Concierge Cooler Service	Cottonwood Heights	UT				✓							
Coyote Canyon HVAC	Layton	UT	✓	✓									
Croft Heating & Cooling	Bountiful	UT							✓				
CTR Heating and Air	South Jordan	UT		✓									
Davis Heating & A/C Services-midmarket	Cedar City	UT				✓							
Denny's Service Co	South Ogden	UT		✓	✓								
Dick Kersley Service Center	Clearfield	UT			✓								
ESCO Services	Salt Lake City	UT		✓									
Fresh Breeze LLC DBA QC	South Jordan	UT											✓
Friendly Plumber LLC	Salt Lake City	UT		✓									
Gray Wolf Mechanical	Provo	UT	✓										
Gunther's Comfort Air	American Fork	UT		✓									
Heavenly Heating and Cooling	Magna	UT		✓									
Home Depot	Riverton	UT										✓	
Home Depot #4401	Riverdale	UT					✓						
Home Depot #4402	Salt Lake City	UT					✓						

Retailers	City	State	Ductless Heat Pump- Multi-Head - Downstream UT	Ductless Heat Pump- Supplemental Heat - Downstream UT	ECM on Existing Furnace - Downstream - UT	Evaporative Cooler - Midmarket - Distributor - Min 3,500 CFM - UT	Evaporative Cooler - Midmarket - Retail - Min 3,500 CFM - UT	Heat Pump Conversion - Tier 1 - 9.0 HSFP and 15 SEER - Downstream - UT	Heat Pump Conversion - Tier 2 - 9.5 HSFP and 16 SEER - Downstream - UT	HPWH - Tier 2 and above - Indoor Gas Heat - 0.55 Gallons - Self Install -	HPWH - Tier 2 and above - Basement- 0.55 Gallons - Self Install -	HPWH - Tier 3+ - 0.55 Gal - Self Install - UT	Whole House Ventilation Fan - UT
Home Depot #4403	Salt Lake City	UT					✓						
Home Depot #4406	West Valley City	UT					✓			✓			
Home Depot #4409	Sandy	UT					✓						
Home Depot #4410	West Jordan	UT					✓						
Home Depot #4411	Ogden	UT					✓						
Home Depot #4413	Salt Lake City	UT					✓						
Home Depot #4415	Park City	UT					✓						
Home Depot #4418	Cedar City	UT					✓						
Home Depot #4419	Tooele	UT					✓						
Home Depot #4421	Sandy	UT					✓						
Home Depot #8566	Riverton	UT					✓						
Home Depot #8583	Layton	UT					✓						
HVAC Construction, Inc.	North Salt Lake	UT		✓									
Ideal Heating & Cooling Inc.	Park City	UT		✓									
J&M Plumbing-midmarket	West Jordan	UT				✓							
Just Right Heating & Cooling LLC	Salt Lake City	UT	✓										
K.O. Installers, Inc.	Plain City	UT				✓							
Lowe's #1080	Riverdale	UT					✓						
Lowe's #1133	West Valley City	UT					✓						
Lowe's #15	Layton	UT					✓						
Lowe's #1613	West Jordan	UT					✓						
Lowe's #2275	Salt Lake City	UT					✓						
Lowe's #2296	Riverton	UT					✓						
Lowe's #2606	Sandy	UT					✓						
Lowe's #2845	Clinton	UT					✓						
Lowe's #2858	Ogden	UT					✓						
Lowe's #342	Murray	UT					✓						
Main Street Heating & Cooling	Sandy	UT		✓									
Manwill Plumbing and Heating	Salt Lake City	UT		✓									
My Buddy the Plumber	Salt Lake	UT									✓		
Nebo Comfort Systems	Payson	UT	✓										
Service Experts Heating & Air Conditioning	Ogden	UT		✓									
Service Experts of Salt Lake City	Midvale	UT	✓	✓									
Superior Water and Air Inc.	West Valley City	UT						✓					

Retailers	City	State	Ductless Heat Pump- Multi-Head - Downstream UT	Ductless Heat Pump- Supplemental Heat - Downstream UT	ECM on Existing Furnace - Downstream - UT	Evaporative Cooler - Midmarket - Distributor - Min 3,500 CFM - UT	Evaporative Cooler - Midmarket - Retail - Min 3,500 CFM - UT	Heat Pump Conversion - Tier 1 - 9.0 HSFP and 15 SEER - Downstream - UT	Heat Pump Conversion - Tier 2 - 9.5 HSFP and 16 SEER - Downstream - UT	HPWH - Tier 2 and above - Indoor Gas Heat - 0.55 Gallons - Self Install -	HPWH - Tier 2 and above - Basement- 0.55 Gallons - Self Install -	HPWH - Tier 3+ - 0.55 Gal - Self Install - UT	Whole House Ventilation Fan - UT
Sutherlands Lumber #2810	Salt Lake City	UT					✓						
Thompson's Comfort Connection	Midvale	UT			✓								
Triple T Inc.	Spanish Fork	UT		✓									

Table 5: 2019 Participating Weatherization Trade Allie

Retailers	City	State	Insulation - Attic - CAC Only - SF - UT	Insulation - Attic - Electric Cooling- UT	Insulation - Attic - Electric FAF with CAC - UT	Insulation - Attic - Electric FAF without CAC - UT	Insulation - Attic - Electric Heat Pump Heating System - UT
Accent Insulation	Ogden	UT		✓			
Apex Insulation, LLC - UT	North Logan	UT		✓			
Attic Pro Insulation	American Fork	UT		✓			
Barton Insulation	Vernal	UT		✓			
Best Property Improvements, Inc.	Holladay	UT		✓			
Bonded Insulation	Salt Lake City	UT		✓			
Brite Home Energy Solutions	St George	UT		✓		✓	
Building Services Group	Midvale	UT		✓			
Cornerstone Worx Inc.	Riverdale	UT		✓	✓		
Eco Insulation	St George	UT		✓			
EchoStar Insulation	Bountiful	UT		✓			
Elite Energy Solutions	Lindon	UT		✓	✓	✓	
Energy Pro	Hooper	UT		✓			
Green home Specialties	Layton	UT		✓	✓		
Greenify Energy Savers	Sandy	UT		✓		✓	
Hansen All Seasons	Lindon	UT		✓			
Hirsch Insulation	South Jordan	UT		✓			
Home Depot #4401	Riverdale	UT		✓			

Retailers	City	State	Insulation - Attic - CAC Only - SF - UT	Insulation - Attic - Electric Cooling- UT	Insulation - Attic - Electric FAF with CAC - UT	Insulation - Attic - Electric FAF without CAC - UT	Insulation - Attic - Electric Heat Pump Heating System - UT
Home Depot #4402	Salt Lake City	UT		✓			
Home Depot #4403	Salt Lake City	UT		✓			
Home Depot #4406	West Valley City	UT		✓			
Home Depot #4407	Lindon	UT					✓
Home Depot #4408	Centerville	UT		✓			
Home Depot #4410	West Jordan	UT		✓			
Home Depot #4411	Ogden	UT		✓			
Home Depot #4415	Park City	UT		✓			
Home Depot #4416	Provo	UT		✓			
Home Depot #4418	Cedar City	UT		✓			
Home Depot #4419	Tooele	UT		✓			
Home Depot #4421	Sandy	UT		✓			
Home Depot #8583	Layton	UT		✓			
Home Energy Experts LLC	Centerville	UT	✓	✓		✓	
Home Energy Solutions	Centerville	UT		✓			
Hone Insulation	Levan	UT		✓			
Insulation From Hale, LLC	North Salt Lake	UT		✓	✓		✓
J & K Insulation LLC	PLEASANT VIEW	UT		✓	✓		
Lowe's #1133	West Valley City	UT		✓			
Lowe's #1613	West Jordan	UT		✓			
Lowe's #178	Orem	UT		✓			
Lowe's #2293	Lehi	UT		✓			
Lowe's #2606	Sandy	UT		✓			
Lowe's #2845	Clinton	UT		✓			
Merlin's Insulation	Logan	UT		✓			
Mountain Fiber Insulation	Hyrum	UT		✓			
Nelson Insulation	Roy	UT		✓			
Penguin Insulation, LLC	Layton	UT		✓	✓		
Platinum Insulation & Construction	South Jordan	UT		✓			
Premier Building Supply	American Fork	UT		✓			✓
RLA & Sons, LLC	Draper	UT		✓			
Service Experts Heating & Air Conditioning	Ogden	UT		✓			
Service Experts of Salt Lake City	Midvale	UT		✓			
SLC Connections, LLC	South Salt Lake	UT		✓			

Retailers	City	State	Insulation - Attic - CAC Only - SF - UT	Insulation - Attic - Electric Cooling- UT	Insulation - Attic - Electric FAF with CAC - UT	Insulation - Attic - Electric FAF without CAC - UT	Insulation - Attic - Electric Heat Pump Heating System - UT
Streamline Energy Solutions	Santa Clara	UT		✓			
Sunroc Building Materials	Lindon	UT		✓			
Superior Home Improvement	South Salt Lake	UT		✓			
Superior Home Improvements	Salt Lake City	UT		✓			
Thermal Solutions LLC	Springville	UT		✓	✓		
United Subcontractors, Inc.	Salt Lake City	UT		✓			
USI Cardel's LLC	Logan	UT		✓	✓		
USI Cardel's LLC - North Salt Lake City	North Salt Lake City	UT		✓			
Walker Lumber	Delta	UT		✓			

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 5
Trade Ally Contractors

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: 85 record(s) found

About Us	Service Areas	Company Name	Contact Information	Specialty	Business Type	Projects Completed	Distance (miles)
Premium Vendor	Utah	**Green Planet Corporation/GPC Group** Address: 63 East 11400 South #257 Sandy, UT 84070 Website: http://www.greenplanetcorp.com	Phone: 801-214-0538 Name: Chris Parker Email: chris@greenplanetcorp.com	Controls – Lighting, Lighting, Other Specialty	Distributor, Manufacturer_Rep, Other	3	
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	36	

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	21
Premium Vendor Learn More: https://wattsmartbusiness.com/premiumvendors/codale-slc/	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	36
Premium Vendor	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, Controls – Lighting, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	Contractor	39
Premium Vendor	Utah	**DiVi Energy, LLC** Address: 4275 N Thanksgiving Way, Ste 111 Lehi, UT 84043 Website: http://divienergy.com	Phone: 801-361-7920 Name: Scott Thompson Email: scott@fixmyenergy.com	Lighting	Contractor, Manufacturer_Rep, Other	34
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	6

wattsmart® Business Vendor Network

	Utah	**UNVC** Address: 11350 E 18625 S #118 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, Mt. HVAC - evaporative, HVAC - unitary, Motors and VFDs	Engineering_Firm, Other	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	**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	**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	1
	Utah	**Platt Electric Supply - Salt Lake City** Address: 840 West 2600 South Salt Lake City, UT 84119 Website:	Phone: 801-952-5398 Name: Matt Peterson Email: Mathew.peterson@platt.com	Lighting, Lighting instant incentives	Distributor	2
	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	2
	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

wattsmart® Business Vendor Network

	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
	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	3
	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	3
	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	2
	Utah	**Saddleback Lighting** Address: 1425 W Red Ledge Road Ste 101 Washington, UT 84780 Website:	Phone: 435-656-1866 Name: Kimberly Peterson Email: Kimberly@saddlebacklighting.com	Lighting, Lighting instant incentives	Distributor	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

wattsmart® Business Vendor Network

	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, Motors and VFDs	Contractor	1
	Utah	**iLumens** Address: 2900 S. Main St. Salt Lake City, UT 84115 Website: http://www.ilumens.com/	Phone: Name: Bill Biddle Email: biddle@iLumens.com	Controls – Lighting, Lighting	Engineering_Firm	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	20
	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
	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: Ryan Harris Email: ryan@harrislightingproducts.com	Controls – Lighting, Lighting	Distributor, Manufacturer_Rep, Other	10
	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	4

wattsmart® Business Vendor Network

	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	2
	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, Motors and VFDs	Contractor	1
	Utah	**Whitehead Electric** Address: 247 31st Street Ogden, UT 84401 Website:	Phone: 801-394-1657 Name: Jim Strank Email: JIM@WHITEHEADELE.COM	Building envelope, Controls – Lighting, Lighting, Motors and VFDs	Distributor	2
	Idaho, Utah, Wyoming	**Electrical Company** Address: PO Box 4667 Logan, UT 84323 Website:	Phone: 435-787-2008 Name: Lisa Evans Email: lisa_ies@yahoo.com	Controls – Lighting, Lighting	Contractor	7
	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	1
	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	1
	Utah	**Gunthers** Address: 81 S 700 E American Fork, UT 84003 Website: http://www.gunthers.com	Phone: 801-756-9683 Name: Nathan Silvey Email: nsilvey@gunthers.com	HVAC - unitary, HVAC check-up, Motors and VFDs	Contractor, Engineering_Firm	1

wattsmart® Business Vendor Network

	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	**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	**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@bastionled.com	Lighting	Distributor, Engineering_Firm, Manufacturer_Rep	2
	Utah	**ESP+** Address: 9580 S 500 W Sandy, UT 84070 Website:	Phone: 801-566-0600 Name: Joe Ferguson Email: joef@espplus.net	Lighting	Distributor	19
	Idaho, Utah, Wyoming	**OEO Energy Solutions** Address: 143 East Main Street Lake Zurich, IL 60047 Website: www.oeo.com	Phone: 847-847-3989 Name: Greg Amick Email: greg@oeo.com	Controls – Lighting, Lighting	Distributor	1
	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
	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

wattsmart® Business Vendor Network

	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
	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
	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	**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	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
	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, Motors and VFDs, Other Specialty	Contractor, Distributor, Manufacturer_Rep, Other	1

