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SUPPLEMENT 1: COST-EFFECTIVENESS

Cost-Effectiveness

Idaho Power considers cost-effectiveness of primary importance in the design, implementation, and tracking of energy efficiency and demand response programs.

Prior to the actual implementation of energy efficiency or demand response programs, Idaho Power performs a preliminary analysis to assess whether a potential program design or measure may be cost-effective. Incorporated in the analysis are inputs from various sources that use the most current and reliable information available. When possible, Idaho Power leverages the experiences of other utilities in the region and/or throughout the country to help identify specific program parameters. This is accomplished through discussions with other utilities' program managers and researchers. Idaho Power also uses electric industry research organizations, such as E Source, Northwest Energy Efficiency Alliance (NEEA), Regional Emerging Technology Advisory Committee (RETAC), the Consortium for Energy Efficiency (CEE), American Council for an Energy-Efficient Economy (ACEEE), and Advanced Load Control Alliance (ALCA) to identify similar programs and their results. Additionally, Idaho Power relies on the results of program impact evaluations and recommendations from consultants.

Idaho Power's goal is for all programs to have benefit/cost (B/C) ratios greater than one for the utility cost test (UCT) in Idaho, and the total resource cost (TRC) test in Oregon, at the program and measure level. In addition, Idaho Power looks at both the UCT and TRC, as well as the participant cost test (PCT) at the program and measure level, where appropriate. Each cost-effectiveness test provides a different perspective, and Idaho Power believes each test provides value when evaluating program performance. In 2020, Idaho Power transitioned to the UCT as the primary cost-effectiveness test in Idaho as directed by the Idaho Public Utilities Commission (IPUC) in Order Nos. 34469 and 34503. The company will continue calculating the TRC and PCT because each perspective can help inform the company and stakeholders about the effectiveness of a particular program or measure. Additionally, programs and measures offered in Oregon must still use the TRC as the primary cost-effectiveness test as directed by the Public Utility Commission of Oregon (OPUC) in Order No. 94-590.

Idaho Power uses several assumptions when calculating the cost-effectiveness of a given program or measure. For some measures within the programs, savings can vary based on factors, such as participation levels or the participants' locations. For instance, heat pumps installed in the Boise area will have lower savings than those installed in the McCall area because of climate differences.

If program participation and savings increase, fixed costs (such as labor and marketing) are distributed more broadly, and the program's cost-effectiveness increases.

When an existing program or measure is not cost-effective or is expected to become not cost-effective from either the UCT perspective in Idaho or the TRC perspective in Oregon, Idaho Power works with the Energy Efficiency Advisory Group (EEAG) to get additional input about next steps. The company demonstrates why the non-cost-effective measures or programs are implemented, or continued to be offered, and communicates the steps the company plans to take to improve its cost-effectiveness or end the offering. This aligns with the expectations of the IPUC and OPUC.

In OPUC Order No. 94-590, issued in UM 551, the OPUC outlines specific cost-effectiveness guidelines for energy efficiency measures and programs managed by program administrators. The OPUC expects that measures and programs offered in Oregon pass the TRC test. If Idaho Power determines a program or measure is not cost-effective but meets one or more of the exceptions set forth by Order No. 94-590, the company files an exceptions request with the OPUC to continue offering the measure or program within its Oregon service area.

Non-cost-effective measures and programs may be offered by a utility if they meet one or more of the following additional conditions specified by Section 13 of OPUC Order No. 94-590:

- A. The measure produces significant non-quantifiable non-energy benefits (NEB)
- B. Inclusion of the measure will increase market acceptance and is expected to lead to reduced cost of the measure
- C. The measure is included for consistency with other demand-side management (DSM) programs in the region
- D. Inclusion of the measure helps increase participation in a cost-effective program
- E. The package of measures cannot be changed frequently, and the measure will be cost-effective during the period the program is offered
- F. The measure or package of measures is included in a pilot or research project intended to be offered to a limited number of customers
- G. The measure is required by law or is consistent with OPUC policy and/or direction

For operational and administrative efficiency, Idaho Power endeavors to offer identical programs in both its Oregon and Idaho jurisdictions; however, due to the different primary cost-effectiveness tests in each state, measures may not be offered in both states.

Methodology

For its cost-effectiveness methodology, Idaho Power relies on the Electric Power Research Institute (EPRI) End Use Technical Assessment Guide (TAG); the California Standard Practice Manual and its subsequent addendum; the National Action Plan for Energy Efficiency's (NAPEE) Understanding Cost Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy-Makers.

For energy efficiency programs, each program's cost-effectiveness is reviewed annually from a one-year perspective. The annual energy-savings benefit value is summed over the life of the measure or program and is discounted to reflect 2023 dollars. The result of the one-year perspective is shown in Table 4 and the Cost-Effectiveness Tables by Program section in this supplement.

The goal of demand response programs is to minimize or delay the need to build new supply-side resources. Unlike energy efficiency programs or supply-side resources, demand response programs

must acquire and retain participants each year to maintain deployable demand-reduction capacity for the company.

Idaho Power determines cost-effectiveness for its demand response programs using the approved method for valuing demand response under IPUC case IPC-E-21-32 (Order No. 35336) and OPUC Docket No. ADV 1355. The avoided cost calculation for demand response programs is as follows:

$$(\text{Levelized Fixed Costs} - \text{Additional Benefits}) \times \text{Effective Load Carrying Capacity (ELCC) of Annual DR Capacity Compared to Proxy Resource} = \$ \text{ per kW year DR Avoided Costs}$$

Each of the three components have been updated:

(Each of the three components have been updated:

1. From the *2021 IRP*, the 2023 levelized fixed cost value of a Simple Cycle Combustion Turbine (SCCT) was determined to be \$134.63 per kW per year.
2. From the *2021 IRP*, to determine the additional ancillary benefits provided by the SCCT compared to DR, an analysis was performed where DR was replaced with an equivalent SCCT and the fixed costs of the SCCT were removed from the model. The result of this analysis showed there were no additional benefits associated with the SCCT because the cost of the fuel and SCCT plant O&M required to meet the DR demand.
3. The updated ELCC of approximately 316 MW of DR capacity compared to a SCCT using *2021 IRP* assumptions is 62.82%.

This results in a value of \$84.57 per kW year as the avoided cost threshold that the existing DR programs need to be under to be considered cost effective. A summary of the dollar per kW year for each DR program can be found in Table 3.

Assumptions

Idaho Power relies on third-party research to obtain savings and cost assumptions for various measures. These assumptions are routinely reviewed internally and with EEAG and updated as new information becomes available. For many of the residential and irrigation measures within this supplement, savings and costs were derived from either the Regional Technical Forum (RTF) or the Idaho Power Energy Efficiency Potential Study conducted by Applied Energy Group (AEG).

The RTF regularly reviews, evaluates, and recommends eligible energy efficiency measures and provides the estimated savings and costs associated with those measures. As the RTF updates these savings and cost assumptions, Idaho Power applies them to current program offerings and assesses the need to make any program changes. Idaho Power staff participates in the RTF by attending monthly meetings and contributing to various sub-committees. Depending on the workbook referenced, data from the RTF is in either 2012 or 2016 dollars and must be escalated to 2023 dollars. For costs in 2012 dollars, the cost are escalated by 27.7%. For costs in 2016 dollars, the costs are escalated by 19.7%. These percentages are provided by the RTF in workbook [RTFStandardInformationWorkbook_v4_8.xlsx](#).

Idaho Power uses a technical reference manual (TRM) developed by ADM Associates, Inc. for the savings and cost assumptions in the Commercial and Industrial (C&I) Energy Efficiency Program's New Construction and Retrofits options and the Multifamily Energy Efficiency Program. In 2020, the company began the process to update the assumptions in the C&I TRM based on the 2018 International Energy Conservation Code (IECC). The updated C&I TRM is the source for most prescriptive savings values for the New Construction and Retrofits options in the C&I Energy Efficiency program and have been implemented as of mid-2021. In 2023, Idaho Power contracted with ADM Associates to create a Multifamily TRM.

Idaho Power also relies on other sources for savings and cost assumptions, such as the Northwest Power and Conservation Council (NWPCC), Northwest Energy Efficiency Alliance (NEEA), the Database for Energy Efficiency Resources (DEER), the Energy Trust of Oregon (ETO), the Bonneville Power Administration (BPA), third-party consultants, and other regional utilities. Occasionally, Idaho Power will also use internal engineering estimates and calculations for savings and costs based on information gathered from previous projects.

The company freezes savings assumptions when the budgets and goals are established for the next calendar year unless a code changes, a standard changes, or program updates necessitate a need to use updated savings. These assumptions are discussed in more detail in the cost-effectiveness sections for each program in the Demand-Side Management 2023 Annual Report. Generally, the 2023 energy savings reported for most programs will use the assumptions set at the beginning of the year. One exception was regarding the lighting savings assumption. Because the lighting standards from the *Energy Independence Act of 2007* became fully enforced as of July 1, 2023, Idaho Power references two different lighting workbooks, one for the first half and another for the second half of 2023 for programs that claimed savings from LED lightbulbs.

The remaining inputs used in the cost-effectiveness calculations are obtained from the IRP process. Idaho Power's 2021 IRP was acknowledged by the IPUC under case IPC-E-21-43 on November 18, 2022, and with the OPUC under case LC 78 on January 13, 2023. The 2021 IRP is the source for all financial and cost-effectiveness analysis for the 2023 energy efficiency programs. As noted earlier, the 2021 IRP is also used to determine the cost-effectiveness threshold for the DR programs.

On September 29, 2023, Idaho Power filed its 2023 IRP with the IPUC under case IPC-E-23-23 and with the OPUC under case LC 84. At the EEAG meeting on August 17, 2023, Idaho Power presented its proposal to use avoided costs from the most recently "filed" IRP rather than the most recently "acknowledged" IRP for DSM program planning. The intent of this shift is to reduce lag time between when the avoided costs are updated and used for program planning and cost-effectiveness evaluations. As a result, beginning with the 2024 program year, the company will now use the most current information available for its DSM planning, evaluation, and analyses. Therefore, the 2023 IRP will be the source of the cost-effectiveness inputs for the 2024 program year.

Appendix C—Technical Appendix of Idaho Power's 2021 IRP contains the financial assumptions—such as discount rate, escalation rate and line losses—used in the energy efficiency cost-effectiveness

analysis. DSM avoided costs vary by season and time of day and are applied to an end-use load shape to obtain the value of a particular measure or program. DSM avoided energy costs are based on both the projected fuel costs of a peak-load serving resource and forward electricity prices as determined by Idaho Power's power supply model, AURORA[®] Electric Market Model. The avoided capital cost of capacity is based on a gas-fired, simple-cycle turbine. Transmission and distribution (T&D) benefits are also included in the cost-effectiveness analyses.

As recommended by the NAPEE's Understanding Cost-Effectiveness of Energy Efficiency Programs, Idaho Power's weighted average cost of capital (WACC) of 7.12% is used to discount future benefits and costs to today's dollars. Once the DSM avoided costs and load shapes are applied to the annual kWh savings of a measure or program, the WACC is used to calculate the net present value (NPV) of the annual benefit for the UCT and TRC test B/C ratios. However, determining the appropriate discount rate for participant cost and benefits is difficult because of the variety of potential discount rates that can be used by participants. Because the participant benefit is based on the anticipated bill savings of the customer, Idaho Power believes an alternate discount rate in place of the WACC is appropriate.

The participant bill savings are based on Idaho Power's 2023 average customer segment rate and are not escalated. The participant bill savings are discounted using a real discount rate of 4.71%, which is based on the 2021 IRP's WACC of 7.12% and an escalation rate of 2.3%. The real discount rate is used to calculate the NPV of any participant benefits or costs for the PCT or ratepayer impact measure (RIM) B/C ratios. The formula to calculate the real discount rate is as follows:

$$((1 + \text{WACC}) \div (1 + \text{Escalation})) - 1 = \text{Real}$$

Line-loss percentages are applied to the metered-site energy savings to find the energy savings at the generation level. The *Demand-Side Management 2023 Annual Report* shows the estimated electrical savings at the customer meter level. Cost-effectiveness analyses are based on generation-level energy savings. The demand response program reductions are reported at the generation level with the line losses. For the cost-effectiveness calculations of the energy efficiency programs, the system line-loss factor of 9.6% and the summer peak line-loss factor of 9.7% from the 2021 IRP were utilized. The line-loss percentages were re-evaluated in preparation for the 2023 IRP. This study determined that the system and peak line-loss factor is now 7.6%. Since these values were available prior to the summer demand response season, Idaho Power considered it appropriate to apply the updated 7.6% line-loss factor when reporting the generation level capacity for the demand response programs in 2023.

Conservation Adder

The *Pacific Northwest Electric Power Planning and Conservation Act* (Northwest Power Act) states the following:

...any conservation or resource shall not be treated as greater than that of any nonconservation measure or resource unless the incremental system cost of such conservation or resource is in excess of 110 per centum of the incremental system cost of the nonconservation measure or resource.

As a result of the Northwest Power Act, most utilities in the Pacific Northwest add a 10% conservation adder in energy efficiency cost-effectiveness analyses. In OPUC Order No. 94-590, the OPUC states:

We support the staff’s position that the effect of conservation in reducing uncertainty in meeting load growth is included in the ten percent cost adder and that no separate adjustment is necessary.

Additionally, in IPUC Order No. 32788 in Case No. GNR-E-12-01, “Staff noted that Rocky Mountain Power and Avista use a 10% conservation adder when calculating the cost-effectiveness of all their DSM programs.” Staff recommended the utilities have the option to use a 10% adder, and the IPUC agreed with the recommendation to allow utilities to use the 10% adder in the cost-effectiveness analyses for low-income programs.

After reviewing the practices of other utilities in the Pacific Northwest, as well as the OPUC Order No. 94-590 and IPUC Order 32788, Idaho Power applies the 10% conservation adder in all energy efficiency measure and program cost-effectiveness analyses when calculating the TRC test.

Net-to-Gross

Net-to-gross (NTG), or net-of-free-ridership (NTFR), is defined by NAPEE’s *Understanding Cost-Effectiveness of Energy Efficiency Programs* as a ratio that does the following:

Adjusts the impacts of the programs so that they only reflect those energy efficiency gains that are the result of the energy efficiency program. Therefore, the NTG deducts energy savings that would have been achieved without the efficiency program (e.g., ‘free-riders’) and increases savings for any ‘spillover’ effect that occurs as an indirect result of the program. Since the NTG attempts to measure what the customers would have done in the absence of the energy efficiency program, it can be difficult to determine precisely.

Capturing the effects of Idaho Power’s energy efficiency efforts on free-ridership and spillover is difficult. Due to the uncertainty surrounding NTG percentages, Idaho Power used an NTG of 100% for nearly all measure and program cost-effectiveness analyses.

Sensitivity analyses are conducted to show what the minimum NTG percentage needs to be for a program to remain (or become) cost-effective from either the TRC or UCT perspective. These NTG percentages are shown in the program cost-effectiveness pages of this supplement.

Results

Idaho Power calculates cost-effectiveness on a program basis and, where relevant, a measure basis. As part of *Supplement 1: Cost-Effectiveness* and where applicable, Idaho Power publishes the cost-effectiveness by measure, the PCT and RIM test at the program level, the assumptions associated with cost-effectiveness, and the sources and dates of metrics used in the cost-effectiveness calculation.

The B/C ratio from the participant cost perspective is not calculated for the Commercial Energy-Saving Kits, Educational Distributions, Home Energy Report Program, Small Business Direct Install, Weatherization Assistance for Qualified Customers (WAQC), and Weatherization Solutions for Eligible Customers programs. These programs have few or no participant-related costs. For energy efficiency programs, the cost-effectiveness analyses do not assume ongoing participant costs. However, anticipated future costs are used to develop the life-cycle cost-effectiveness analysis for the Home Energy Report Program.

This supplement contains annual cost-effectiveness metrics for each program using actual information from 2023 and includes results of the UCT, TRC, PCT, and RIM. Current customer energy rates are used in the calculation of the B/C ratios from a PCT and RIM perspective. Rate increases are not forecasted or escalated. A summary of the cost-effectiveness by program can be found in Table 4.

In 2023, most of Idaho Power's energy efficiency programs were cost-effective from the UCT perspective, except for Heating & Cooling Efficiency, Rebate Advantage, Shade Tree, Small Business Direct Install, and the two weatherization programs for income-qualified customers.

The Heating & Cooling Efficiency Program had a UCT of 0.94 and TRC of 0.40. The program's overall cost-effectiveness was impacted by the decline in overall savings for measures such as smart thermostats and air-source heat pumps. In November, the company modified the program based on the updated savings and analyzed the program with the newest avoided costs from the *2023 IRP*. With these changes, the program is anticipated to be cost-effective going forward.