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Utah	**Advanced Energy Lighting Technology** Address: 146 N. Old Highway 91 Suite 4 Hurricane,, UT 84737 Website: http://www.brightlight g uys.com/	Phone: 877-254-2358 Name: Rick Christensen Email: brightlightguys@gmail.com	Lighting, Lighting instant incentives	Distributor	1
	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	7
	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
	Utah, Wyoming	**All American LED** Address: 3234 E 4650 N Liberty, UT 84310 Website: http://www.All-AmericanLED.com	Phone: 801-920-7276 Name: Brett Layser Email: B.Layser@All-AmericanLED.com	Lighting	Distributor	1
	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: fpedraza@green-reactions.com	Controls – Lighting, Lighting, Lighting instant incentives, Other Specialty	Distributor	3
	Idaho, Utah	**Bright Star Property Services** Address: 214 S Cole Rd Boise, ID 83709 Website: http://www.brightstarps.com/	Phone: 208-922-6460 Name: Jennifer Jennifer Gamble Email: JenniferS@BrightStarPS.com	Lighting	Other	

wattsmart® Business Vendor Network

	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: mark@brilliantlightingcenter.com	Lighting, Lighting instant incentives	Distributor	2
	Utah, Wyoming	**Yesco** Address: 1605 S. Gramercy Rd. Salt Lake City, UT 84104 Website: http://www.yesco.com	Phone: 801-487-8481 Name: Crissy Long Email: clong@yesco.com	Lighting, Other Specialty	Contractor, Manufacturer_Rep	5
	Utah	**Central Electric Supply** Address: 190 North 100 West Richfield, UT 84701 Website: http://www.centralelectricsupply.com	Phone: 435-896-8486 Name: Keith Waters Email: keith@centralelectricsupply.com	Lighting, Lighting instant incentives	Distributor	1
	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	15
	Idaho, Utah, Wyoming	**Engie Services U.S. Inc** Address: 136 Longwater Drive, Suite 103 Norwell, MA 02061 Website: http://www.engieservices.us	Phone: 415-632-6162 Name: Casey Erisman Email: casey.erisman@engie.com	Controls – Lighting, HVAC - unitary, Lighting, Motors and VFDs	Contractor, Engineering_Firm	11
	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

wattsmart® Business Vendor Network

ROCKY MOUNTAIN POWER

	Utah	**Relumination LLC** Address: 2821 S 35th St. Ste 5/6 Phoenix, AZ 85034 Website: http://www.reluminatio n.com	Phone: 480-478-0703 Name: Daniel Henderson Email: dan@relumination.com	Controls – Lighting, Lighting	Contractor	2
	Utah	**Thomson Electric Sales** Address: PO BOX 3790 Logan, UT 84323 Website: http://thomsonelectrics upply.com	Phone: 435-752-2252 Name: Brent Lundstrom Email: brent@thomsonelectric supply.com	Controls – Lighting, Lighting	Distributor	2
	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
	Utah, Wyoming	**Codale Electric Supply, Inc - Cedar City** Address: 477 North 100 West Cedar City, UT 84720 Website: http://www.codale.com	Phone: 435-586-7681 Name: Cody Ille Email: codyi@codale.com	HVAC - unitary, Lighting, Lighting instant incentives, Motors and VFDs	Distributor	3
	Idaho, Utah, Wyoming	**Comfort Solutions** Address: 1470 Wall Ave Ogden, UT 84404 Website: http://www.comfortsolu tionsutah.com	Phone: 801-393-2206 Name: Adam Yearsley Email: adam@comfortsolution sutah.com	HVAC - unitary, HVAC instant incentives	Contractor	1
	Utah	**Transformative Wave** Address: 1000 Central Avenue South Kent, WA 98032 Website: http://www.transformati vewave.com	Phone: 253-867-2333 Name: Joe Schmutzler Email: joe.s@twavetech.com	Controls – HVAC, HVAC - unitary, Motors and VFDs	Other	1
	Utah	**Utah LED** Address: 2350 E Arbor Ln 17204 Holladay, UT 84117 Website: https://www.utahled.co m	Phone: 801-694-8509 Name: Matt Frazier Email: sales@utahled.com	Lighting	Other	4

wattsmart® Business Vendor Network

	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	**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	7
	Utah	**Holbrook Service** Address: 1580 S. Pioneer Rd. Salt Lake City, UT 84104 Website: http://www.holbrookservice.com	Phone: 801-359-3769 Name: Mike Hansen Email: mhansen@holbrookservice.com	Controls – HVAC, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	Contractor	6
	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	**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	9
	Utah	**Royal Wholesale Electric - Ogden** Address: 1406 W 3300 S Ogden, UT 84401 Website:	Phone: 801-471-2417 Name: Adam Lattin Email: adam@royalogden.com	Lighting, Lighting instant incentives	Distributor	3

wattsmart® Business Vendor Network

	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
	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	2
	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	**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	4
	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	2
	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

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	**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	16
	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
	Utah	**Grainger** Address: 2775 S 900 W Salt Lake City, UT 84119 Website: https://www.grainger.com/	Phone: 385-260-1954 Name: Ryan Buttars Email: ryan.buttars@grainger.com	Lighting	Distributor	1
	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	6
	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	4

wattsmart® Business Vendor Network

	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	3

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 6
Utah Program Evaluation Recommendations and Responses

Utah 2019 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 2019 and the third party evaluator who completed the evaluation. Program evaluations are available for review at https://www.pacificorp.com/environment/demand-side-management.html

Program Evaluations

Program	Years Evaluated	Evaluator	Progress Status	Date of Publication
wattsmart Homes	2017 - 2018	ADM	Completed	October 25, 2019

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

Table1 – wattsmart Homes Evaluation Recommendations

wattsmart Homes Evaluation Recommendations	Rocky Mountain Power Action Plan
Next evaluation cycle of the Lighting Measure Category include a full life-cycle review of contracts	No objections to this evaluation approach
Include only one showerhead in the Energy Kits to increase the overall ISR	Kits are going out to RFP in 2020. No plans to continue with more than one showerhead
Gather more data on evaporative cooler baseline conditions.	No action will be taken. The existing baseline will continue to be used for evaporative coolers
Evaluator to use an engineering desk review in addition to deemed savings for heat pumps to establish baseline conditions.	No action will be taken. The existing savings calculations and data collection will be used for heat pumps pre and post installation
Program implementer to collect more detailed compliance documentation (e.g. COMcheck reports, approved building plans).	Program implementer will begin collecting more documentation
Next evaluation cycle to include increase rigor on the multi-family measure, including case studies and in-depth interviews with building managers and/or decision makers at both market rate and low income multi-family projects.	No objections to this evaluation approach
Focus on two points of contact for builders (e.g. producing and purchasing)	Will attempt to gather additional contact information

Appendix 7
Utah DSM Outreach and Communications Year 10 Report

January – December 2019

TABLE OF CONTENTS

Year 10 Report – January through December 2019…….. pp. 3-11

Exhibits

Exhibit A	2019 Energy Efficiency Residential and Business Research Questionnaires
Exhibit B	National Energy Foundation Be Wattsmart 2019 Report
Exhibit C	Creative and News Stories

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 10 (calendar year 2019) of the DSM outreach and communications campaign, including an evaluation of the program in meeting its objectives and a summary of year 10 program activities.

Customer Survey Results

The Company has conducted customer research each year from 2010 to 2019 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 1,003 residential online surveys in September 2019 and 382 business online surveys in July 2019. The studies were conducted using online survey methodology. This was the first year of the business study, and the results will serve as a benchmark to compare against in 2020.

The overall objective of this research was to measure awareness and affinity for Rocky Mountain Power's energy conservation programs, particularly "being Wattsmart." 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 Wattsmart and Rocky Mountain Power; and discerning actions residential customers are taking to be Wattsmart.

Escalent (formerly MSI) National Benchmarking Study contains high-level findings regarding energy efficiency in which Rocky Mountain Power received a score of 82% 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 72% among business customers for "Providing information on how to control electricity costs."

Key Research Findings – Residential customers

Eighty-one 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 2018 year-end findings (80%).

Advertising and communications recall
Three quarters of Rocky Mountain Power customers recall "being Wattsmart". Of those familiar with "being Wattsmart," 75% attribute the phrase to Rocky Mountain Power.

Actions taken to conserve electricity

Two-thirds (69%) of residential customers have taken some actions to conserve energy, up slightly from 2018 (67%). Actions around lighting are the most common with "Using energy-saving light bulbs" as the leading action at 53% and "Turning off lights when leaving a room" at 12%. Actions around heating/cooling are also top actions cited, with "lowered use of/turned off air conditioning/use other cooling means" at 9% and "install an energy-efficient air conditioner or furnace" at 7%.

Reason for taking action

The main reasons for taking action to reduce energy use (among those who have taken action) is to save money (71%) and to save energy (17%). The third reason for taking action is to help protect the environment (16%).

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 emails and website are the most common ways respondents learn about the Company. *(MDC Research)*

Television email, social networking and the internet are the top sources for information on news and current events. *(MDC Research)*

Key Research Findings – Commercial customers

Findings for 2019 regarding energy efficiency among commercial customers show the following:

- In 2019, nine in ten Rocky Mountain Power business customers believe that it's "very" or "somewhat important for utility companies to help customers conserve energy through program offerings (*MDC 2019 Business Research*).

- Additionally, three quarters (77%) of business customers are familiar with "being Wattsmart". Of those familiar with "being Wattsmart," 77% attribute the phrase to Rocky Moutnain Power. (*MDC 2019 Business Research*).

- In 2019, seven in ten (75%) Rocky Mountain Power commercial customers are aware of the Company "offering solutions to help them use energy more efficiently." Findings are up slightly from 2018 (73%) (*Escalent Commercial Study Wave 2 2019*).

- In addition, seven-in-ten (75%) Rocky Mountain Power customers believe their utility is doing a good job of "providing information on how to control electricity costs" compared to 73% in 2018 (*Escalent Commercial Study Wave 2 2019*).

- 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 number has remained steady at 81% since 2018, and represents a slight drop compared to 83% in 2017.

Conclusions

The awareness level for being Wattsmart 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, save energy and help protect the environment.

To leverage this finding, the Company continued to advertise and promote "being Wattsmart" as an expression of Rocky Mountain Power's "Powering Your Greatness" brand essence to empower customers and 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

Wattsmart 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 May 27 through August 19, 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 2019, Rocky Mountain Power continued to tie the Wattsmart concept to messages about others who are being Wattsmart 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.

Social Media:

- Twitter feed promotes energy efficiency tips and Wattsmart programs each week.
- Facebook posts Wattsmart messages three to four times per month.

Newsletters

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

Wattsmart 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/OTT 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 and OTT (over-the-top) are the most effective media channels.	February – October 2019 Impressions: Business: 6,395,000 Residential: 5,424,400 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 – September 2019 Impressions: Business: 10,440,500 Residential: 3,956,400
Magazine	Extends reach to business customers statewide	January – December 2019: 408,000 impressions

Communication Channel	Value to Communication Portfolio	Placement
Paid Social Media	Promoted posts on social support broadcast and digital media to increase overall awareness	January – October 2019: Business impressions: 1,774,003 delivered 4,437 clicks and a .25% CTR Residential impressions: 3,914,737 delivered 7,678 clicks and a .17 CTRerage.
Facebook	Organic posts provide awareness regarding energy efficiency tips and creates a centralized location to share information on how to be Wattsmart; feature incentive programs and other seasonal information. Information posted three times a week.	As of December 2019 there were 26,391 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 2019, there were 8,176 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, Bidtellect, on KSL, and KSTU,	Display advertising delivered Business impressions 8.2M with 16,568 clicks and a .21 CTR Residential impressions: 12.2M with 20,331 clicks and a .16 CTR
Search	Search engine advertising to help customers find information they saw in the advertising.	Search delivered Residential impressions 13,325 with 539 clicks and a 4.05% CTR

The total number of 2019 impressions for the Wattsmart campaign was 52,725,965.

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 Wattsmart, 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 2019, over 16,129 Utah students participated in the curriculum, which includes 175 schools taught by 623 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 $25 - $50 mini-grants for their classrooms depending on how many students completed their worksheet. A summary of NEF's 2019 activities and accomplishments is provided in Exhibit B.

Social media Coverage for educating the next generation of energy savers
Rocky Mountain Power uses social media to connect with the next generation of energy savers. Videos created for the school presentations are available on Rocky Mountain Power's YouTube channel and emphasize the importance of 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, using a fan instead of air conditioning to stay cool, and the impacts of weatherization.

Wattsmart Business Advocacy

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

The Company partnered with the Salt Lake Chamber to provide energy efficiency and Wattsmart Business content for twice-monthly Utah Business Report radio segments presented weekdays on KSL. Content was created for social media posts about Wattsmart 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 Wattsmart 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 Wattsmart 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, summer 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 19,779 clicks to the website.

Evaporative cooler discounts
In the summer, the company promoted evaporative cooler instant discounts to customers in Southern Utah via a direct mail postcard and emails.

Home shows
Wattsmart *Homes* program staff attended the Salt Lake Tribune's Home and Garden Festival March 8-10, 2019 at the Mountain America Expo Center in Sandy, Utah. To help drive festival attendance, social media posts and website promotions were used to increase awareness of the show. Total attendance at the spring show was approximately 41,950. More than 560 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 11-13, 2019 to help educate customers on energy efficiency, Wattsmart program incentives and other customer solutions. The company sent an email to customers to encourage attendance Customers who visited the booth could enter to win a ductless heat pump or a whole-house fan.

Website enhancements
The program team also launched a new and improved customer web portal, Wattsmarthomes.com, in the fall. The new site offers improved content, functionality and navigation, along with an easy and seamless transition between Rocky Mountain Power's main website, rockymountainpower.net, and Wattsmarthomes.com.

Home Energy Reports

Thousands of print and email Home Energy Reports were delivered to Utah customers in 2019.

With Rocky Mountain Power's new and improved website launch in July, the company added an additional promotion for customers to easily access their usage data by appliance categories and energy-saving recommendations on the Bidgely platform.

Customer satisfaction and engagement with the Bidgely program demonstrated early and consistently positive results. Email open rates averaged 38 percent – nearly double the utility industry norm. Email recipients also gave the email communications they received 80 percent "likes" via thumbs up and thumbs down voting buttons included with every message.

Cool Keeper

The company uses a variety of direct outreach to keep *Cool Keeper* participants informed and encourage new customers to take part. In 2019, outreach included:

- Emails to customers who have moved into homes with existing Cool Keeper devices.
- Letters to apartment tenants.
- A series of different emails to non-participants to encourage participation
- A communication with the utility bill to encourage participation.
- Facebook and Instagram ads.
- Direct mail postcards.
- An email to existing participants to communicate program changes and prepare for the summer season.
- An email to customers at the end of the summer season with a link to an online survey.

Wattsmart Business

During 2019, Wattsmart 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 1,992 Utah irrigation customers in the spring and fall to encourage energy-saving retrofits. Emails to promote lighting upgrades were sent to customers at the beginning of the year, emails to promote HVAC automated rooftop controls were sent in June, and an email asking customers to take a free assessment and promoting lighting upgrades were sent in December.

During 2019, the program garnered 26,854,547 impressions. A breakdown of impressions by media type is shown in Table 3 below.

Table 3 – Wattsmart Business Impressions by Media Type

Communications Channel	Impressions
Radio	17,254,300
Newspaper	1,599,325
Magazine	208,000
Digital display	5,857,272
Social	1,883,994
Search	13,744
Eblast	33,942
Irrigation direct mail	3,970

Outreach Campaign Budget Results

The 2019 budget for outreach activities was $1,500,000 as presented in Table 4 below. Expense activities are summarized by the channel of communication.

Table 4 – 2019 Budget, Actuals, and Variance

	Budget	Actuals	Variance
TV	$ 330,000	$ 320,627	$ (9,373)
Radio	$ 120,000	$ 111,085	$ (8,915)
Print	$ 170,000	$ 161,069	$ (8,931)
Digital/Social	$ 150,000	$ 138,223	$ (11,777)
Creative/Production/Planning	$ 300,000	$ 156,243	$ (143,757)
General PR	$ 75,000	$ 14,586	$ (60,414)
Wattsmart Events and Sponsorships	$ 100,000	$ 61,462	$ (38,538)
Be Wattsmart, Begin at Home School Education Program (NEF)	$ 225,000	$ 210,766	$ (14,234)
Research	$ 30,000	$ 23,085	$ (6,915)
Total	**$ 1,500,000**	**$ 1,197,146**	**$ (302,854)**

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Exhibit A

Energy Efficiency Questionnaires

Rocky Mountain Power

2019 Energy Efficiency Web Questionnaire

Date:	May 9, 2019
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 Reduce heating thermostat setting
Increase cooling thermostat setting
Install smart 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 ONLY
11 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

2019 Energy Efficiency Web Questionnaire

Date:	May 6, 2019
Universe:	General business, Rocky Mountain Power service areas Utah, Idaho and Wyoming
Sample size:	1000 Rocky Mountain Power commercial customers
Screener:	Most likely to contact utility company
Objective:	Measure business customer 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 company who is likely to make decisions about your business or organization participating in services offered by Rocky Mountain Power?

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

Q3 Info about company/organization –

Single location or multiple locations

Number of Employees

Less than 10

10-20

More than 20

Job Title

Owner/Co-owner

Manager

Office Manager

Admin/Secretary/Receptionist

President

Director

Other

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
Columbia REA (Washington)
Cascade Natural Gas (Washington)
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
24 Intermountain Healthcare endorsement
25 Small Business Lighting– Red Iguana, SparkleZone, TrimLight
Yakima Bindery endorsement
Apple King endorsement
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 On a scale of 1-10 with 10 being the highest, (to measure awareness)

- Does Rocky Mountain Power offer solutions to help customers use energy more efficiently?
- Does Rocky Mountain Power provide information on how to control energy costs?
- Does Rocky Mountain Power help your company/organization by providing incentives to save money on energy bills?
- Does Rocky Mountain Power provide information about products and services that are of value to you and your organization?

In the past year, have you taken any actions or changed anything in your business/organization 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 business in order to save energy?

99 RECORD:_____

DO NOT DISPLAY; FOR CODING USE ONLY
11 Reduce heating thermostat setting
12 Increase cooling thermostat setting
13 Generally conserve or use less energy
14 Install an energy-efficient air conditioner or furnace
15 Install energy-efficient lighting such as LEDs
16 Install energy-efficient doors or windows
17 Added insulation
18 Installed a ceiling fan
19 Use computers or TV less often
20 Turn off lights more frequently
99 Other:_____
97 Don't know

Q11 What are the main reasons you took steps to conserve energy in your business/organization?

99 RECORD:_____

DO NOT DISPLAY; FOR CODING USE ONLY
11 To protect/help the environment
12 To reduce need for new energy infrastructure
13 To save money
14 Heard ads encouraging energy conservation
15 To make my business more comfortable

16 Needed to replace old or broken equipment
17 To take advantage of a rebate or tax credit
18 It's the right thing to do
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 your business/organization 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)
[Cascade Natural Gas - Washington]
Columbia REA (Washington)
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 [Cascade Natural Gas - Washington]
4 Columbia REA (Washington)
5 Home improvement retailer
6 State Department of Energy
7 Federal government
8 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 average monthly Rocky Mountain Power bill?

Average monthly bill

$0-199
$200<$250
$250<$500
$500<$1000
$1,000<$2,500
$2,500<$5,000
$5000+
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

2019

NEF

BE *WATTS*MART, BEGIN AT HOME

UTAH

Program Report

Prepared for:

wattsmart.com

Michael S. Snow, Manager, Regulatory Affairs

Rocky Mountain Power

1407 W Nor th Temple

Suite 330

Salt Lake City, UT. 84116

Prepared by:

Patti Clark, Program Director

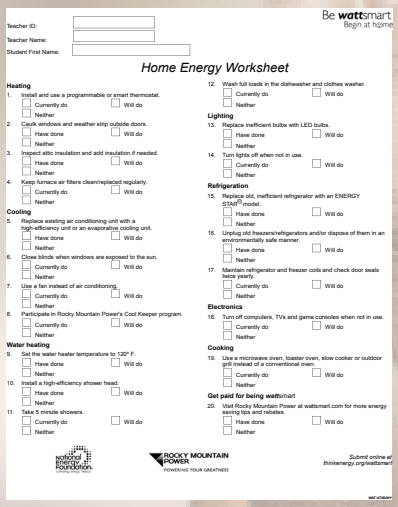
National Energy Foundation

4516 South 700 East, Suite 100

Salt Lake City, UT 84107

February 28, 2020

Savings



Be wattsmart
Begin at home

Teacher ID:
Teacher Name:
Student First Name:

Home Energy Worksheet

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 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

NORTHWEST ENERGY EFFICIENCY ALLIANCE

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

Submit online at thinkenergy.org/wattsmart

Home Energy Worksheets

– Returned: 10,087 –

– 63% –

Teacher Packets

– Returned: 457 –

– 74% –

Participants

Students
– 16,129 –

Teachers
– 623 –

Schools
– 175 –

Table of Contents

Program Overview 1

Program Description 1
Program Administration 1
Building Collaborations 1
Program Implementation 1
Program Registration 1
Be *watt*smart, Begin at home Presentation 2
Program Materials 2
Program Accomplishments – Fall 2019 2
Program Improvements - Fall 2019 2

Attachments 5

Fall 2019 Participating Schools 5
Program Promotions 9
Program Documents 11
Program Evaluation Compilation 57
Home Energy Worksheet (English) 62
Home Energy Worksheet (Spanish) 63
Home Energy Worksheet Summary – Rocky Mountain Power 64
Wise Energy Behaviors in Rocky Mountain Power Utah Homes 67
Sampling of *Thanks a "WATT"* Cards 68

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 2019 to include an additional thirty seven Utah schools within the Rocky Mountain Power territory. This increased the total number of schools in Utah to 175 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 2019 - 2020 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, Sarah Richards and Diane Baum were responsible for scheduling the presentations. A team of trained and seasoned presenters brought the interactive, hands-on program to Utah schools from September 23 through November 6, 2019.

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 2019 an invitation to register for the fall 2019 program was sent via email to all teachers that had participated in the 2018 program. In August and September, program coordinators 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*. Registered schools were checked against the qualified school list before email and phone communications were made with teachers to determine optimum presentation dates and student numbers. With authorization from Rocky Mountain Power, three new schools were added to the qualified schools list.

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 2019. 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. The videos are always 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 efficiency 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 *Bright Ways to Save*.

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 1, 2019 deadline.

Program Accomplishments – Fall 2019

- 182 Be *watt*smart, Begin at home presentations
- 16,129 students and families reached
- 623 Utah teachers reached
- 63% student *Home Energy Worksheet* surveys return
- $50 gift cards delivered to 387 Utah teachers
- $25 gift cards delivered to 49 Utah teachers

Program Improvements - Fall 2019

- Updated all program materials and added a *Parent Letter* in Spanish
- New video vignettes entitled "Caitlin Power" produced by sponsor for presentation
- Added thirty seven additional schools to the program
- Added online *Home Energy Worksheet* option to program

- Created a program website for teachers and students *thinkenergy.org/wattsmart/*

Program Attachments – Fall 2019

- Fall 2019 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 2019 Participating Schools

Participating Schools	Address	City	State	Zip
Academy Park Elementary	4580 Westpoint Drive	West Valley City	UT	84120
Alpine Elementary	400 East 300 North	Alpine	UT	84004
Arcadia Elementary	3461 West 4850 South	Taylorsville	UT	84129
Armstrong Elementary	5194 Highbury Parkway	West Valley	UT	84120
Backman Elementary	601 North 1500 West	Salt Lake City	UT	84116
Bastian Elementary	5692 W. American Park Drive	Herriman	UT	84096
Bates Elementary	850 East 3100 North	North Ogden	UT	84414
Beacon Heights	1850 South 2500 East	Salt Lake City	UT	84108
Birch Creek Elementary	675 West 220 North	Smithfield	UT	84335
Blackridge Elementary	14131 S. Rosecrest Road	Herriman	UT	84096
Bluffdale Elementary	14323 South 2700 West	Bluffdale	UT	84065
Buffalo Point Elementary	1924 S. Doral Drive	Syracuse	UT	84075
Burch Creek Elementary	4300 Madison Ave	South Ogden	UT	84403
Butterfield Canyon Elementary	6860 W. Mary Leizan Lane	Herriman	UT	84096
Canyon Creek Elementary	755 South 1100 West	Farmington	UT	84025
Cedar Ridge Elementary	4501 West Cedar Hills Drive	Cedar Hills	UT	84062
Cedar South Elementary	499 West 500 South	Cedar City	UT	84720
Centerville Elementary	350 North 100 East	Centerville	UT	84014
Century Elementary	5820 North 4800 West	Bear River City	UT	84301
Channing Hall	13515 South 150 East	Draper	UT	84020
Clinton Elementary	1101 West 1800 North	Clinton	UT	84015
Columbia Elementary	3508 West 7800 South	West Jordan	UT	84088
Cook Elementary	1175 West 1350 South	Syracuse	UT	84075
Copper Canyon Elementary	1600 N. Broadway	Tooele	UT	84074
Copper Canyon Elementary	8917 Copperwood Drive	West Jordan	UT	84081
Copper Hills Elementary	7635 West 3715 South	Magna	UT	84044
Cottonwood Elementary	5205 South Holladay Blvd.	Holladay	UT	84117
Country View Elementary	4650 West 4800 South	West Haven	UT	84401
Crestview Elementary	185 W. Golden Ave	Layton	UT	84041
Crestview Elementary	2100 Lincoln Lane	Holladay City	UT	84124
David Gourley Elementary	4905 South 4300 West	Kearns	UT	84118
Deerfield Elementary	4353 W. Harvey Blvd	Cedar Hills	UT	84062
Diamond Ridge Elementary	6034 W. Mill Valley Lane	West Valley City	UT	84118
Douglas T. Orchard Elementary	6744 West 3800 South	West Valley City	UT	84128
Eagle Bay Elementary	1933 Clark Lane	Farmington	UT	84025
East Elementary	225 East 70 South	Cedar City	UT	84720
East Layton Elementary	2470 E. Cherry Lane	Layton	UT	84040
Eastlake Elementary	4389 W. Isla Daybreak Rd	South Jordan	UT	84009
Eastwood Elementary	3305 South Wasatch Blvd.	Salt Lake City	UT	84109
Elk Meadows Elementary	3448 West 9800 South	South Jordan	UT	84095
Elk Run Elementary	3550 S. Helen Dr	Magna	UT	84044
Ellison Park Elementary	800 N. Cold Creek Way	Layton	UT	84041
Emerson Elementary	1017 Harrison Ave	Salt Lake City	UT	84105
Enoch Elementary	4701 Wagon Wheel	Enoch	UT	84721
Ensign Elementary	775 12th Avenue	Salt Lake City	UT	84103
Falcon Ridge Elementary	6111 West 7000 South	West Jordan	UT	84081
Farnsworth Elementary	3751 Sunnyvale Dr.	West Valley City	UT	84120
Farr West Elementary	2190 West 2700 North	Farr West	UT	84404
Fielding Elementary School	50 W. Main Street	Fielding	UT	84311
Fox Hills Elementary	3775 West 6020 South	Taylorsville	UT	84129
Fox Hollow Elementary	6020 West 8200 South	West Jordan	UT	84081
Foxboro Elementary	587 North Foxboro Drive	North Salt Lake City	UT	84054
Freedom Elementary	10326 North 6800 West	Highland	UT	84003
Freedom Elementary	4555 West 5500 South	Hooper	UT	84315
Gateway Preparatory Academy	201 Thoroughbred Way	Enoch	UT	84721

Participating Schools	Address	City	State	Zip
Geneva Elementary	665 West 400 North	Orem	UT	84057
Gerald Wright Elementary	6760 West 3100 South	West Valley City	UT	84128
Goshen Elementary	60 N. Center	Goshen	UT	84633
Grantsville Elementary	50 South Park Street	Grantsville	UT	84029
Green Acres Elementary	640 East 1900 North	North Ogden	UT	84414
Gunnison Elementary	550 South 300 East	Gunnison	UT	84634
Hawthorne Elementary	1675 South 600 East	Salt Lake City	UT	84105
Hayden Peak Elementary	5120 West Hayden Peak Drive	West Jordan	UT	84081
Heartland Elementary	1451 West 7000 South	West Jordan	UT	84084-3430
Heritage Elementary School	925 West 3200 South	Nibley	UT	84321
Heritage Elementary - Layton	1354 W. Weaver Lane	Layton	UT	84041
Herriman Elementary School	13671 S. Pioneer Street	Herriman	UT	84096
Highland Park Elementary	1728 East 2700 South	Salt Lake City	UT	84106
Hill Field Elementary	389 South 1000 East	Clearfield	UT	84015
Hillsdale Elementary	3275 West 3100 South	West Valley City	UT	84119
Hillside Elementary	4283 South 6000 West	West Valley	UT	84128
Hobble Creek Elementary	1145 East 1200 North	MApleton	UT	84664
Jeremy Ranch Elementary	3050 Rasmussen Road	Park City	UT	84098
Jim Bridger Elementary	5368 W Cyclamen Way	West Jordan	UT	84081
John C. Fremont Elementary	4249 Atherton Drive	Taylorsville	UT	84123
Jordan Ridge Elementary	2636 West 9800 South	South Jordan	UT	84095
Legacy Elementary	28 East 1340 North	American Fork	UT	84003
Liberty Elementary	1085 Roberta Street	Salt Lake City	UT	84111
Lincoln Elementary	450 East 3700 South	Salt Lake City	UT	84115
Lincoln Academy	1582 West 3300 North	Pleasant Grove	UT	84062
Lincoln Elementary	1235 N. Canfield Drive	Ogden	UT	84404
Lindon Elementary	30 N Main	Lindon	UT	84042
Lomond View Elementary	3644 North 900 West	Pleasant View	UT	84414
Magna Elementary	3100 South 8500 West	Magna	UT	84044
Majestic Elementary	425 West 2550 South	Harrisville	UT	84414
Mapleton Elementary	120 West Maple Street	Mapleton	UT	84664
Mary W. Jackson Elementary	750 West 200 North	Salt Lake City	UT	84116
McPolin Elementary	2270 Kearns Blvd	Park City	UT	84060
Meadowlark Elementary	497 N. Morton Drive	Salt Lake City	UT	84116
Midas Creek Elementary	11901 S. Park Haven Lane	Riverton	UT	84096
Midland Elementary	3100 West 4800 South	Roy	UT	84067
Mona Elementary	260 East 200 South	Mona	UT	84645
Monroe Elementary	4450 West 3100 South	West Valley City	UT	84120
Monte Vista Elementary	11121 South 2700 West	South Jordan	UT	84095
Morningside Elementary	4170 South 3000 East	Salt Lake City	UT	84124
Mount Mahogany	618 North 1300 West	Pleasant Grove	UT	84062
Mountain Point Elementary	15345 S. 1200 West	Bluffdale	UT	84065
Mountain Shadows Elementary	5255 West 7000 South	West Jordan	UT	84081
Mountain View Elementary	1380 Navajo Street	Salt Lake City	UT	84104
Mountainville Academy	195 South Main Street	Alpine	UT	84004
New Bridge Elementary	2150 Jefferson Ave	Ogden	UT	84401
Newman Elementary	1269 N Colorado Street	Salt Lake City	UT	84116
Nibley Park School	2745 South 800 East	Salt Lake City	UT	84106
North Elementary School	550 West 200 North	CEDAR CITY	UT	84720
North Park Elementary	4046 South 2175 West	Roy	UT	84067
North Park Elementary - Tremonton	50 East 700 North	Tremonton	UT	84337
Oak Hollow Elementary	884 East 14400 South	Draper	UT	84020
Oakcrest Elementary	8462 S. Hilltop Drive	West Jordan	UT	84081
Oakwood Elementary	5815 Highland Drive	Holladay	UT	84121
Odyssey Elementary	2050 South 1955 West	Woods Cross	UT	84087