Rebate Advantage had a UCT of 0.98 and a TRC of 0.93. Idaho Power used the same savings and assumptions in 2023 as were used in 2022. The decline in UCT cost-effectiveness was due to the application of the avoided costs from the *2021 IRP*. On average the benefit value declined 22% between the previous *2019 Seconded Amended IRP* and the *2021 IRP*. If the avoided costs from the *2023 IRP* are applied, the benefit value increases by approximately 12%. Therefore, the program is anticipated to be cost-effective in the 2024 program year.

Additionally, while both Heating & Cooling Efficiency and Rebate Advantage saw a decline in the UCT cost-effectiveness year over year, the TRC cost-effectiveness improved with the application of the tax credits from the *Inflation Reduction Act of 2022*.

The Shade Tree Project had a UCT of 0.31 and TRC of 0.42. In 2023, Idaho Power contracted with a third-party evaluator to perform an impact evaluation and audit of the trees that were distributed in the past. The evaluation found that while the existing calculator was acceptable for determining energy savings, the mortality rate was higher than previously estimated and that the savings needed to be adjusted for the heating impact shade trees have on electrically heated homes. Idaho Power worked with the evaluator to determine how best to model the future savings of the trees, and the evaluator reviewed Idaho Power's updated savings calculations for the trees distributed in 2023 to ensure the adjustments were applied in accordance with the recommendations outlined in the evaluation. The adjusted savings were then applied in the program's 2023 cost-effectiveness analysis. The increased energy use from electrically heated homes negated much of the cooling savings benefits from the

shade tree. In light of the evaluation results, changes will need to be made to improve the offering's cost-effectiveness. Idaho Power will work with stakeholders to develop a plan for necessary changes to the offering going forward. Finally, the cost-effectiveness ratios include the costs associated with the impact evaluation. If the evaluation costs were removed, the UCT and TRC ratios for the program would be 0.33 and 0.45, respectively.

Small Business Direct Install has a UCT of 0.97 and TRC of 1.48. The cost-effectiveness ratios include the costs associated with the impact evaluation. If the evaluation costs were removed, the UCT and TRC ratios for the program would be 1.08 and 1.64, respectively. In 2022, Idaho Power shared the cost-effectiveness challenges for the program with EEAG. These challenges include the reduced savings potential from screw-in lightbulbs and the increased costs associated with materials and labor. If the cost of this free service were to continue to rise, it would be increasingly difficult for the program to be cost-effective from the UCT perspective. As a result, the offering closed in March 2023.

WAQC had a UCT ratio of 0.14 and a TRC of 0.23, and Weatherization Solutions for Eligible Customers had a UCT ratio of 0.13 and a TRC of 0.19. The WAQC ratios include the savings and costs associated with the re-weatherization efforts. The UCT and TRC for the WAQC-only portion of the overall program are 0.16 and 0.25, respectively. The UCT and TRC for the re-weatherization efforts alone are 0.09 and 0.10, respectively.

To calculate the cost-effectiveness for the income-qualified weatherization programs, Idaho Power adopted the following IPUC staff recommendations from Case No. GNR-E-12-01:

- Applied a 100% NTG.
- Claimed 100% of energy savings for each project.
- Included indirect administrative overhead costs. The overhead costs of 2.488% were calculated from the \$1,044,428 of indirect program expenses divided by the total DSM expenses of \$41,979,473 as shown in Appendix 3 of the *Demand-Side Management 2022 Annual Report*.
- Applied the 10% conservation preference adder.
- Amortized evaluation expenses over a three-year period.
- Claimed one dollar of NEBs for each dollar of utility and federal funds invested in health, safety, and repair measures.

While the WAQC and Weatherization Solutions for Eligible Customers remain not cost-effective, Idaho Power will continue to offer the programs to the company's limited-income customers on an ongoing basis, unless the Idaho and Oregon commissions direct otherwise. Idaho Power will also continue to consult with EEAG and the weatherization managers at the Community Action Partnerships to look for ways to improve the programs' cost-effectiveness.

The sector cost-effectiveness ratios include all the benefits and costs associated with programs that produce quantifiable energy savings. The portfolio cost-effectiveness is the sum of all energy efficiency

activities, including those that do not have savings associated, such as overhead expenses. For 2023, the commercial and industrial sector had a UCT of 2.74 and TRC of 1.48, and irrigation sector had a UCT of 2.06 and TRC of 2.22. The residential and portfolio cost-effectiveness was calculated with and without the benefits associated with WAQC, which is funded through base rates and not through the energy efficiency rider. While the program provides real savings to customers that would otherwise be unable to afford to weatherize their home, it remains not cost-effective. Presenting the cost-effectiveness of the residential sector with and without WAQC remains consistent with how other Idaho utilities present their sector and portfolio cost-effectiveness results. Without WAQC, the residential sector has a UCT of 1.12 and TRC of 0.95 and the portfolio has a UCT of 2.06 and TRC of 1.51. With WAQC, the residential sector has a UCT of 0.87 and TRC of 0.74 and the portfolio has a UCT of 1.97 and TRC of 1.47.

A total of 82 out of 295 individual measures in various programs are not cost-effective from either the UCT or TRC perspective. Of the 82 measures, 12 are not cost-effective from the UCT perspective. Two measures are no longer being offered, and three measures were modified and incentives reduced to improve cost-effectiveness. Seven measures would be cost-effective without the inclusion of administration expenses.

For most of the measures offered in Oregon that fail the TRC, Idaho Power filed cost-effectiveness exception requests with the OPUC in compliance with Order No. 94-590. Measures and programs that do not pass these tests may be offered by the utility if they meet one or more of the additional conditions specified by Section 13 of Order No. 94-590. These exception requests were approved under UM-1710 or with the specific program advice filings. The filings and exception requests are noted in Table 1.

Table 1. 2023 non-cost-effective measures

| Program | Number of Measures | Number Fail UCT | Notes |
|-----------------------------------|--------------------|-----------------|---|
| Energy Efficient Lighting | 1 | 1 | Program closed in 2023 due to the implementation of federal lighting standards. |
| Heating & Cooling Efficiency | 9 | 4 | Of the four measures that fail UCT, one measure was removed from the program and three measures had incentives reduced as of November 1, 2023. All measure fail TRC. Program received a cost-effectiveness exception with Advice No. 23-11 under OPUC Order No. 94-590, Section 13. |
| Rebate Advantage | 6 | 2 | Two measures fail UCT but would be cost-effective with a UCT of 1.29 and 1.60 without the inclusion of administration costs. Four measures fail TRC. Exception request for the program requested and approved with UM-1710, Order No. 23-110. |
| Residential New Construction | 2 | 2 | One measure would be cost-effective with a UCT of 1.29 without the inclusion of administration costs. The measure is expected to be cost-effective in 2024. Idaho only program. |
| Custom Projects-Energy Management | 3 | 2 | Two offerings fail UCT and TRC but would be cost-effective under both tests without administration costs. Meets OPUC Order No. 94-590, Section 10. One cohort offering passes UCT but fails TRC without administration costs; however, participation in the cohort led to capital projects totaling 826,298 kWh paid in 2023 within CIEE. |
| New Construction and Retrofits | 3 | 0 | Three kit configurations carried over from 2021 to 2022 from inventory. Single kit configuration offered in 2022. Will monitor in-service rates to update savings. Offering to close in 2023 due to cost-effectiveness. |

| Program | Number of Measures | Number Fail UCT | Notes |
|------------------|--------------------|-----------------|---|
| New Construction | 16 | 1 | All measures pass UCT. Offered in Idaho only. One measure would be cost-effective with a TRC of 1.00 without inclusion of administration costs. |
| Retrofits | 42 | 0 | All measures offered in Idaho only. All measures pass UCT. |
| Total | 82 | 12 | |

The following tables list the annual program cost-effectiveness results including measure-level cost-effectiveness. Exceptions to the measure-level tables are programs that are analyzed at the project level, such as the Custom Projects option of the C&I Energy Efficiency Program, the Custom Incentive option of Irrigation Efficiency Rewards, Small Business Direct Install, Shade Tree Project, WAQC, and Weatherization Solutions for Eligible Customers.

The measure-level cost-effectiveness includes the following inputs: measure life, energy savings, incremental cost, incentives, program administration cost, and non-energy impacts/benefits.