Participating Schools	Address	City	State	Zip
Orchard Hills Elementary	168 East 610 South	Santaquin	UT	84655
Orchard Springs Elementary	3300 North 975 West	Pleasant View	UT	84414
Orem Elementary	450 West 400 South	Orem	UT	84058
Overlake Elementary	2052 North 170 West	Tooele	UT	84074
Panguitch Elementary	110 South 100 West	Panguitch	UT	84759
Parkside Elementary	2262 North1500 West	Clinton	UT	84015
Pioneer Elementary	250 North 1600 West	Ogden	UT	84404
Plymouth Elementary	5220 South 1470 West	Salt Lake City	UT	84123
Providence Hall Elementary	4795 W. Patriot Ridge Drive	Herriman	UT	84096
Quest Academy	4862 West 4000 South	West Haven	UT	84401
Redwood Elementary	2650 S. Redwood Rd	West Valley	UT	84119
River Heights Elementary	780 East 600 South	River Heights	UT	84321
Riverside Elementary	8737 South 1220 West	West Jordan	UT	84088
Robert Frost Elementary	3444 West 4400 South	West Valley	UT	84119
Rolling Meadows Elementary	2950 West Whitehall Drive	West Valley City	UT	84119
Roosevelt Elementary	3225 South 800 East	Salt Lake City	UT	84106
Rose Creek Elementary	12812 3600 West	Riverton	UT	84065
Rose Park Elementary	1105 West 1000 North	Salt Lake City	UT	84116
Rose Springs Elementary	5349 N. Innsbrook Place	Stansbury Park	UT	84074
Rosecrest Elementary	2420 Fisher Lane	Salt Lake City	UT	84109
Roy Elementary	2888 West 5600 South	Roy	UT	84067
Sand Springs Elementary	242 North 3200 West	Layton	UT	84075
Santaquin Elementary	25 South 400 West	Santaquin	UT	84655
Sharon Elementary	400 East 575 North	Orem	UT	84098
Silver Crest Elementary	12937 S. Elementary Drive	Herriman	UT	84096
Silver Hills Elementary	5770 West 5100 South	Salt Lake City	UT	84118
Silver Ridge Elementary	3340 North 3050 West	Pleasant View	UT	84404
South Clearfield Elementary	990 East 700 South	Clearfield	UT	84015
South Jordan Elementary	11205 S. Black Cherry Way	S. Jordan	UT	84095
South Weber Elementary	1285 E. Lester Street	South Weber	UT	84405
Stansbury Elementary	3050 South 2700 West	West Valley City	UT	84119
Summit Academy - Draper	1225 East 13200 South	Draper	UT	84020
Summit Academy Bluffdale	1940 West 14400 South	Bluffdale	UT	84065
Summit Academy Independence	15327 South Noell Nelson	Bluffdale	UT	84065
Summit Elementary	80 West Center Street	Smithfield	UT	84335
Sunset Elementary	2014 North 250 West	Sunset	UT	84015
Taylor Canyon Elementary	2130 Taylor Avenue	Ogden	UT	84401
Terra Linda Elementary	3400 S. Old Bingham Highway	West Jordan	UT	84088
Three Mile Creek Elementary	2625 South 1050 West	Perry	UT	84302
Three Peaks Elementary	1685 West Midvalley Rd	Enoch	UT	84721
Thunder Ridge Elementary	264 North 750 West	Saratoga Springs	UT	84045
Timpanogos Academy	70 South 100 East	Lindon	UT	84042
Trailside Elementary	5700 Trailside Drive	Parkcity	UT	84098
Twin Peaks Elementary	5325 South 1045 East	Salt Lake City	UT	84117
Uintah Elementary	1571 East 1300 South	Salt Lake City	UT	84105
Upland Terrace Elementary	3700 South 2860 East	Salt Lake City	UT	84109
Vae View Elementary	1750 West 1600 North	Layton	UT	84041
Valley Crest Elementary	5240 West 3100 South	West Valley City	UT	84120
Valley View Elementary	2465 West 4500 South	Roy	UT	84067
Vineyard Elementary	620 E. Holdaway Rd	Vineyard	UT	84058
Voyage Academy	1891 North 1500 West	Clinton	UT	84015
Wasatch Elementary	30 R Street	Salt Lake City	UT	84103
Washington Elementary	420 North 200 West	Salt Lake City	UT	84103
Wellsville Elementary	525 North 200 West	Wellsville	UT	84339
West Bountiful Elementary	750 West 400 North	West Bountiful	UT	84087

Participating Schools	Address	City	State	Zip
West Haven Elementary	4385 South 3900 West	West Haven	UT	84401-9817
West Jordan Elementary	7220 South 2370 West	West Jordan	UT	84084
West Point Elementary	3788 West 300 North	West Point	UT	84015
West Valley Stem	6049 West Brud Drive	West Valley City	UT	84128
Westbrook Elementary	3451 West 6200 South	Taylorsville	UT	84129
Western Hills Elementary	5190 Heath Ave.	Kearns	UT	84118
Westland Elementary	2925 West 7180 South	West Jordan	UT	84084
Westmore Elementary	1150 South Main Street	Orem	UT	84058
Whitesides Elementary	233 Colonial Avenue	Layton	UT	84041
Whittier Elementary	1600 South 300 East	Salt Lake City	UT	84115
William Penn Elementary	1670 E. Siggard Drive	Salt Lake City	UT	84106-3240
Windridge Elementary	1300 South 700 East	Kaysville	UT	84037
Windsor Elementary	1315 N. Main St	Orem	UT	84059
Woods Cross Elementary	745 West 1100 South	Woods Cross	UT	84087
Woodstock Elememtary	6015 South 1300 East	Murray	UT	84121

Waitlist Schools	Address	City	State	Zip
Oak Hollow Elementary	884 East 14400 South	Draper	UT	84020
Sandy Elementary	8725 South 280 East	Sandy	UT	84070
Altara Elementary	800 East 11000 South	Sandy	UT	84094
Park Lane Elementary	9955 South 2300 East	Sandy	UT	84092
Sunrise Elementary	1520 East 11265 South	Sandy	UT	84092
Canyon View Elementary	3050 East 7800 South	Cottonwood Heights	UT	84121
Oakdale Elementary	1900 Creek Road	Cottonwood Heights	UT	84093
Alta View Elementary	917 E. Larkspur Drive	Sandy	UT	84094
East Sandy Elementary	8295 South 870 East	Sandy	UT	84094
Midvalley Elementary	212 East 7800 South	Midvale	UT	84047
Peruvian Park Elementary	1545 East 8425 South	Sandy	UT	84093
Sprucewood Elementary	12025 South 1000 East	Sandy	UT	84094
Willow Springs Elementary	13288 Lone Rock Drive	Draper	UT	84020
West Weber Elementary	3519 North 2500 West	Farr West	UT	84404
Whittier Elementary	3585 South 6000 West	West Valley City	UT	84128
Bella Vista Elementary	2131 Fort Union Blvd	Salt Lake Clty	UT	84121
West Kearns Elementary	4900 South 4620 West	Kearns	UT	84118
Franklin Elementary	1115 West 300 South	Salt Lake City	UT	84104
Ridge View Elementary	14120 S. Greenford Lane	Herriman	UT	84096
Oakridge Elementary	4325 Jupiter Drive	Salt Lake City	UT	84124
Granite Elementary	9760 South 3100 East	Sandy	UT	84092
Butler Elementary	7000 South 2700 East	Cottonwood Heights	UT	84121
Crescent Elementary	11100 South 230 East	Sandy	UT	84070
East Midvale	6990 South 300 East	Midvale	UT	84047
Lone Peak Elementary	11515 S. High Mesa Drive	Sandy	UT	84092
Kaysville Elementary*	50 North 100 East	Kaysville	UT	84037

*School Not Qualified

Program Promotions

You have the *power* to be **watt**smart

Enroll your fifth-grade science students in our free, engaging energy education program.

Be *watt*smart, Begin at home

National Energy Foundation

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

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 begin in September 2019. Reserve your classroom's spot today at **wattsmart.com/begin**.

National Energy Foundation

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

Subscribe | Past Issues | Translate

We invite you to reserve your school's participation in the Be **watts**mart, Begin at home program for fall 2019. Click on "Yes, register me" below and you will be linked directly to the registration site. After you have registered, a coordinator will reach out to you with additional information.

"Yes, register me"

Questions or concerns?
Contact Patti Clark

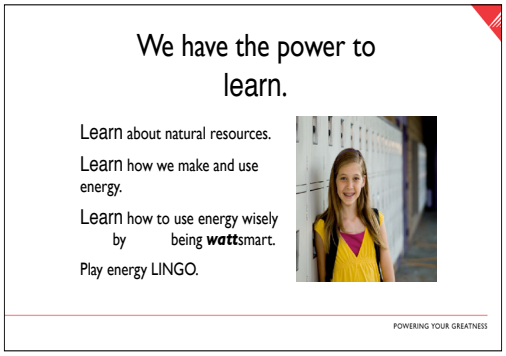
patti@nef1.org | 1-801-327-9515

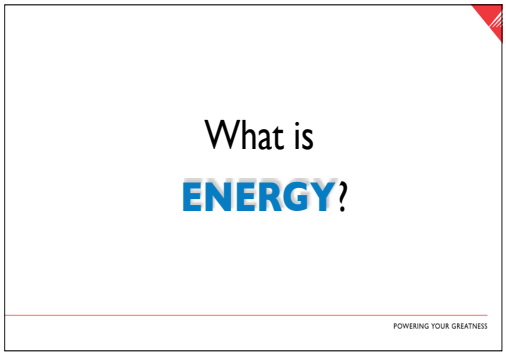
Offer available for teachers within the Rocky Mountain Power service area. Teachers must submit 80 percent or more of *Home Energy Worksheets* to earn the $50 Visa gift card.

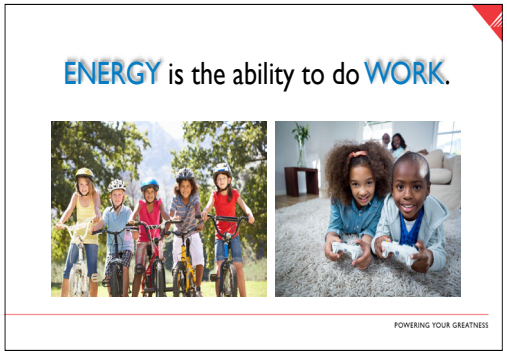
ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

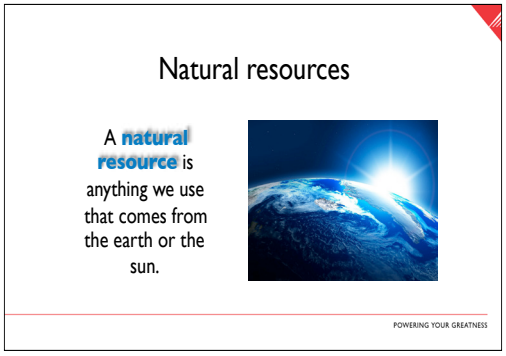
Program Documents

Keynote Presentation









energy

There are many forms of _ _ _ _ _.

natural gas

The blue flame of n_ _ _ _ _ _ _ is a nonrenewable resource.

natural resource

Anything we use that comes from the earth or the sun is a n_ _ _ _ _ _ r_ _ _ _ _ _ _.

Electricity

- The electricity we use is not a natural resource.
- It is made from natural resources.

Rocky Mountain Power

Electric generation by energy source

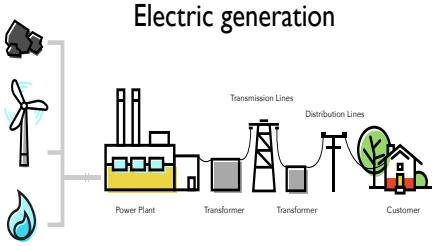
Coal 56% 

Renewables 19% 

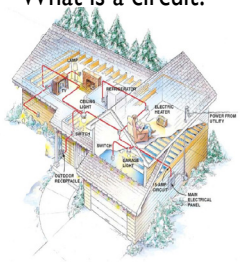
Natural gas 15% 

Other sources 10%

Electric generation



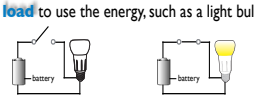
What is a circuit?



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

Using less energy to accomplish the same amount of work

Technology + Behaviors
to reduce energy use

It's time to play Lingo!

Energy efficiency

E_____ is e_____ to do the same amount of work.

Renewable

R_____ naturally replaced.

Nonrenewable

N_____ or not at all.

Oil

rce used to produce O__

Caitlynn Power

POWERING YOUR GREATNESS

Caitlynn Power

POWERING YOUR GREATNESS

Home efficiencies

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

- Decide what you want before opening the refrigerator.
- Use a fan instead of turning up the air conditioner

Remind your parents to:

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

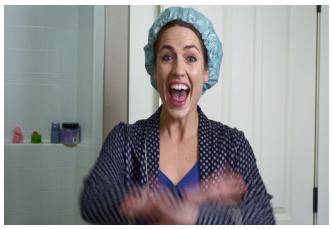
POWERING YOUR GREATNESS

Water efficiencies

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 shower head.
- Make sure your dishwasher has a **full load** before you push the start button.

POWERING YOUR GREATNESS



Caitlynn Power

POWERING YOUR GREATNESS

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

POWERING YOUR GREATNESS

POWERING YOUR GREATNESS

It's time to play Lingo!

LED

A light that can last 25 times longer than an incandescent. L _ _

Phantom Load

Electricity consumed by an electronic device when it is turned off or in standby mode. P_ _ _ _ _ _ L _ _ _

full load

Make sure you have a ___ before starting your dishwasher.

water

Turn off the w_ _ _ _ when brushing your teeth.

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.*

Sign the *Thanks A "Watt" Card.*

POWERING YOUR GREATNESS

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

Visit **thinkenergy.org/wattsmart** for further information about the program.

POWERING YOUR GREATNESS

Implementation Steps

1 Verify you have received:

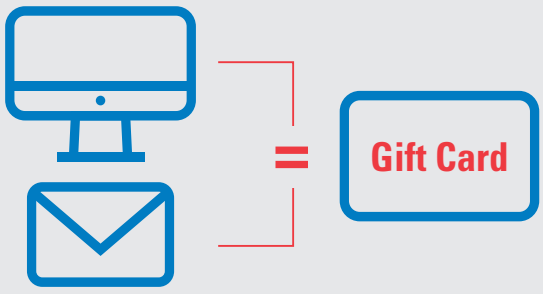
- *Teacher Materials Folder*
- Your **Be *wattsmart*, Begin at home** *Teacher Guide*
- *Home Energy Worksheets* for you and your students
- **Be *wattsmart*, Begin at home** student booklets
- Set of *Parent Letters*
- Wattsmart nightlights (student incentive for completing the *Home Energy Worksheet*)

2 After the presentation, distribute to each student a:

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

3 Final steps:

- Reward students with a wattsmart nightlight when they complete their worksheet on paper or online at **thinkenerg.org/wattsmart**.
- Have each student sign the *Thank You Card* to Rocky Mountain Power.
- *Home Energy Worksheets* submitted online can be verified through the teacher portal (nef1.org/programs/teacher-lookup) with your Teacher ID.
- Mail completed paper *Home Energy Worksheets* and the *Thank You Card* in the postage-paid envelope (found in your materials folder) by November 29, 2019.



National Energy Foundation
cultivating energy literacy

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

UT , ID, WY

Dear Parents,

The **Be *watt*smart, 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 *watt*smart, 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 your child's 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.

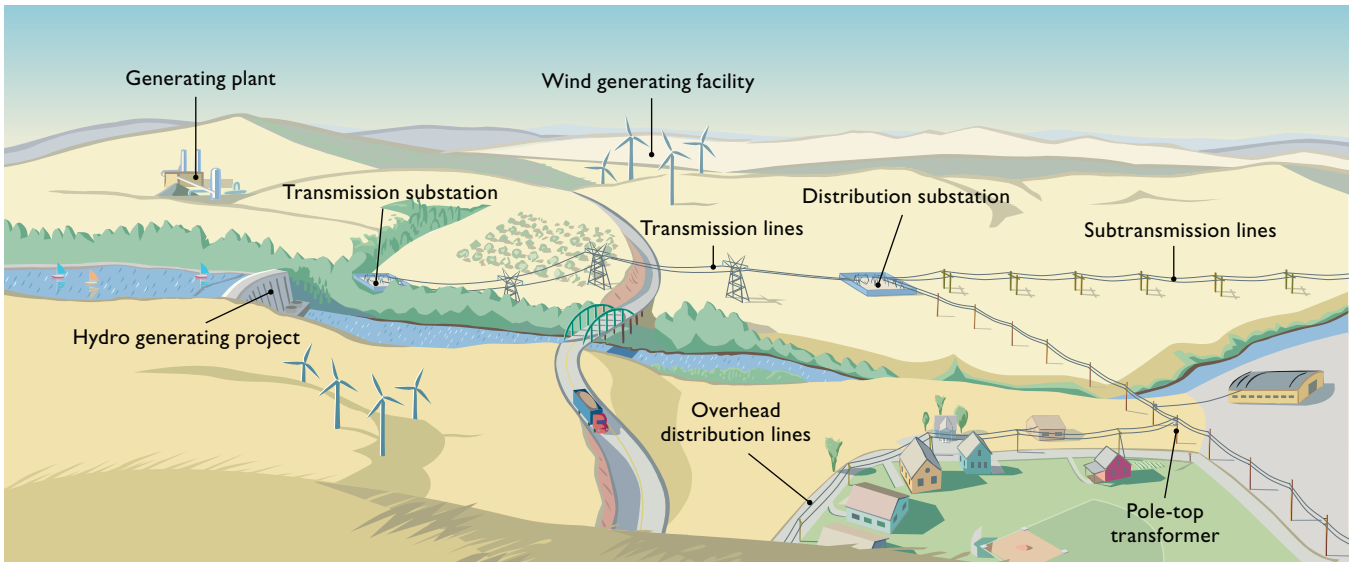
Electricity is the most abundant **secondary energy resource** used. It is the flow of electrical power or charge. It occurs in nature as lightning and static electricity. A generator uses energy resources to create mechanical energy that is then converted into electrical energy.

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 (2018 Basic Fuel Mix)*	United States (U.S. EPA, data)
Natural Gas	15.44%	35.1%
Coal	56.39%	27.4%
Nuclear	0.00%	19.3%
Petroleum	0.00%	.6%
Other/misc.	9.75%	.5%
Renewables (total)	18.42%	17.1%
Hydropower	5.15%	7%
Wind	8.80%	6.6%
Biomass	0.34%	1.5%
Solar	3.79%	1.6%
Geothermal	0.34%	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% 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 shower head 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% 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% 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% 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% 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 *watts*mart 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% 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		× $5.16	
CFL		× $1.08	
LED		× $0.60	
TOTAL			

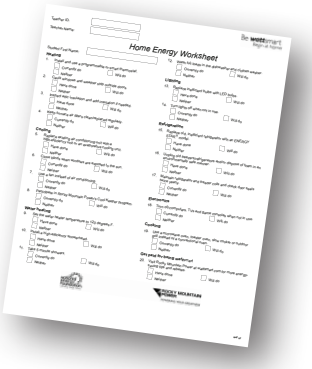
TABLE 3

	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 (7.5 Watts) each used for 2 hours each day for 30 days. EEI Typical Bills and Rates Report, Winter 2019 (12 months ending 2018).

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 thinkenergy.org/wattsmart 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.

Be *watt*smart

Begin at home

National Energy Foundation
cultivating energy literacy

*watt*smart.com

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

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

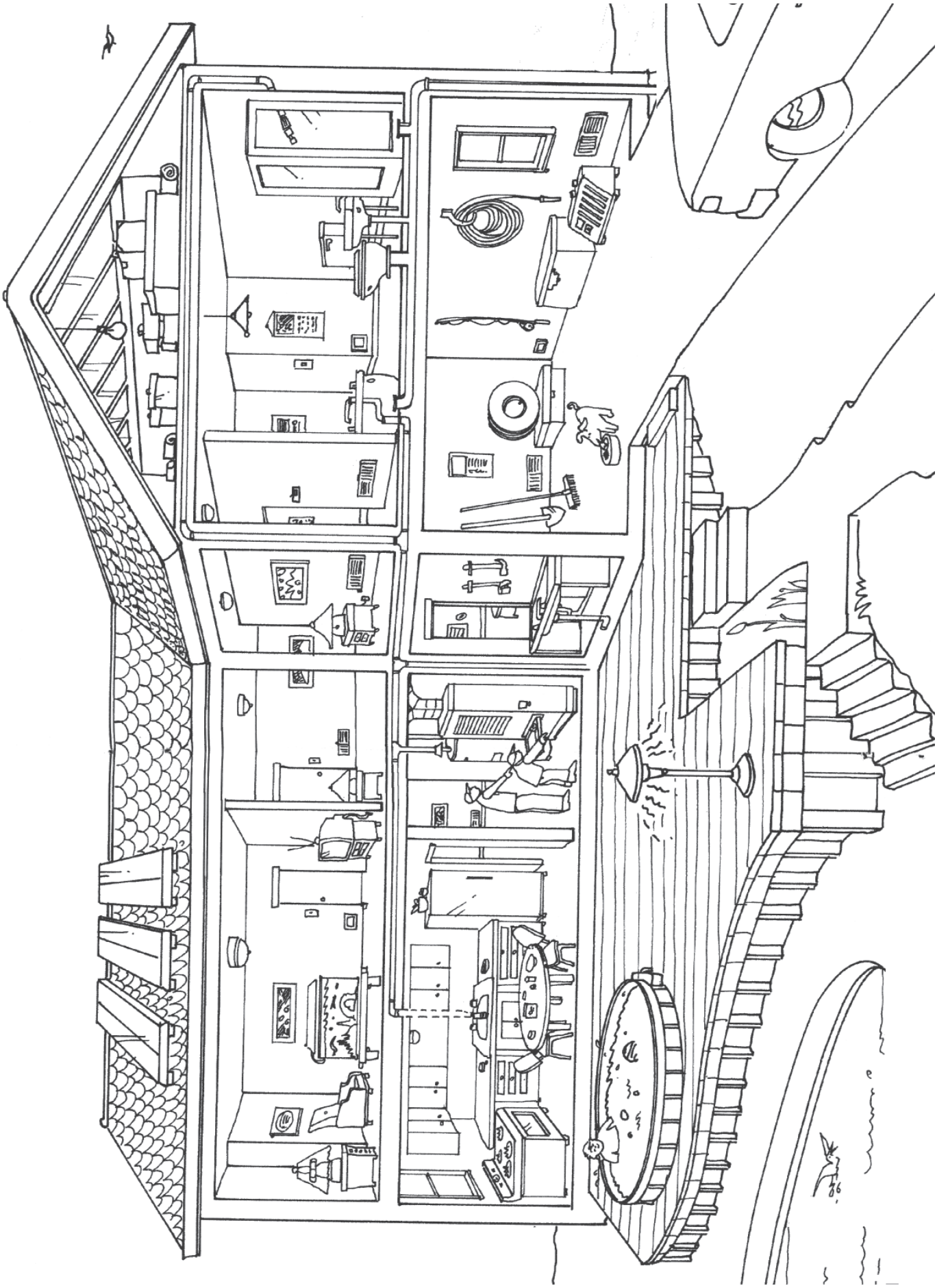


Table of Contents

STEM Connections 1

Activity: Pass the Sack 2

Activity: The Search for Energy 4

Student Sheet: Data Table and Graph 6

Activity: A Bright Idea! 7

Student Sheet: A Bright Idea!. 9

Activity: The Art of Circuits 11

Activity: Shine a Light on History 13

Activity: Layered Lunch 15

Activity: How Do You Rate? 17

Student Sheet: How Do You Rate? 19

Activity: Energy in Math 21

Activity: Be *watt*smart, Begin at home Poster 23

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

Students 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 multiline 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

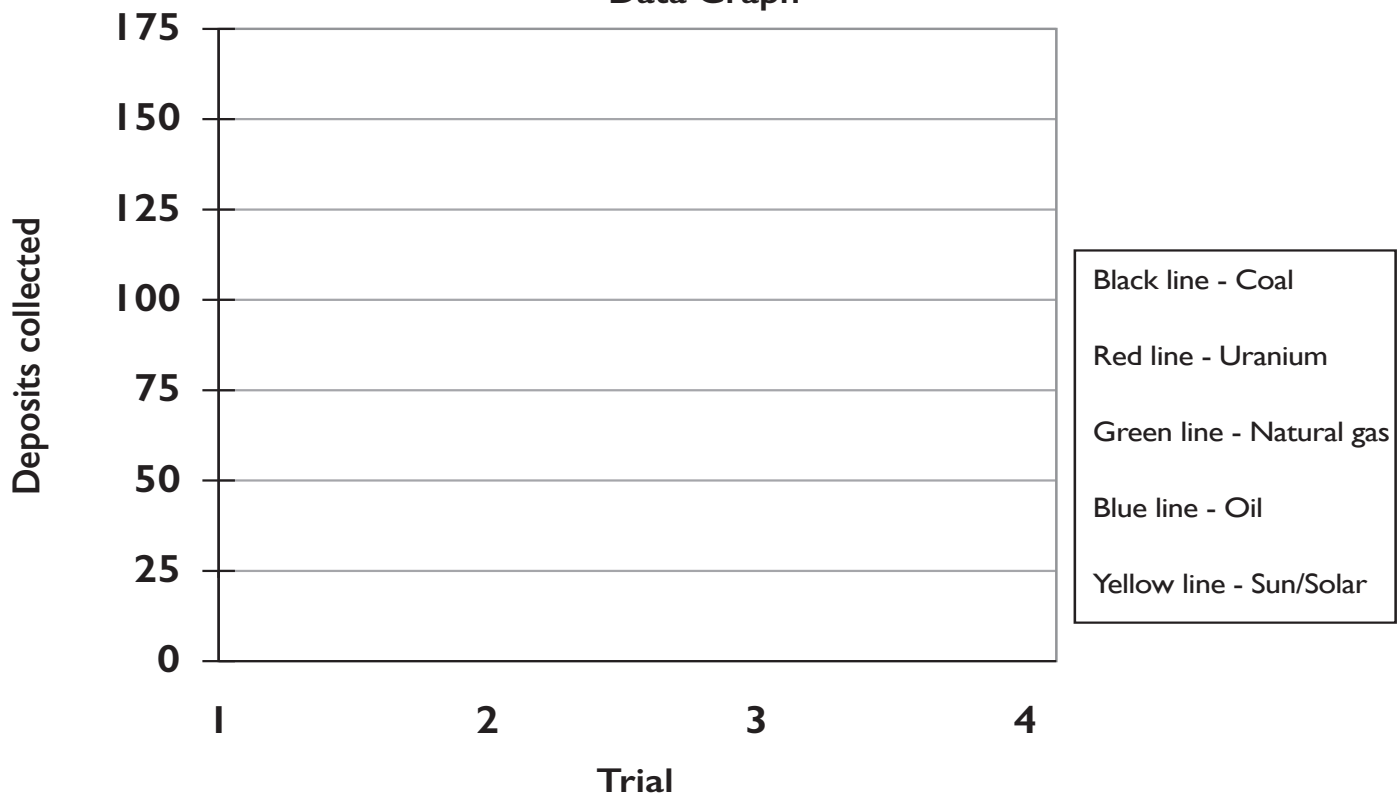
Add wind and water to the activity. Lead a discussion to be sure the students understand why you continued adding more sun, wind and/or water after each trial, but did not add more of the other papers. As a class, come up with a general outline of how to more effectively manage the resources that are 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 wattsmart 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 1799. 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 woodburning 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 1799. 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.