Program administration costs include all non-incentive costs such as: labor, marketing, training, education, purchased services, and evaluation. Energy and expense data have been rounded to the nearest whole unit.

2023 DSM Detailed Expenses by Program

Included in this supplement is a detailed breakout of program expenses shown in Appendix 2 of the *Demand-Side Management 2023 Annual Report*. These expenses are broken out by funding source and major-expense type (labor/administration, materials, other expenses, purchased services, and incentives).

Table 2. 2023 DSM detailed expenses by program (dollars)

| Sector/Program | Idaho Rider | Oregon Rider | Idaho Power | Total Program |
|--|----------------------|-------------------|---------------------|----------------------|
| Energy Efficiency Total | \$ 21,809,569 | \$ 571,837 | \$ 1,574,189 | \$ 23,955,594 |
| Residential Total | 3,560,965 | 84,083 | 1,466,565 | 5,111,613 |
| Easy Savings: Low-Income Energy Efficiency Education... | – | – | 146,232 | 146,232 |
| Labor/Administrative Expense..... | – | – | 21,227 | 21,227 |
| Materials and Equipment | – | – | – | – |
| Other Expense | – | – | 5 | 5 |
| Purchased Services | – | – | 125,000 | 125,000 |
| Educational Distributions | 880,568 | 21,720 | – | 902,287 |
| Labor/Administrative Expense..... | 8,216 | 434 | – | 8,650 |
| Materials and Equipment | 711,365 | 16,659 | – | 728,024 |
| Other Expense | 22,085 | 1,162 | – | 23,247 |
| Purchased Services | 138,902 | 3,464 | – | 142,366 |
| Energy Efficient Lighting | 278,610 | 15,586 | (0) | 294,197 |
| Incentives | 139,391 | 8,279 | – | 147,670 |
| Labor/Administrative Expense..... | 6,761 | 357 | (0) | 7,118 |
| Other Expense | 13 | 1 | – | 14 |
| Purchased Services | 132,445 | 6,950 | – | 139,395 |
| Heating & Cooling Efficiency Program | 593,407 | 30,640 | – | 624,047 |
| Incentives | 300,454 | 15,550 | – | 316,004 |
| Labor/Administrative Expense..... | 157,114 | 8,269 | – | 165,383 |

| Sector/Program | Idaho Rider | Oregon Rider | Idaho Power | Total Program |
|--|-------------------|----------------|------------------|-------------------|
| Materials and Equipment | 40 | 2 | – | 42 |
| Other Expense | 11,961 | 572 | – | 12,533 |
| Purchased Services | 123,839 | 6,247 | – | 130,085 |
| Home Energy Audit | 230,011 | – | – | 230,011 |
| Labor/Administrative Expense | 85,842 | – | – | 85,842 |
| Materials and Equipment | 119 | – | – | 119 |
| Other Expense | 45,803 | – | – | 45,803 |
| Purchased Services | 98,246 | – | – | 98,246 |
| Home Energy Report Program | 883,505 | – | – | 883,505 |
| Incentives | 866,117 | – | – | 866,117 |
| Labor/Administrative Expense | 17,388 | – | – | 17,388 |
| Other Expense | (0) | – | – | (0) |
| Multifamily Energy Efficiency | 22,758 | 1,216 | – | 23,974 |
| Labor/Administrative Expense | 18,958 | 1,016 | – | 19,974 |
| Other Expense | 3,800 | 200 | – | 4,000 |
| Oregon Residential Weatherization | – | 7,860 | – | 7,860 |
| Labor/Administrative Expense | – | 5,029 | – | 5,029 |
| Other Expense | – | 1,683 | – | 1,683 |
| Purchased Services | – | 1,148 | – | 1,148 |
| Rebate Advantage | 130,233 | 6,867 | – | 137,100 |
| Incentives | 75,000 | 4,000 | – | 79,000 |
| Labor/Administrative Expense | 28,320 | 1,491 | – | 29,810 |
| Other Expense | 12,113 | 576 | – | 12,690 |
| Purchased Services | 14,800 | 800 | – | 15,600 |
| Residential New Construction Program | 195,102 | 194 | – | 195,296 |
| Incentives | 109,500 | – | – | 109,500 |
| Labor/Administrative Expense | 42,624 | – | – | 42,624 |
| Other Expense | 42,979 | 194 | – | 43,173 |
| Shade Tree Project | 262,344 | – | – | 262,344 |
| Labor/Administrative Expense | 45,791 | – | – | 45,791 |
| Materials and Equipment | 164 | – | – | 164 |
| Other Expense | 18,784 | – | – | 18,784 |
| Purchased Services | 197,605 | – | – | 197,605 |
| Weatherization Assistance for Qualified Customers | – | – | 1,317,041 | 1,317,041 |
| Labor/Administrative Expense | – | – | 73,212 | 73,212 |
| Other Expense | – | – | 51 | 51 |
| Purchased Services | – | – | 1,243,779 | 1,243,779 |
| Weatherization Solutions for Eligible Customers | 84,428 | – | 3,292 | 87,719 |
| Labor/Administrative Expense | 277 | – | 3,292 | 3,569 |
| Other Expense | 1,098 | – | – | 1,098 |
| Purchased Services | 83,052 | – | – | 83,052 |
| Commercial/Industrial Total | 16,773,863 | 359,926 | 1,224 | 17,135,013 |
| Commercial Energy-Saving Kits | 53,167 | 2,397 | – | 55,563 |
| Labor/Administrative Expense | 5,219 | 291 | – | 5,509 |
| Other Expense | 1,651 | 87 | – | 1,737 |
| Purchased Services | 46,297 | 2,019 | – | 48,317 |
| Custom Projects | 11,221,008 | 136,943 | 1,224 | 11,359,176 |
| Incentives | 8,795,637 | 24,929 | – | 8,820,565 |
| Labor/Administrative Expense | 471,661 | 24,850 | 1,224 | 497,735 |
| Materials and Equipment | 100 | 5 | – | 106 |

| Sector/Program | Idaho Rider | Oregon Rider | Idaho Power | Total Program |
|---|---------------------|-------------------|-------------------|---------------------|
| Other Expense | 315,308 | 28,747 | — | 344,055 |
| Purchased Services | 1,638,302 | 58,413 | — | 1,696,715 |
| New Construction | 2,139,603 | 29,033 | — | 2,168,636 |
| Incentives | 1,709,747 | 11,216 | — | 1,720,963 |
| Labor/Administrative Expense..... | 175,549 | 9,289 | — | 184,838 |
| Other Expense | 6,738 | 355 | — | 7,092 |
| Purchased Services | 247,570 | 8,174 | — | 255,743 |
| Retrofits | 3,002,681 | 182,283 | — | 3,184,964 |
| Incentives | 2,223,999 | 141,325 | — | 2,365,324 |
| Labor/Administrative Expense..... | 136,777 | 7,224 | — | 144,002 |
| Materials and Equipment | 966 | 0 | — | 966 |
| Other Expense | 9,001 | 474 | — | 9,474 |
| Purchased Services | 631,938 | 33,260 | — | 665,198 |
| Small Business Direct Install | 357,404 | 9,270 | — | 366,674 |
| Labor/Administrative Expense..... | 5,879 | 321 | — | 6,200 |
| Other Expense | 34,388 | 1,810 | — | 36,198 |
| Purchased Services | 317,137 | 7,139 | — | 324,276 |
| Irrigation Total | 1,474,741 | 127,827 | 106,399 | 1,708,967 |
| Irrigation Efficiency Rewards | 1,474,741 | 127,827 | 106,399 | 1,708,967 |
| Incentives | 1,103,512 | 108,230 | — | 1,211,742 |
| Labor/Administrative Expense..... | 301,459 | 15,997 | 106,399 | 423,854 |
| Materials and Equipment | 1,717 | 90 | — | 1,807 |
| Other Expense | 67,099 | 3,467 | — | 70,566 |
| Purchased Services | 954 | 44 | — | 998 |
| Market Transformation Total | 2,589,987 | 136,315 | — | 2,726,302 |
| NEAA | 2,589,987 | 136,315 | — | 2,726,302 |
| Purchased Services | 2,589,987 | 136,315 | — | 2,726,302 |
| Other Program and Activities Total | \$ 2,745,144 | \$ 145,761 | \$ (1,358) | \$ 2,889,547 |
| Commercial/Industrial Energy Efficiency Overhead | 890,300 | 47,055 | (1) | 937,354 |
| Labor/Administrative Expense..... | 780,642 | 41,558 | — | 822,200 |
| Other Expense | 83,299 | 4,110 | (1) | 87,408 |
| Purchased Services | 26,359 | 1,387 | — | 27,746 |
| Energy Efficiency Direct Program Overhead | 290,729 | 15,317 | — | 306,046 |
| Labor/Administrative Expense..... | 278,971 | 14,698 | — | 293,669 |
| Other Expense | 11,758 | 619 | — | 12,376 |
| Oregon Commercial Audit | — | 6,402 | — | 6,402 |
| Labor/Administrative Expense..... | — | 1,053 | — | 1,053 |
| Other Expense | — | 149 | — | 149 |
| Purchased Services | — | 5,200 | — | 5,200 |
| Residential Energy Efficiency Education Initiative | 359,242 | 13,430 | (1,357) | 371,316 |
| Labor/Administrative Expense..... | 122,565 | 6,426 | (1,357) | 127,634 |
| Materials and Equipment | 75,626 | 1,475 | — | 77,101 |
| Other Expense | 79,041 | 3,959 | — | 83,000 |
| Purchased Services | 82,011 | 1,570 | — | 83,580 |
| Residential Energy Efficiency Overhead | 1,204,872 | 63,557 | — | 1,268,429 |
| Labor/Administrative Expense..... | 256,514 | 14,307 | — | 270,821 |
| Materials and Equipment | — | (119) | — | (119) |
| Other Expense | 935,606 | 48,979 | — | 984,585 |
| Purchased Services | 12,752 | 390 | — | 13,142 |