Be wattsmart Begin at home

Activity: The Art of Circuits

Objective

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

Curriculum Focus

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

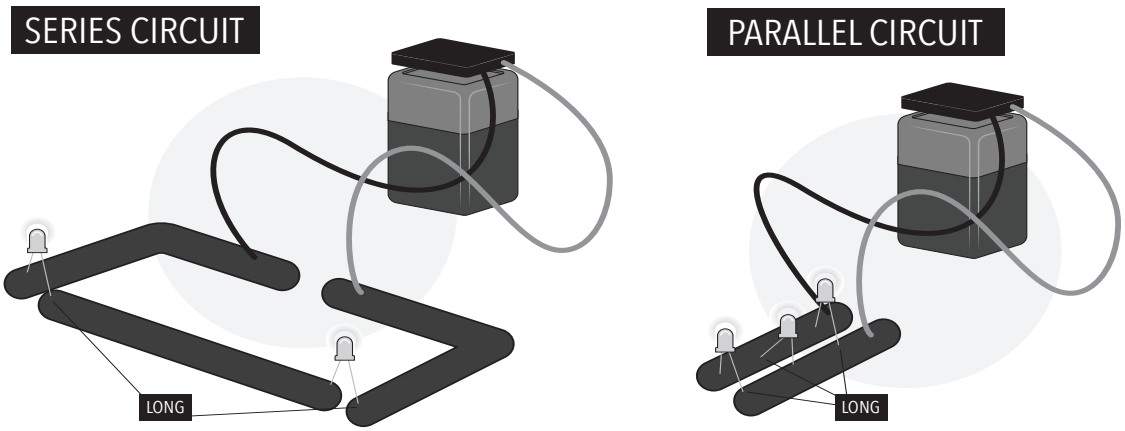
Introduction

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.

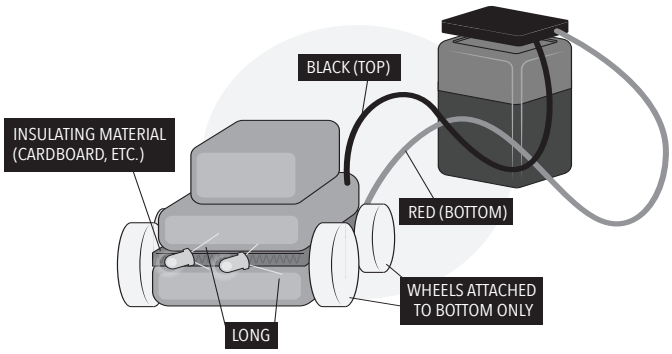
In this activity, students will use salt dough, which is a conductor, to design circuits which will transfer electrical energy. If they are successful, the electricity will be transformed to light and heat energy in a miniature LED bulb.

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.

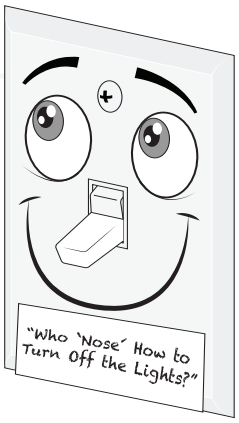


Discussion

- 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

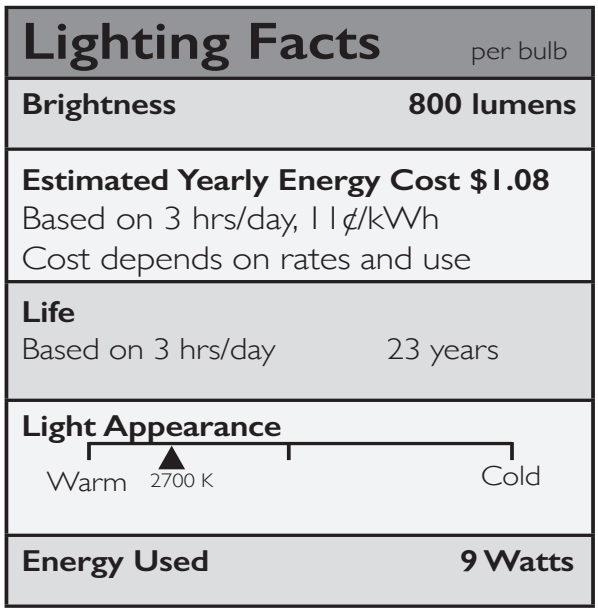
- What kinds of light bulbs are used in your home? How do they affect the way you live and work?
- What do you think the next great electrical invention will be?
- Thomas Edison said, "Genius is one percent inspiration and ninety-nine percent perspiration." What did he mean? How does his quote apply 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	Ducts are insulated in unheated/uncooled areas.	T	F	NA
Window coverings are open on cold, sunny days and closed on hot days.	T	F	NA	Garage is insulated.	T	F	NA
Window coverings are closed at night when heat is on.	T	F	NA	Air filters on furnace and air conditioner are cleaned and changed regularly.	T	F	NA
Thermostat is set at 68° F (20° C) or lower in winter.	T	F	NA	Thermostat is adjusted at night.	T	F	NA
Air conditioning is set at 78° F (26° C) or higher in summer.	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	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
Faucets and toilets do not leak.	T	F	NA	Hot water pipes from water heater are insulated.	T	F	NA
Showers and faucets are fitted with energy-efficient shower heads and aerators.	T	F	NA	If located in an unheated area, hot water heater is wrapped in an insulation blanket.	T	F	NA
Showers last no longer than 5 minutes.	T	F	NA	Broom, not hose, is used to clean driveways and sidewalks.	T	F	NA
Toilets are low flow, or tanks use water displacement devices.	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	Clothes dryer is usually run with a full load.	T	F	NA
Automatic air-dry is used with the dishwasher.	T	F	NA	Clothes are often hung up to dry.	T	F	NA
Washing machine is usually run with a full load.	T	F	NA	Refrigerator is set no lower than 37° F (3° C).	T	F	NA
Cold water is used in washing machine most of the time and is always used for rinses.	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	Light bulbs are kept dusted and clean.	T	F	NA
LED bulbs are used in at least one room.	T	F	NA	Sunlight is used whenever possible.	T	F	NA
Security and decorative lighting is powered by solar energy.	T	F	NA				

Trash

Glass, cans and newspapers are recycled.	T F NA	Overpackaged 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, secondhand 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
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 own bedroom 4 hours a day, and there are three people living there, how many Watts will be used a day to light the bedrooms?
   - 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 h⌂me

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

Objective
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 shower head, red.
    - 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

http://print-bingo.com

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

http://print-bingo.com

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

http://print-bingo.com

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

http://print-bingo.com

Dear Parents,

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

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

- **Be *watt*smart, 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 thinkenergy.org/wattsmart 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 *watt*smart, 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-WY

Estimados padres,

Su hijo ha participado en el programa **Ser *watt*smart, Empieza en casa**, patrocinado por Rocky Mountain Power. En esta presentación atractiva, su hijo aprendió conceptos claves de su plan de estudios de ciencias, así como formas importantes para ser más eficiente con el uso de energía en el hogar.

Como parte del programa de **Ser *watt*smart, Empieza en casa**, su hijo recibirá:

- El folleto de **Ser *watt*smart, Empieza en casa**
- *Verificación de Energía Doméstica*

Tome un momento para leer el folleto informativo con su hijo. Luego, complete la *Verificación de Energía Doméstica* de una de estas maneras:

- Visite thinkenergy.org/wattsmart para rellenar el formulario en línea. Necesitará entrar el número de identificación de su profesor que se encuentra en el formulario de papel.

  o

- Rellenar el formulario y devolverlo al profesor de su hijo. Para agradecerle, Rocky Mountain Power le proporcionará a su hijo una luz de noche.

Apreciamos sus esfuerzos para reforzar la importancia del **Ser *watt*smart, Empieza en casa** de la energía y los acciónes eficientes en el hogar.

National Energy Foundation®
cultivating energy literacy

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

UT-ID-WY

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

Program Evaluation Summary

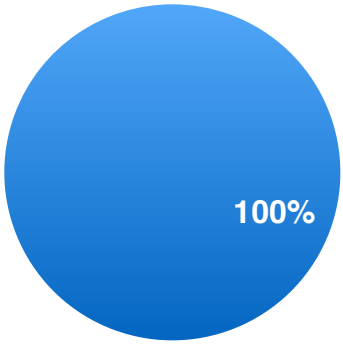
Educators' impressions of the program from 84 educators.

	Strongly Agree	Agree	Disagree	Strongly Disagree	
Materials were attractive and easy to use.	66	17	1	0	79% 20%
Materials and activities were well received by students.	63	20	1	0	75% 24%
Materials were clearly written and well organized.	72	12	0	0	86% 14%
Presenters were able to keep students engaged and attentive.	71	13	0	0	85% 15%
Overall program	69	15	0	0	82% 18%

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

Yes	No
84	0

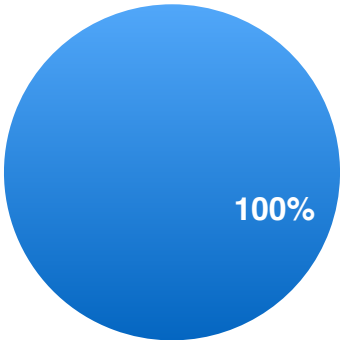
Yes No



Would you recommend this program to other colleagues?

Yes	No
84	0

Yes No



In my opinion, the thing the students liked best about the materials/program was:

Being involved during the presentation. My students loved coming up and being part of the circut as well as playing the Lingo game.
electricity
Engaging presentation, use of students, LINGO
Every year, they love the hands on activities. This year, I noticed they were really enjoying the videos that kind of modeled the youtube videos they watch.
fast paced/fun
hands on experiments
Hands on participation.
Human Circuit
Interactive game
Interesting and engaging.
It kept their interest and engaged.
It was interactive and kept them involved
Lingo
Lingo
Lingo
Lingo
Lingo
Lingo and making a circuit.
Lingo and the energy tube
Lingo and the hands on activity
Lingo Game
Lingo game/ video
Lingo, demonstration, the video clips, nightlights, etc.
Lingo, the interactive experiment
Lingo, Videos (cow) (shower), Circuit Circle, & Night Lights
My students liked when students were asked to hold hands and the electrical current passed through them.
My students love the outlet covers.
Night lights.
Participating in the electricity activity.
Receiving the night-lights and the circuit circle.
Seeing the circuit activity and being part of it
seeing the object lesson and the Lingo
Students bingo game
Students enjoyed making the circuit and the new video clips with the cow.
the "Lingo" game & when there was a visual activity that required students to volunteer.
The activities
The Bingo Game
The bingo game.
The Bingo type game
The connection to the electricity core curriculum.
The current information and hands on activities.
The demonstration with the power stick.
The electrical currant was very engaging for the students. The students really enjoyed understating how the electricity is gathered and transported to our homes.
The energy efficient light
the energy stick
The energy stick & the videos.
The energy sticks and Lingo
the game and the fun videos
The games.
The hands on portion where they could participate.
the hands-on experiments and Lingo!
The homework They were very excited to get a nightlight as a prize if they turned in the assignment
The human circuit
The interaction and the materials.
The interactive activities
the light stick closed circuit demonstration
The light up night lights

In my opinion, the thing the students liked best about the materials/program was:

The LINGO cards
The lingo game and the videos!
the LINGO game. When students got back in the class they were so knowledgeable.
The night lights
The night lights.
The nightlight for bringing the Home Energy Worksheet back.
The open/closed circuits
The plug in lights.
The student involvement in the presentation.
The students loved the assembly.
the videos and the interactive demonstrations
The videos presented were super cool, they are still making jokes about the cow.
They could relate the ideas and concepts to their world. They like the circuit activity and the night lights.
They enjoyed their nightlights. They also enjoyed the interaction that they had with the presenters.
They loved playing the bingo game, they also enjoyed the funny videos and the hands on activities!
They loved the light sticks and getting to be involved in the demonstration.
They really liked anything that was "hands-on" real examples-like the conductor
They really liked the interactive parts; where they had to act out/participate in some way.
They were responsive to the presentation. The presenters were well-informed and held the students attention. Thank you for the nightlights. That was helpful in coercing the students to do the worksheet.
Things that were interactive such as LINGO and demonstrations
Videos and energy stick
Watching the fun videos and getting the nightlight
Watching the movie clips of the girl who gave tips on ways to save on energy costs.
Where power comes from

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

I can't think of anything that needs to be changed.
I can't think of anything.
I really can't think of anything.
I think everything was great. We did run a few short on Lingo cards.
I thought everything was perfect
I thought it was great.
I thought it was well done.
I thought the presenters did an amazing job and my students loved it! I wouldn't change anything.
I would find a way to have the students in a larger room, or do two separate groups. It was tight in there.
I would like to add an experimental session by classes where they can work on some circuits and conductors.
I would time it differently. Our morning breakfast time made things a little crazy
I wouldn't send the Lingo cards in the box because I totally forgot all about the cards and the presenters were able to work through that oversight. I think the presenters should bring the lingo cards with them.
If it could be done in smaller groups
It was great!
It was wonderful!!! THANK YOU
Keep engaging the kids into the presentation.
Louder speaking
Make something for our new core! This assembly has been an awesome resource to help students learn our core. With our Science core changing, we are switching standards. I would love to have another assembly that would match our new core!
making it easier to copy the pages on the backs of the posters to use.
more partner work/interaction from students
No lingo
Not a thing keep up the great work.
nothing - it was fabulous!
Nothing. I thought it was great!
Nothing. It was perfect.
Nothing. It's great!
One more hands on activity.
One thing I would change is having the kids sit for the whole presentation. Last year, we had presenters who had break-out sessions, and let smaller groups of kids get to try different materials to make a complete circuit and having the tube light up. Is there a way that there could be more of those tubes available to use? The teachers could help by taking a small groups too.
Only have 2 classes in the presentation at a time. It is hard with 125 kids to find a room large enough. I know that would mean staying and doing 2 presentations a day at one school. That would be my only suggestion. I know it is funding issue.
Prizes for Lingo
Prizes for the kids who win lingo.
sound system (our part)
Students/families who don't follow through, this is a great opportunity to become aware of money saving tips.
That our core was not changing nest year. 5th grade will no longer teach electricity :(
The program was great! The presenters were well prepared and friendly.
The students didn't really act very interested in the student guides. Perhaps a few more games like crosswords, match the info, and word search puzzles would spark some attention. The format you have now looks very much like a textbook. Also, I had to literally "NAG" students and parents to get the Home Energy Worksheet returned. The students really didn't understand the info asked on the worksheet - probably in the student guide that they didn't want to read!
The surveys are hard to get back. Students are not being responsible with them.
the time of year we choose next year
They need more opportunities to get LINGO!
We are changing science stands and are very sad to be losing this presentation. Please come with a presentation that we can do with our new standards :)

Home Energy Worksheet (English)

Be *watt*smart
Begin at home

Teacher ID:

Teacher Name:

Student First Name:

Home Energy Worksheet

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

Submit online at thinkenergy.org/wattsmart

WAT UT/ID/WY

Home Energy Worksheet (Spanish)

Ser *watt*smart
Empieza en casa

Identificación del profesor(a): _____

Nombre del profesor(a): _____

Primer nombre del estudiante: _____

Verificación de Energía Doméstica

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 el refrigerador viejo 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 haré ☐ 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

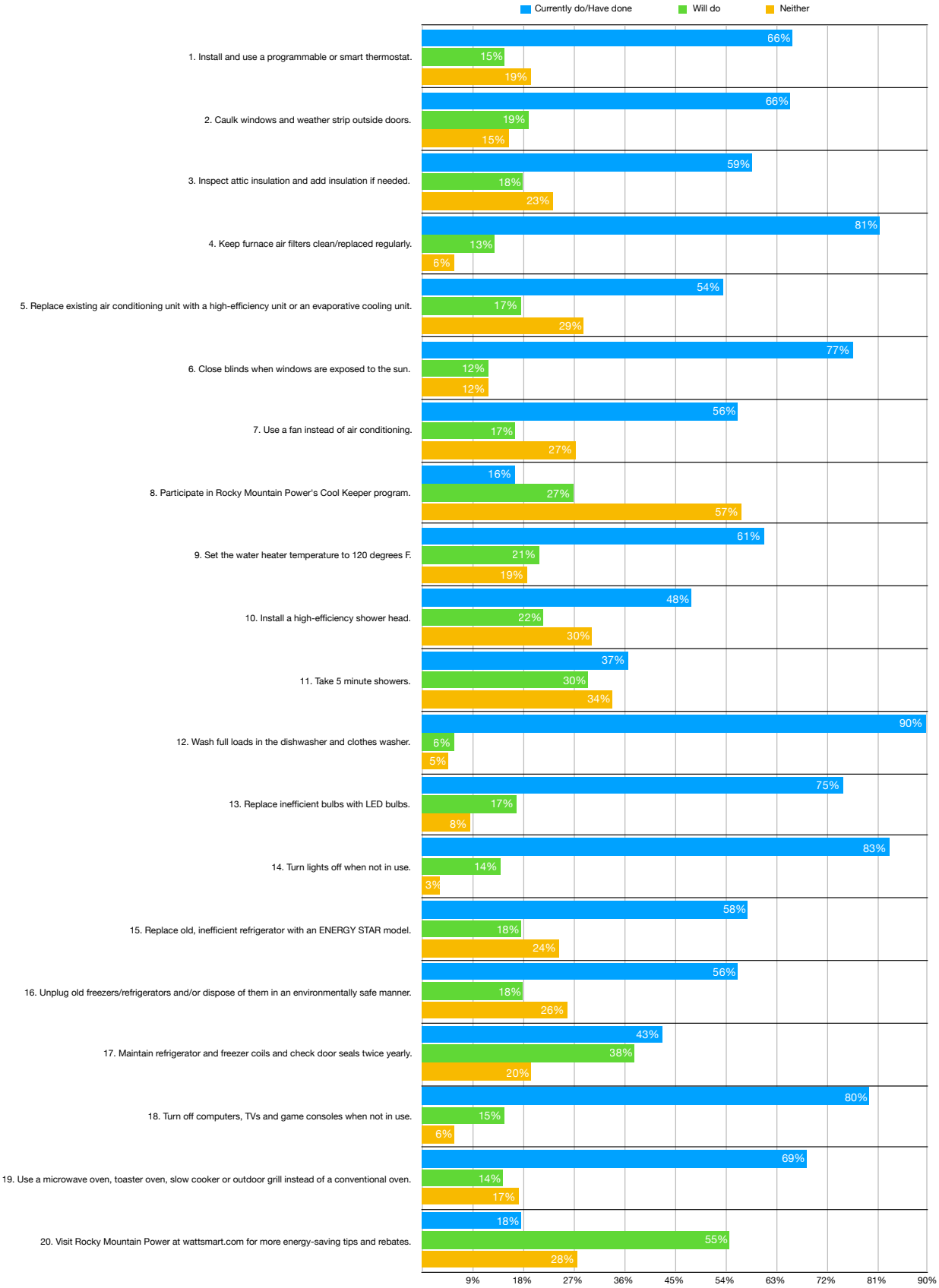
ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

Enviar en línea a
thinkenergy.org/wattsmart

WAT UT

Home Energy Worksheet Summary – Rocky Mountain Power

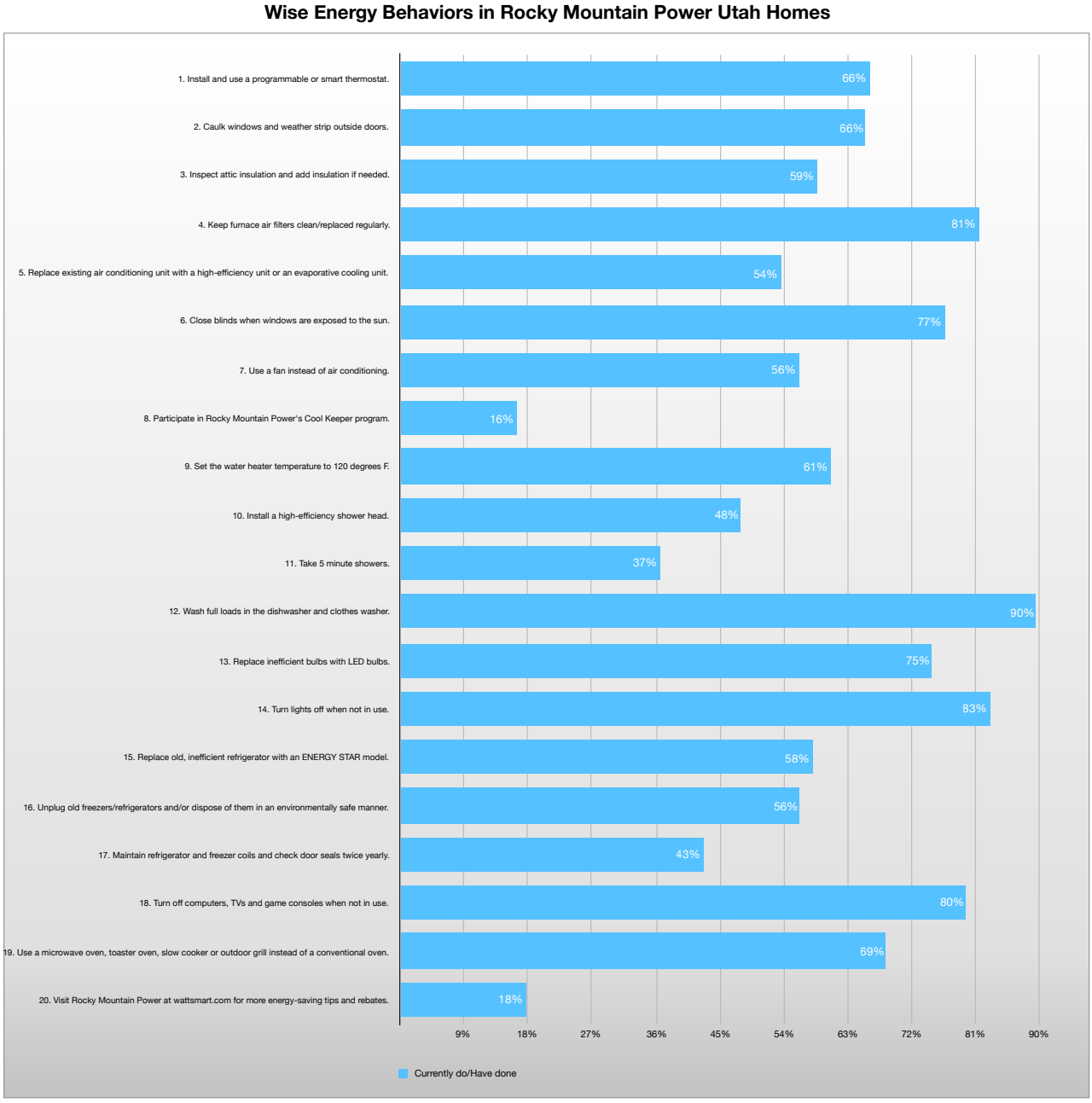
Energy Efficient Activity	Currently do/Have done	Will do	Neither
1. Install and use a programmable or smart thermostat.	66%	15%	19%
2. Caulk windows and weather strip outside doors.	66%	19%	15%
3. Inspect attic insulation and add insulation if needed.	59%	18%	23%
4. Keep furnace air filters clean/replaced regularly.	81%	13%	6%
5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.	54%	17%	29%
6. Close blinds when windows are exposed to the sun.	77%	12%	12%
7. Use a fan instead of air conditioning.	56%	17%	27%
8. Participate in Rocky Mountain Power's Cool Keeper program.	16%	27%	57%
9. Set the water heater temperature to 120 degrees F.	61%	21%	19%
10. Install a high-efficiency shower head.	48%	22%	30%
11. Take 5 minute showers.	37%	30%	34%
12. Wash full loads in the dishwasher and clothes washer.	90%	6%	5%
13. Replace inefficient bulbs with LED bulbs.	75%	17%	8%
14. Turn lights off when not in use.	83%	14%	3%
15. Replace old, inefficient refrigerator with an ENERGY STAR model.	58%	18%	24%
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.	56%	18%	26%
17. Maintain refrigerator and freezer coils and check door seals twice yearly.	43%	38%	20%
18. Turn off computers, TVs and game consoles when not in use.	80%	15%	6%
19. Use a microwave oven, toaster oven, slow cooker or outdoor grill instead of a conventional oven.	69%	14%	17%
20. Visit Rocky Mountain Power at wattsmart.com for more energy-saving tips and rebates.	18%	55%	28%