| Sector/Program | Idaho Rider | Oregon Rider | Idaho Power | Total Program |
|--|----------------------|---------------------|----------------------|----------------------|
| Indirect Program Expenses Total | \$ 795,401 | \$ 49,410 | \$ 199,616 | \$ 1,044,428 |
| Energy Efficiency Accounting and Analysis | 952,424 | 48,461 | 199,616 | 1,200,501 |
| Labor/Administrative Expense | 437,181 | 23,019 | 189,352 | 649,553 |
| Other Expense | 37,886 | 719 | 10,264 | 48,869 |
| Purchased Services | 477,357 | 24,722 | — | 502,079 |
| Energy Efficiency Advisory Group | 14,422 | 769 | — | 15,191 |
| Labor/Administrative Expense | 11,674 | 624 | — | 12,298 |
| Other Expense | 2,749 | 145 | — | 2,894 |
| Special Accounting Entries | (171,445) | 180 | — | (171,264) |
| Labor/Administrative Expense | (175,313) | — | — | (175,313) |
| Special Accounting Entry | 3,869 | 180 | — | 4,049 |
| Demand Response Total | \$ 2,289,359 | \$ 586,078 | \$ 8,488,165 | \$ 11,363,602 |
| Residential Total | 1,536,873 | 85,060 | 365,690 | 1,987,623 |
| A/C Cool Credit | 1,536,873 | 85,060 | 365,690 | 1,987,623 |
| Incentives | — | 4,115 | 365,690 | 369,805 |
| Labor/Administrative Expense | 97,273 | 5,128 | — | 102,401 |
| Materials and Equipment | 920,136 | 48,887 | — | 969,023 |
| Other Expense | 78,971 | 3,777 | — | 82,749 |
| Purchased Services | 440,494 | 23,152 | — | 463,645 |
| Commercial/Industrial Total | 135,731 | 242,133 | 698,285 | 1,076,149 |
| Flex Peak Program | 135,731 | 242,133 | 698,285 | 1,076,149 |
| Incentives | — | 236,885 | 694,935 | 931,819 |
| Labor/Administrative Expense | 93,503 | 4,931 | 3,350 | 101,784 |
| Other Expense | 5,628 | 296 | — | 5,924 |
| Purchased Services | 36,600 | 21 | — | 36,621 |
| Irrigation Total | 616,755 | 258,884 | 7,424,190 | 8,299,830 |
| Irrigation Peak Rewards | 616,755 | 258,884 | 7,424,190 | 8,299,830 |
| Incentives | — | 231,527 | 7,394,482 | 7,626,008 |
| Labor/Administrative Expense | 161,748 | 8,568 | 29,708 | 200,024 |
| Materials and Equipment | 39,949 | 2,103 | — | 42,051 |
| Other Expense | 52,794 | 3,242 | — | 56,036 |
| Purchased Services | 362,264 | 13,445 | — | 375,709 |
| Grand Total | \$ 30,229,460 | \$ 1,489,400 | \$ 10,260,613 | \$ 41,979,473 |

Note: Total does not sum due to rounding.

Table 3. 2023 Demand response program and portfolio \$ per kW year

| Program | Max Demand Capacity (MW) | Max Demand Capacity (kW) | 2023 Expenses | 2023 Estimated Max Expenses (60 Hours) ¹ | \$ per kW year ² |
|--|--------------------------|--------------------------|---------------------|---|-----------------------------|
| A/C Cool Credit | 25.3 | 25,324 | \$1,987,623 | \$1,617,818 | \$29.93 |
| Flex Peak Programs | 38.8 | 38,827 | \$1,076,149 | \$1,413,398 | \$36.40 |
| Irrigation Peak Rewards | 252.1 | 252,066 | \$8,299,830 | \$2,429,905 | \$42.57 |
| Total Demand Response Portfolio | 316.2 | 316,217 | \$11,363,602 | \$5,461,121 | \$40.80 |

1 2023 expenses with estimated variable payments based on maximum 60 hours of operation. A/C Cool Credit Estimated Max Expenses adjusted for demand response units purchased in bulk in 2023 and transferred to overheads in 2024. Total does not sum due to rounding.

2 \$ per kW year = 2023 Estimated Max Expenses 60 Hours/Max Demand Capacity kW.

Table 4. Cost-effectiveness of 2023 programs by benefit/cost test

| Program/Sector | UCT | TRC | RIM | PCT |
|--|-------------|-------------|-------------|-------------|
| Educational Distributions | 1.76 | 2.07 | 0.50 | N/A |
| Energy Efficient Lighting ¹ | 1.69 | 1.51 | 0.44 | 4.07 |
| Heating & Cooling Efficiency Program | 0.94 | 0.40 | 0.36 | 0.88 |
| Home Energy Report Program..... | 1.32 | 1.45 | 0.49 | n/a |
| Multifamily Energy Efficiency Program ² | n/a | n/a | n/a | n/a |
| Rebate Advantage | 0.98 | 0.93 | 0.28 | 4.23 |
| Residential New Construction Program..... | 1.05 | 1.25 | 0.34 | 3.85 |
| Shade Tree Project..... | 0.31 | 0.42 | 0.27 | n/a |
| Weatherization Assistance for Qualified Customers | 0.14 | 0.23 | 0.11 | n/a |
| Weatherization Solutions for Eligible Customers | 0.13 | 0.19 | 0.10 | n/a |
| Residential Energy Efficiency Sector³..... | 1.12 | 0.95 | 0.41 | 3.38 |
| Commercial and Industrial Energy Efficiency Program | | | | |
| Custom Projects | 2.91 | 1.44 | 0.95 | 1.41 |
| New Construction | 2.78 | 2.74 | 0.70 | 3.81 |
| Retrofits | 2.35 | 1.17 | 0.68 | 1.53 |
| Commercial Energy-Saving Kits ¹ | 1.02 | 1.17 | 0.50 | n/a |
| Small Business Direct Install ⁴ | 0.97 | 1.48 | 0.47 | n/a |
| Commercial/Industrial Energy Efficiency Sector⁵..... | 2.74 | 1.48 | 0.85 | 1.63 |
| Irrigation Efficiency Rewards | 2.05 | 2.22 | 0.84 | 2.29 |
| Irrigation Energy Efficiency Sector⁶..... | 2.06 | 2.22 | 0.84 | 2.29 |
| Energy Efficiency Portfolio⁷..... | 2.06 | 1.51 | 0.75 | 1.89 |

¹ Program closed June 30, 2023.

² Program launched on November 1, 2023, and incurred costs, but no savings were realized in 2023.

³ Residential sector cost-effectiveness excludes WAQC benefits and costs. If included, the UCT, TRC, RIM, and PCT would be 0.87, 0.74, 0.37, and 2.73, respectively.

⁴ Program closed March 31, 2023.

⁵ Commercial/Industrial Energy Efficiency Sector cost-effectiveness ratios include savings and participant costs from Green Motors Rewinds.

⁶ Irrigation Energy Efficiency Sector cost-effectiveness ratios include savings and participant costs from Green Motors Rewinds.

⁷ Portfolio cost-effectiveness excludes WAQC benefits and costs. If included, the UCT, TRC, RIM, and PCT would be 1.97, 1.47, 0.73, and 1.88, respectively.

COST-EFFECTIVENESS TABLES BY PROGRAM

Educational Distributions

Segment: Residential
2023 Program Results

| Cost Inputs | | | | Ref |
|---|-----------|------------------|----|-------------|
| Program Administration | \$ | 902,287 | | |
| Program Incentives..... | | — | | I |
| Total UC | \$ | 902,287 | | P |
| | | | | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | — | | M |
| | | | | |
| Net Benefit Inputs (NPV) | | | | Ref |
| Resource Savings | | | | |
| 2023 Annual Gross Energy (kWh) | | 3,960,690 | | |
| NPV Cumulative Energy (kWh) | | 28,454,914 | \$ | 1,589,536 S |
| 10% Credit (Northwest Power Act)..... | | | | 158,954 |
| Total Electric Savings | \$ | 1,748,489 | | A |
| | | | | |
| Participant Bill Savings | | | | |
| NPV Cumulative Participant Bill Savings | \$ | 2,299,392 | | B |
| | | | | |
| Other Benefits | | | | |
| Non-Utility Rebates/Incentives..... | \$ | — | | NUI |
| NEBs | \$ | 116,677 | | NEB |

Notes: Energy savings as reported by Tinker for the 2022–2023 student kits.
NEBs for welcome kit lightbulb, and student kits include PV of periodic lightbulb replacement costs.
NEBs for student kit include the NPV of therm savings.
No participant costs.

| Summary of Cost-Effectiveness Results | | | | |
|--|-------------------------|-----------|-----------------|---------|
| Test | | Benefit | Cost | Ratio |
| UC Test..... | \$ | 1,589,536 | \$ 902,287 | 1.76 |
| TRC Test | | 1,865,167 | 902,287 | 2.07 |
| RIM Test..... | | 1,589,536 | 3,201,680 | 0.50 |
| PCT | | N/A | N/A | N/A |
| | | | | |
| Benefits and Costs Included in Each Test | | | | |
| UC Test..... | = S * NTG | | = P | |
| TRC Test | = (A + NUI + NEB) * NTG | | = P | |
| RIM Test..... | = S * NTG | | = P + (B * NTG) | |
| PCT | N/A | | N/A | |
| | | | | |
| Assumptions for Levelized Calculations | | | | |
| Discount Rate | | | | |
| Nominal (WACC)..... | | | | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | | | | 4.71% |
| Escalation Rate | | | | 2.30% |
| Net-to-Gross (NTG)..... | | | | 100% |
| Minimum NTG Sensitivity..... | | | | 57% |
| Average Customer Segment Rate/kWh | | | | \$0.087 |
| Line Losses..... | | | | 9.60% |

Year: 2023

Program: Educational Distributions

Market Segment: Residential Program Type: Energy Efficiency

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--|--|--------------------|--------------|---------------------|---------------------------------|--|------------------------------------|--------|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Student Energy Efficiency Kit (SEEK) Program | 2022–2023 kit offering. Kits include: high-efficiency showerhead, shower timer, 3 LEDs, FilterTone alarm, digital thermometer, LED nightlight. | No kit | Kit | IPC_Student Kits | 10 | 229.22 | \$115.19 | \$8.66 | – | – | \$0.178 | 2.83 | 3.32 | 1 |
| Welcome Kit Q1-Q2 2023 | Four 1,050 to 1,489 lumen general purpose lightbulbs; Two LED night lights | No kit | Kit | IPC_Welcome Kit | 10 | 43.16 | \$17.81 | \$0.33 | – | – | \$0.412 | 1.00 | 1.12 | 2, 3 |
| Welcome Kit Q3-Q4 2023 | Four 1,050 to 1,489 lumen general purpose lightbulbs (no savings); Two LED night lights | No kit | Kit | IPC_Welcome Kit | 8 | 24.00 | \$7.90 | | | | \$0.329 | 1.00 | 1.10 | 3 |
| Nightlight Give away | LED night light | baseline lightbulb | Lamp | ResLightingExterior | 8 | 12.00 | \$3.95 | – | – | – | \$0.129 | 2.56 | 2.82 | 3 |

^a Average measure life.^b Estimated kWh savings measured at the customer's meter, excluding line losses.^c NPV of DSM avoided costs. Based on end-use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 *Integrated Resource Plan*. TRC Test Benefit calculation includes 10% conservation adder from the Northwest Power Act^d No participant costs.^e Average program administration and overhead costs to achieve each kWh of savings for each initiative. Calculated from 2023 actuals.^f UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)^g TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))¹ Tinker. Idaho Power Student Energy Efficiency Kit Program. School Year 2022–2023 Annual Report. 2023.² RTF. ResLighting_Lightbulbs_v9_4.xlsm. 2021.³ DNV GL. Idaho Power Educational Distributions Impact and Process Evaluation. 2020.

Energy Efficient Lighting

Segment: Residential
2023 Program Results

| Cost Inputs | | Ref |
|---|-------------------|-----|
| Program Administration | \$ 146,527 | |
| Program Incentives..... | 147,670 | I |
| Total UC | \$ 294,197 | P |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ 255,996 | M |

| Net Benefit Inputs (NPV) | | Ref |
|--|-------------------|--------------|
| Resource Savings | | |
| 2023 Annual Gross Energy (kWh) | 883,491 | |
| NPV Cumulative Energy (kWh) | 9,670,680 | \$ 496,956 S |
| 10% Credit (Northwest Power Act)..... | 49,696 | |
| Total Electric Savings | \$ 546,652 | A |
| Participant Bill Savings | | |
| NPV Cumulative Participant Bill Savings..... | \$ 830,247 | B |
| Other Benefits | | |
| Non-Utility Rebates/Incentives..... | \$ — | NUI |
| NEBs | \$ 63,150 | NEB |

Note: NEBs include PV of periodic lightbulb replacement costs.
Program closed June 30, 2023.

| Summary of Cost-Effectiveness Results | | | |
|---------------------------------------|------------|------------|-------|
| Test | Benefit | Cost | Ratio |
| UC Test..... | \$ 496,956 | \$ 294,197 | 1.69 |
| TRC Test | 609,802 | 402,523 | 1.51 |
| RIM Test..... | 496,956 | 1,124,444 | 0.44 |
| PCT | 1,041,067 | 255,996 | 4.07 |

| Benefits and Costs Included in Each Test | | |
|--|-------------------------|---------------------|
| UC Test..... | = S * NTG | = P |
| TRC Test | = (A + NUI + NEB) * NTG | = P + ((M-I) * NTG) |
| RIM Test..... | = S * NTG | = P + (B * NTG) |
| PCT | = B + I + NUI + NEB | = M |

| Assumptions for Levelized Calculations | |
|--|---------|
| Discount Rate | |
| Nominal (WACC) | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | 4.71% |
| Escalation Rate | 2.30% |
| Net-to-Gross (NTG) | 100% |
| Minimum NTG Sensitivity..... | 59% |
| Average Customer Segment Rate/kWh | \$0.087 |
| Line Losses..... | 9.60% |