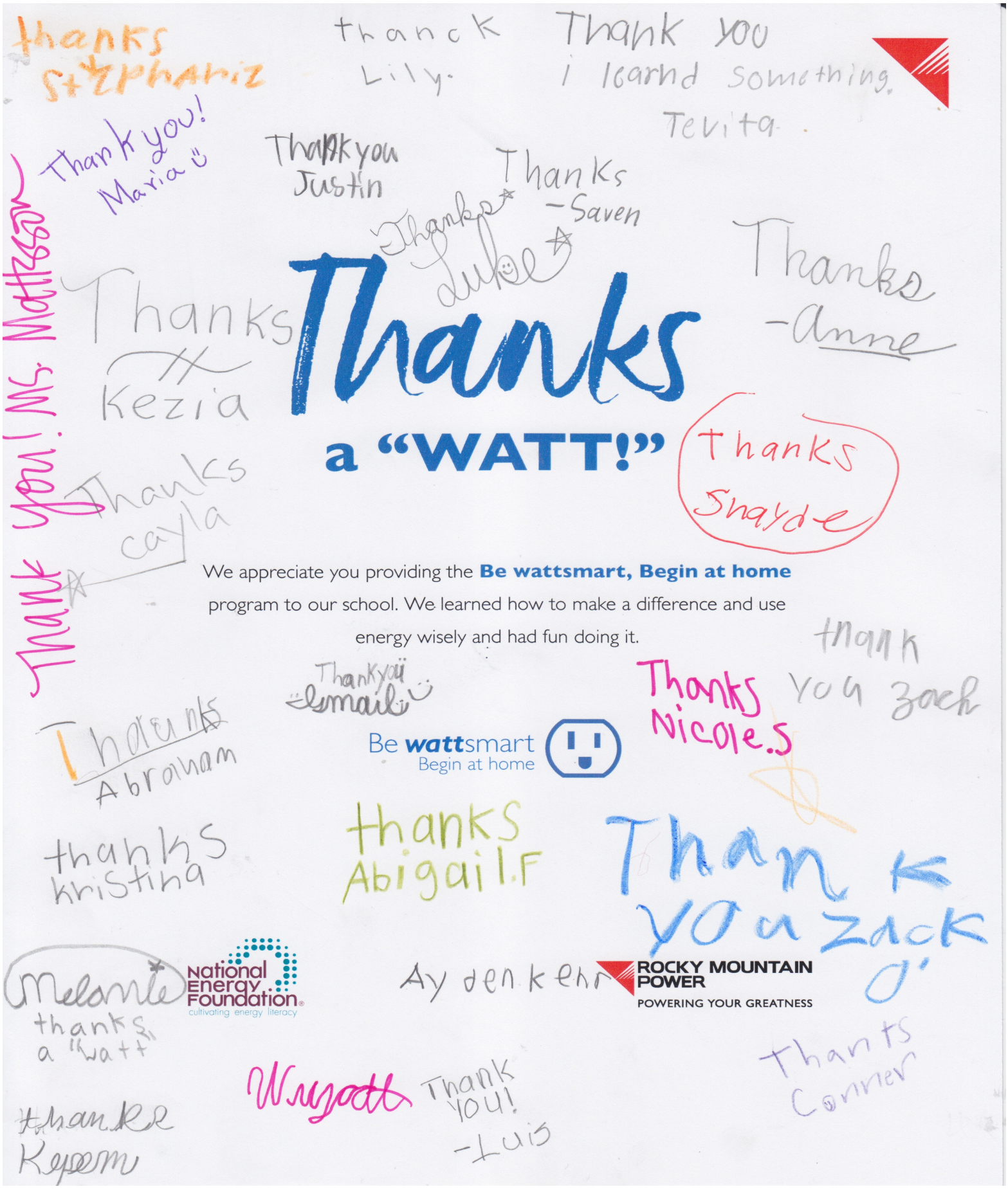
Data Numbers

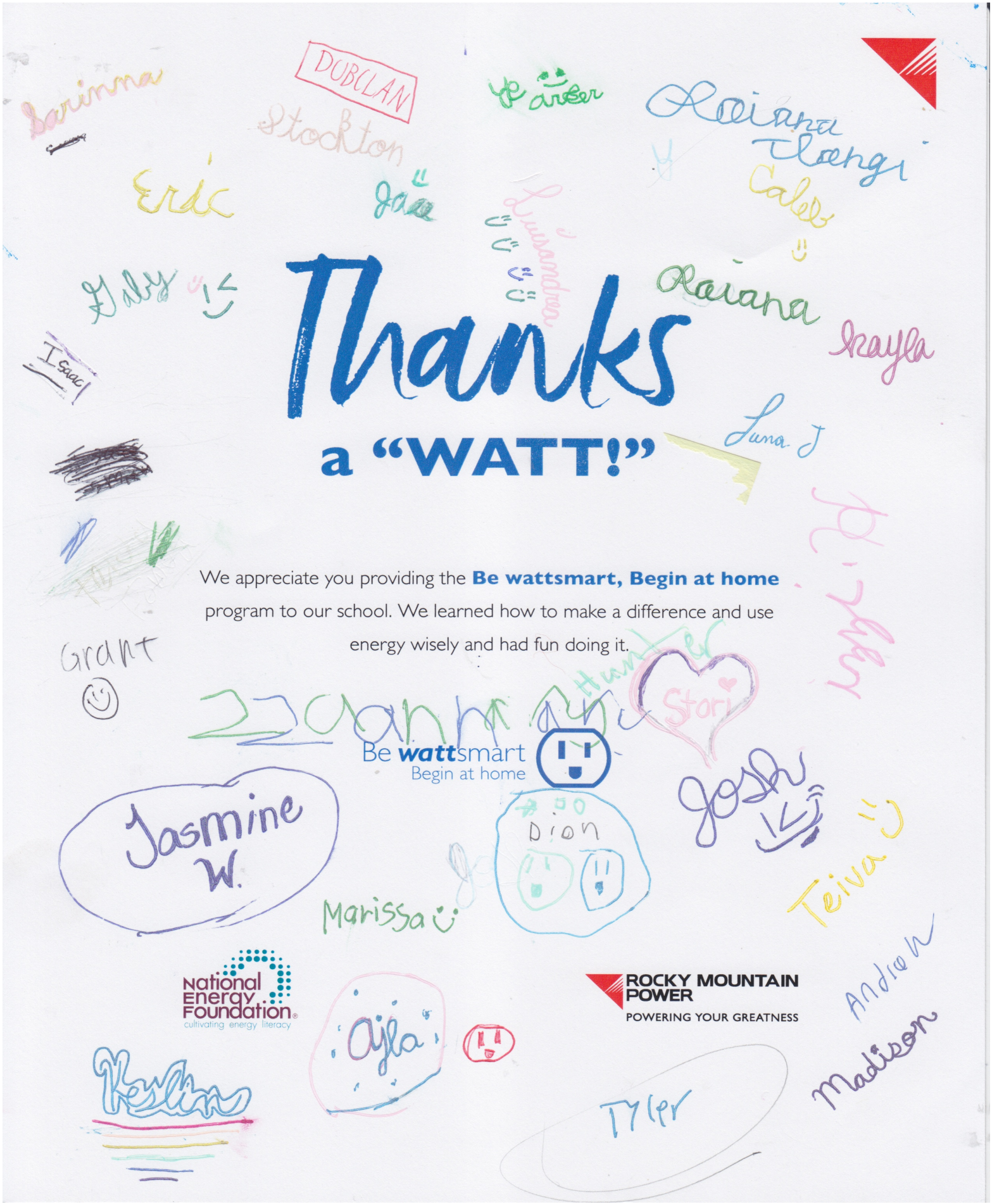
Energy Efficient Activity	Currently do/Have done	Will do	Neither	Total Responses
1. Install and use a programmable or smart thermostat.	6624	1480	1932	10036
2. Caulk windows and weather strip outside doors.	6508	1887	1526	9921
3. Inspect attic insulation and add insulation if needed.	5816	1784	2298	9898
4. Keep furnace air filters clean/replaced regularly.	8128	1288	558	9974
5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.	5335	1741	2878	9954
6. Close blinds when windows are exposed to the sun.	7658	1176	1164	9998
7. Use a fan instead of air conditioning.	5586	1647	2705	9938
8. Participate in Rocky Mountain Power's Cool Keeper program.	1618	2647	5611	9876
9. Set the water heater temperature to 120 degrees F.	6018	2055	1851	9924
10. Install a high-efficiency shower head.	4782	2167	3030	9979
11. Take 5 minute showers.	3658	2957	3386	10001
12. Wash full loads in the dishwasher and clothes washer.	8980	568	475	10023
13. Replace inefficient bulbs with LED bulbs.	7459	1665	839	9963
14. Turn lights off when not in use.	8215	1377	297	9889
15. Replace old, inefficient refrigerator with an ENERGY STAR model.	5801	1762	2439	10002
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.	5606	1789	2566	9961
17. Maintain refrigerator and freezer coils and check door seals twice yearly.	4250	3771	1946	9967
18. Turn off computers, TVs and game consoles when not in use.	7993	1459	574	10026
19. Use a microwave oven, toaster oven, slow cooker or outdoor grill instead of a conventional oven.	6844	1442	1704	9990
20. Visit Rocky Mountain Power at wattsmart.com for more energy-saving tips and rebates.	1761	5476	2760	9997

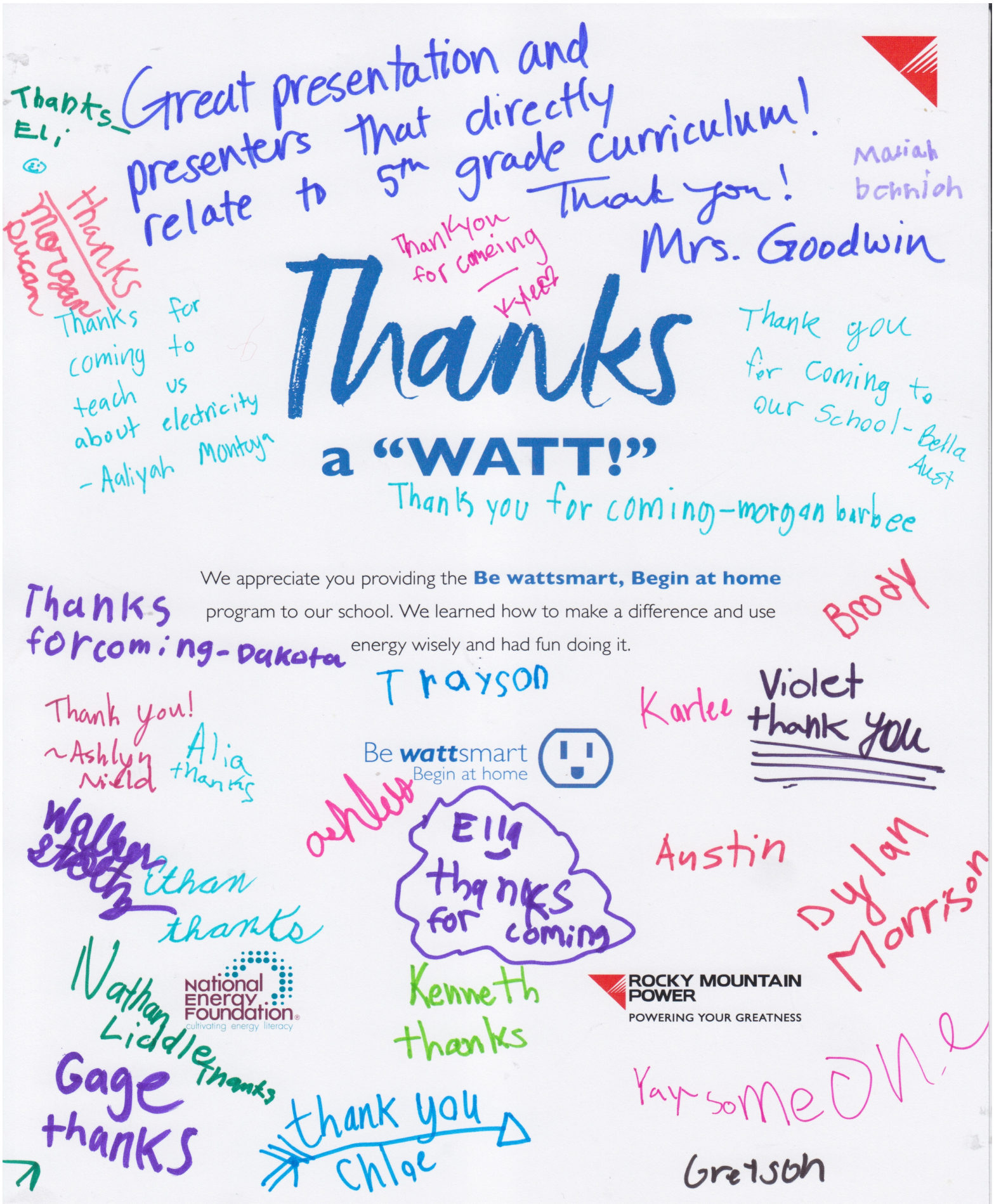
Wise Energy Behaviors in Rocky Mountain Power Utah Homes



Sampling of *Thanks a "WATT" Cards*







Ali Edgar Angie Zavala

Paili Lisk

Emma Penny

Marley Allred

Isabella

Ronan

Thanks a "WATT!"

Aiden

Bronson

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.

Mason

Wesley

Gabriella

Grayson

Be wattsmart Begin at home

Bethany

Gracie

Bellasara

National Energy Foundation
cultivating energy literacy

ROCKY MOUNTAIN POWER
POWERING YOUR GREATNESS

Courtney

Jovie

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 – Spanish 78-degrees
- Good for Utah – Summer 78-degrees
- Intermountain Healthcare :30
- Red Iguana :30

Wattsmart **radio**

- Utah Thrive :60
- Utah Thrive (Spanish) :60
- Intermountain Healthcare :30
- Intermountain Healthcare :60
- Red Iguana :30
- Red Iguana :60

Wattsmart **Print**

- Thank you ad
- Partners in Innovation color
- Power of partnership
- Intermountain Healthcare – color
- Red Iguana – color
- Irrigation ad

Digital & Facebook

- Good for Utah – Summer Facebook video – thumbnail
- Good for Utah – Spring Digital
- Good for Utah – Summer Digital
- Ceiling fan – cooling Facebook
- Ceiling fan – cooling digital
- Smart Thermostat - cooling Facebook
- Smart Thermostat – cooling digital
- Intermountain Healthcare Facebook/Instagram
- Red Iguana Facebook
- Red Iguana Digital
- Intermountain Healthcare Digital
- Small Business Direct – Barber
- Small Business Direct – Layton
- Small Business Direct – Midvale
- Small Business Direct – general ad
- Small Business Direct – Taylorsville

Out of home

- LED bulb poster/bulletin
- Thermostat poster/bulletin
- Utah Good transit ads

Direct mail

- Cool Keeper letter

- Irrigation letter | LESA flyer and ILC postcard and application – Spring
- Irrigation letter | LESA flyer application – Fall

Email

- Assessment Email
- HVAC Automated Rooftop Controls Email
- Cool Keeper Email
- Thank you for being Wattsmart

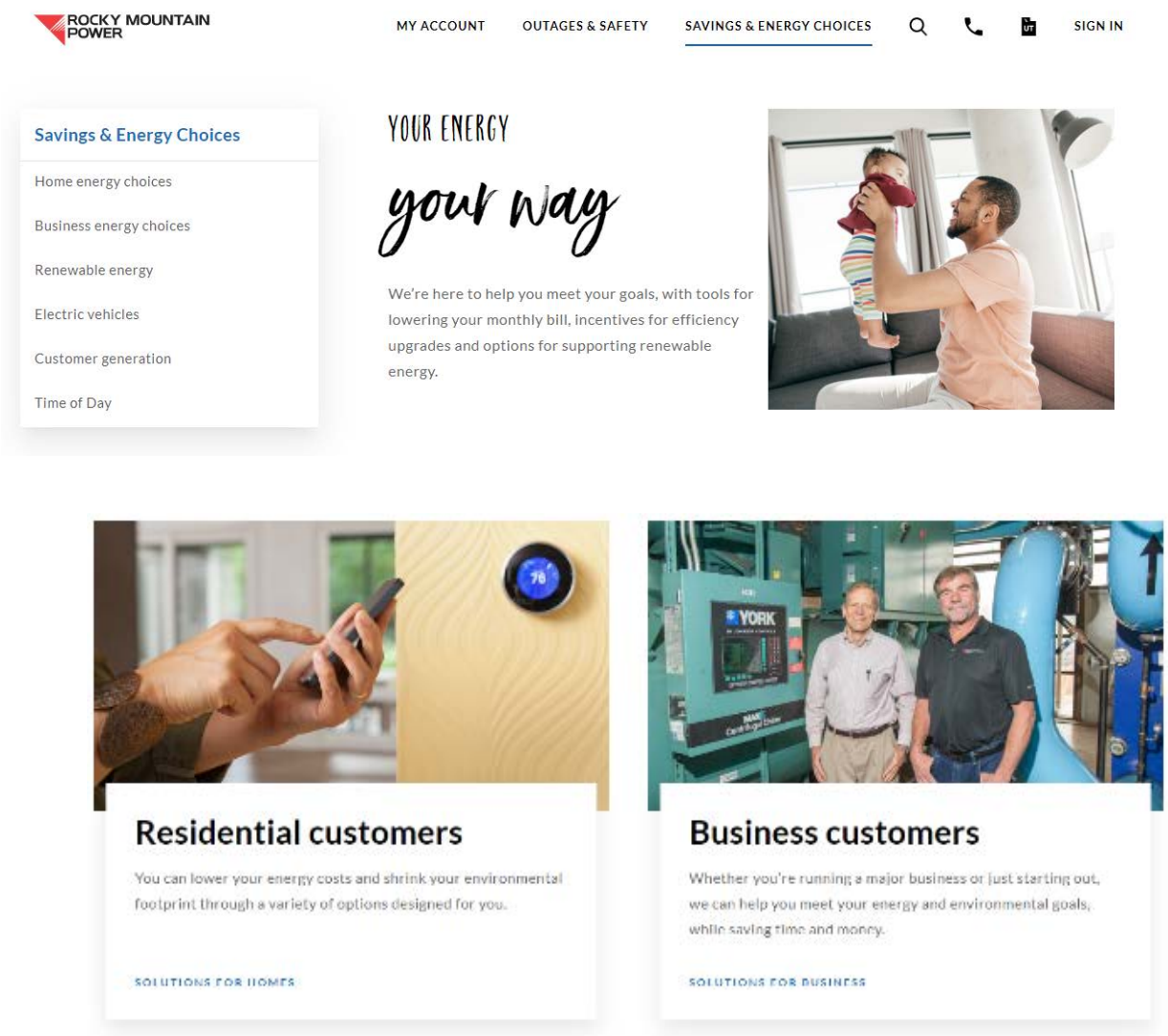
Collateral

- Wattsmart Business Brochure – April 2019
- Wattsmart Business Lighting Catalog – April 2019
- Wattsmart Business Energy Management – March 2019
- Wattsmart Business Energy Project Manager Co-Funding – January 2019
- Wattsmart Business HVAC Check-Up – March 2019
- Wattsmart Business Utah Overview – April 2019
- Wattsmart Business Instant Incentives – September 2019

Videos for Classroom Program

- Power Vampires
- Short Shower Challenge
- Weatherization Makeover

New Wattsmart.com webpage look



Newsletters/Bill Inserts

Connect Newsletters

- January 2019 – Celebrate smart savings
- April 2019 – Go Ductless
- July 2019 – Save more with Cool Keeper
- October 2019 – Warm comfort. Cool savings.

Bill Inserts

- Cool Keeper
- UT DSM Credit

News Releases

- Rocky Mountain Power's Cool Keeper program nationally recognized for tech innovation
- Set your dial to 78 degrees – yes 78 degrees
- Energy saving tips to manage your winter power bill

Photo from 2019 Salt Lake Tribune Home & Garden Festival

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Confidential Appendix 8
Confidential Cost Effectiveness
2019 Utah Peak Reduction

THIS EXHIBIT IS CONFIDENTIAL AND IS PROVIDED UNDER SEPARATE COVER

CONFIDENTIAL INFORMATION CERTIFICATE

IN DOCKET NO. 20-035-27

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. 20-035-27 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. 20-035-27

I hereby certify that on June 1, 2020, 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	
Assistant Attorney General	
Patricia Schmid	pschmid@agutah.gov
Justin Jetter	jjetter@agutah.gov
Robert Moore	rmoore@agutah.gov
Victor Copeland	vcopeland@agutah.gov
Rocky Mountain Power	
Data Request Response Center	datarequest@pacificorp.com
Jana Saba	jana.saba@pacificorp.com utahdockets@pacificorp.com
Michael Snow	michael.snow@pacificorp.com

Katie Savarin
Coordinator, Regulatory Operations