Year: 2023

Program: Energy Efficient Lighting

Market Segment: Residential

Program Type: Energy Efficiency

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--|---|--------------------|--------------|------------------------------------|---------------------------------|---|--------------------------------------|--------|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Alternate Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Decorative and Mini-Base | Retail_LED_Decorative and Mini-Base_250 to 1049 lumens | Baseline lightbulb | Fixture | Res Lighting Interior and Exterior | 13 | 4.67 | \$2.40 | \$0.32 | \$1.83 | \$1.00 | \$0.166 | 1.36 | 1.14 | 1 |
| Globe | Retail_LED_Globe_250 to 1049 lumens | Baseline lightbulb | Fixture | Res Lighting Interior and Exterior | 13 | 3.49 | \$1.80 | \$0.33 | \$2.06 | \$0.50 | \$0.166 | 1.67 | 0.87 | 1,2 |
| General Purpose, Dimmable, and Three-Way | Retail_LED_General Purpose, Dimmable, and Three-Way_1050 to 1489 lumens | Baseline lightbulb | Fixture | Res Lighting Interior and Exterior | 13 | 7.17 | \$3.69 | \$0.28 | \$1.66 | \$1.00 | \$0.166 | 1.69 | 1.52 | 1 |
| General Purpose, Dimmable, and Three-Way | Retail_LED_General Purpose, Dimmable, and Three-Way_1490 to 2600 lumens | Baseline lightbulb | Fixture | Res Lighting Interior and Exterior | 13 | 6.60 | \$3.40 | \$0.28 | \$1.81 | \$1.00 | \$0.166 | 1.62 | 1.38 | 1 |
| General Purpose, Dimmable, and Three-Way | Retail_LED_General Purpose, Dimmable, and Three-Way_250 to 1049 lumens | Baseline lightbulb | Fixture | Res Lighting Interior and Exterior | 13 | 4.50 | \$2.32 | \$0.26 | \$1.61 | \$0.50 | \$0.166 | 1.86 | 1.19 | 1 |
| Reflectors and Outdoor | Retail_LED_Reflectors and Outdoor_1050 to 1489 lumens | Baseline lightbulb | Fixture | Res Lighting Interior and Exterior | 13 | 4.14 | \$2.13 | \$0.27 | \$0.50 | \$1.00 | \$0.166 | 1.26 | 2.20 | 1 |
| Reflectors and Outdoor | Retail_LED_Reflectors and Outdoor_1490 to 2600 lumens | Baseline lightbulb | Fixture | Res Lighting Interior and Exterior | 13 | 8.84 | \$4.55 | \$0.33 | \$0.01 | \$2.00 | \$0.166 | 1.31 | 3.62 | 1 |
| Reflectors and Outdoor | Retail_LED_Reflectors and Outdoor_250 to 1049 lumens | Baseline lightbulb | Fixture | Res Lighting Interior and Exterior | 13 | 4.65 | \$2.40 | \$0.34 | \$0.59 | \$1.00 | \$0.166 | 1.35 | 2.19 | 1 |
| LED Fixture Retailer | Retail_Bathroom Vanity_1000 to 1999 lumens | Baseline fixture | Fixture | Res Lighting Interior and Exterior | 20 | 5.35 | \$3.51 | \$0.13 | \$2.17 | \$1.00 | \$0.166 | 1.86 | 1.31 | 3 |
| LED Fixture Retailer | Retail_Bathroom Vanity_2000 to 3999 lumens | Baseline fixture | Fixture | Res Lighting Interior and Exterior | 20 | 10.42 | \$6.85 | \$0.43 | \$4.24 | \$2.00 | \$0.166 | 1.84 | 1.33 | 3 |
| LED Fixture Retailer | Retail_Ceiling and Wall Flush Mount_500 to 999 lumens | Baseline fixture | Fixture | Res Lighting Interior and Exterior | 20 | 3.33 | \$2.19 | \$0.13 | \$0.93 | \$0.50 | \$0.166 | 2.08 | 1.71 | 3 |
| LED Fixture Retailer | Retail_Ceiling and Wall Flush Mount_1000 to 1999 lumens | Baseline fixture | Fixture | Res Lighting Interior and Exterior | 20 | 6.13 | \$4.03 | \$0.13 | \$1.70 | \$1.00 | \$0.166 | 2.00 | 1.68 | 3 |
| LED Fixture Retailer | Retail_Ceiling and Wall Flush Mount_2000 to 3999 lumens | Baseline fixture | Fixture | Res Lighting Interior and Exterior | 20 | 11.93 | \$7.84 | \$0.56 | \$3.32 | \$2.00 | \$0.166 | 1.97 | 1.73 | 3 |
| LED Fixture Retailer | Retail_Ceiling and Wall Flush Mount_4000 to 7999 lumens | Baseline fixture | Fixture | Res Lighting Interior and Exterior | 20 | 22.35 | \$14.68 | \$0.82 | \$6.22 | \$3.00 | \$0.166 | 2.19 | 1.71 | 3 |
| LED Fixture Retailer | Retail_Downlight Fixture_500 to 999 lumens | Baseline fixture | Fixture | Res Lighting Interior and Exterior | 20 | 2.13 | \$1.40 | \$0.13 | \$0.10 | \$1.00 | \$0.166 | 1.03 | 3.68 | 3 |
| LED Fixture Retailer | Retail_Downlight Fixture_1000 to 1999 lumens | Baseline fixture | Fixture | Res Lighting Interior and Exterior | 20 | 3.91 | \$2.57 | \$0.56 | \$0.19 | \$1.00 | \$0.166 | 1.56 | 4.04 | 3 |
| LED Fixture Retailer | Retail_Downlight Fixture_2000 to 3999 lumens | Baseline fixture | Fixture | Res Lighting Interior and Exterior | 20 | 7.62 | \$5.01 | \$0.82 | \$0.38 | \$1.00 | \$0.166 | 2.21 | 3.85 | 3 |
| LED Fixture Retailer | Retail_Exterior Porch_500 to 999 lumens | Baseline fixture | Fixture | Res Lighting Exterior | 20 | 3.38 | \$2.02 | \$0.01 | \$0.40 | \$0.75 | \$0.166 | 1.54 | 2.33 | 3 |
| LED Fixture Retailer | Retail_Exterior Porch_1000 to 1999 lumens | Baseline fixture | Fixture | Res Lighting Exterior | 20 | 6.22 | \$3.72 | \$0.26 | \$0.74 | \$1.00 | \$0.166 | 1.83 | 2.46 | 3 |

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|----------------------|---|------------------|--------------|-----------------------|---------------------------------|---|--------------------------------------|--------|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Alternate Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| LED Fixture Retailer | Retail_Exterior Porch_2000 to 3999 lumens | Baseline fixture | Fixture | Res Lighting Exterior | 20 | 12.11 | \$7.25 | \$0.39 | \$1.43 | \$3.00 | \$0.166 | 1.45 | 2.43 | 3 |
| LED Fixture Retailer | Exterior Porch_4000 to 7999 lumens | Baseline fixture | Fixture | Res Lighting Exterior | 20 | 22.68 | \$13.58 | \$0.78 | \$2.69 | \$4.00 | \$0.166 | 1.75 | 2.44 | 3 |

^a Average measure life.

^b Estimated kWh savings measured at the customer's meter, excluding line losses.

^c Sum of NPV of DSM alternate cost. Based on end-use load shape, measure life, savings including line losses, and alternate costs by pricing period as provided in the 2021 IRP. TRC test benefit calculation includes 10% conservation adder from the Northwest Power Act.

^d Incremental participant cost prior to customer incentives.

^e Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.

^f UCT Ratio = (NPV DSM Alternate Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)

^g TRC Ratio = ((NPV DSM Alternate Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))

¹ RTF: ResLighting_Lightbulbs_v9_3.xlsm. Modified baseline for grocery, dollar, mass-merchandise, and small hardware stores. 2021.

² Measure cost-effective without inclusion of admin costs

³ RTF: ResLighting_Lightbulbs_v9_3.xlsm. 2021.

Heating & Cooling Efficiency Program

Segment: Residential
2023 Program Results

| Cost Inputs | | | | Ref |
|---|-----------|----------------|-----|-----------|
| Program Administration | \$ | 308,044 | | |
| Program Incentives..... | | 316,004 | I | |
| Total UC | \$ | 624,047 | P | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | 1,679,147 | M | |
| Net Benefit Inputs (NPV) | | | | Ref |
| Resource Savings | | | | |
| 2023 Annual Gross Energy (kWh) | | 1,040,069 | | |
| NPV Cumulative Energy (kWh) | | 11,805,033 | \$ | 589,238 S |
| 10% Credit (Northwest Power Act)..... | | 58,924 | | |
| Total Electric Savings | \$ | 648,162 | A | |
| Participant Bill Savings | | | | |
| NPV Cumulative Participant Bill Savings | \$ | 1,021,593 | B | |
| Other Benefits | | | | |
| Non-Utility Rebates/Incentives..... | \$ | — | NUI | |
| NEBs | \$ | 139,308 | NEB | |

Note: Participant costs offset by tax credit available as part of the *Inflation Reduction Act of 2022*.

| Summary of Cost-Effectiveness Results | | | |
|--|-------------------------|---------------------|---------|
| Test | Benefit | Cost | Ratio |
| UC Test..... | \$ 589,238 | \$ 624,047 | 0.94 |
| TRC Test | 787,470 | 1,987,191 | 0.40 |
| RIM Test | 589,238 | 1,645,641 | 0.36 |
| PCT | 1,476,905 | 1,679,147 | 0.88 |
| Benefits and Costs Included in Each Test | | | |
| UC Test..... | = S * NTG | = P | |
| TRC Test | = (A + NUI + NEB) * NTG | = P + ((M-I) * NTG) | |
| RIM Test..... | = S * NTG | = P + (B * NTG) | |
| PCT | = B + I + NUI + NEB | = M | |
| Assumptions for Levelized Calculations | | | |
| Discount Rate | | | |
| Nominal (WACC) | | | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | | | 4.71% |
| Escalation Rate | | | 2.30% |
| Net-to-Gross (NTG) | | | 100% |
| Minimum NTG Sensitivity | | | 106% |
| Average Customer Segment Rate/kWh | | | \$0.087 |
| Line Losses..... | | | 9.60% |

Year: 2023

Program: Heating & Cooling Efficiency Program

Market Segment: Residential

Program Type: Energy Efficiency

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--|---|---|--------------|---------------------------------------|---------------------------------|---|------------------------------------|----------|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Heat Pump Conversion | Existing and New Single-Family and Manufactured Home HVAC Conversion to Heat Pump with Commissioning and Sizing (Heating & Cooling Zone Weighted Average) | Conversion to high efficiency heat pump | Unit | R-All-HVAC-ASHP-All-All-E | 18 | 3,573.08 | \$2,036.45 | – | \$6,016.22 | \$800.00 | \$0.296 | 1.10 | 0.32 | 1, 2 |
| Heat Pump Upgrade | Existing Single-Family and Manufactured Home HVAC Heat Pump Upgrade (Heating & Cooling Zone Weighted Average) | Heat pump to heat pump upgrade | Unit | R-All-HVAC-ASHP-All-All-E | 18 | 151.62 | \$86.41 | – | \$2,111.29 | \$250.00 | \$0.296 | 0.29 | 0.04 | 1, 3 |
| Open-Loop Heat Pump | Open loop water source heat pump for new construction - 14.00 EER 3.5 COP (Heating & Cooling Zone Weighted Average) | Electric resistance/ Oil Propane | Unit | R-All-HVAC-ASHP-All-All-E | 20 | 9,508.67 | \$5,724.27 | – | \$9,138.43 | \$1,000.00 | \$0.296 | 1.50 | 0.53 | 2, 4 |
| Ground-Source Heat Pump | Ground source heat pump - 3.5 COP (Heating & Cooling Zone Weighted Average) | Electric resistance/Oil Propane | Unit | R-All-HVAC-ASHP-All-All-E | 20 | 10,540.00 | \$6,345.13 | – | \$7,282.09 | \$3,000.00 | \$0.296 | 1.04 | 0.67 | 2, 4 |
| Ductless Heat Pump | Zonal to DHP. (Heating & Cooling Zone Weighted Average) | Zonal Electric | Unit | R-All-HVAC-ERconvertDHP-2023 weighted | 15 | 1,164.07 | \$454.10 | \$814.67 | \$3,088.55 | \$750.00 | \$0.296 | 0.41 | 0.38 | 5, 6 |
| Heat Pump Water Heater | Weighted average of tier 2 and tier 3, heating and cooling zone, and indoor, basement, garage install location. | Electric water heater | Unit | R-All-WH-WHConvert-All-All-N | 13 | 1,705.70 | \$946.41 | – | \$362.15 | \$300.00 | \$0.296 | 1.18 | 1.20 | 7 |
| High-Efficiency Air Conditioner | Minimum 15 SEER but <17 SEER; minimum 12 EER | Current practice baseline | Unit | R-All-HVAC-CAC-All-All-E | 18 | 56.66 | \$95.44 | – | \$110.50 | \$50.00 | \$0.296 | 1.43 | 0.82 | 2, 8 |
| High-Efficiency Air Conditioner | Minimum 17 SEER; minimum 13 EER | Current practice baseline | Unit | R-All-HVAC-CAC-All-All-E | 18 | 196.32 | \$330.70 | – | \$565.29 | \$150.00 | \$0.296 | 1.59 | 0.58 | 2, 8 |
| Evaporative Cooler | Evaporative Cooler | Central A/C | Unit | R-All-HVAC-CAC-All-All-E | 12 | 653.12 | \$871.54 | – | \$220.70 | \$150.00 | \$0.296 | 2.54 | 2.31 | 9 |
| Prescriptive Duct Sealing Single Family | Duct Tightness - PTCS Duct Sealing - Average Heating System. Weighted average of Heating Zones 1-3. | Pre-existing duct leakage | Unit | R-All-HVAC-ER-All-All-E | 20 | 436.00 | \$196.89 | – | \$526.68 | \$350.00 | \$0.296 | 0.41 | 0.33 | 6, 10 |
| Electronically Commutated Motor (ECM) Blower Motor | ECM Blower Motor | permanent split capacitor (PSC) motor | Unit | R-All-Bld-Bldg-All-All-R | 18 | 2,318.83 | \$1,451.31 | – | \$300.00 | \$50.00 | \$0.296 | 1.97 | 1.62 | 11 |
| Whole-House Fan | Whole-House Fan | Displaced forced air dx cooling | Unit | R-All-HVAC-CAC-All-All-E | 18 | 456.60 | \$769.15 | – | \$700.00 | \$200.00 | \$0.296 | 2.29 | 1.01 | 11 |

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|------------------|----------------------|--|--------------|-------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Smart Thermostat | Smart Thermostat | Non wi-fi enabled thermostat/no thermostat | Unit | R-All-HVAC-ER-All-All-E | 7 | 301.85 | \$67.90 | — | \$210.24 | \$75.00 | \$0.296 | 0.41 | 0.25 | 6, 12 |

^a Average measure life.

^b Estimated kWh savings measured at the customer's meter, excluding line losses.

^c NPV of DSM avoided costs. Based on end-use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 IRP. TRC Test Benefit calculation includes 10% conservation adder from the Northwest Power Act.

^d Incremental participant cost prior to customer incentives. Participant costs include tax credit from the *Inflation Reduction Act of 2022*.

^e Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.

^f UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)

^g TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))

¹ RTF. ResSF&MHEExistingHVAC_v6_1.xlsx. 2022. Weighted average of 2023 participants in heating and cooling zones 1-3.

² Measure not cost-effective from TRC perspective.

³ Measure removed from the offering as of November 1, 2023

⁴ RTF. ResGSHP_v2_7. 2016. Weighted average of 2023 participants in heating and cooling zones 1-3.

⁵ RTF. ResDHPforZonal_v6_1.xlsm. 2023. Weighted average of 2023 participants in heating and cooling zones 1-3.

⁶ Measure not cost-effective. Offering modified in as of November 1, 2023.

⁷ RTF. ResHPWH_v6_3.xlsm. 2023. Measure cost-effective without inclusion of admin costs.

⁸ RTF. ResEfficientCentralAC_v2_2.xlsm. 2023.

⁹ New Mexico Technical Resource Manual for the Calculation of Energy Efficiency Savings. Evaporative Cooling. Sante Fe. Discounted by 44.4% for proportion evaporative coolers replacing refrigerated air. 2019.

¹⁰ RTF. ResSFDuctSealing_v7_3.xlsm. 2023.

¹¹ Idaho Power engineering calculations based on Integrated Design Lab inputs. 2015.

¹² RTF. ResConnectedTstats_v3.1.xlsm. 2023.

Home Energy Report

Segment: Residential
2023 Program Results

| Cost Inputs | | | Ref |
|---|-----------|----------------|----------|
| Program Administration | \$ | 883,505 | |
| Program Incentives..... | | – | I |
| Total UC | \$ | 883,505 | P |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | – | M |

| Net Benefit Inputs (NPV) | | | Ref |
|--|------------|------------------|----------|
| Resource Savings | | | |
| 2023 Annual Gross Energy (kWh) | 17,659,087 | | |
| NPV Cumulative Energy (kWh) | 19,355,910 | \$ 1,161,909 | S |
| 10% Credit (Northwest Power Act)..... | | 116,191 | |
| Total Electric Savings | \$ | 1,278,100 | A |
| Participant Bill Savings | | | |
| NPV Cumulative Participant Bill Savings..... | \$ | 1,497,232 | B |
| Other Benefits | | | |
| Non-Utility Rebates/Incentives..... | \$ | – | NUI |
| NEBS | \$ | – | NEB |

| Summary of Cost-Effectiveness Results | | | | |
|---------------------------------------|----|-----------|------------|-------|
| Test | | Benefit | Cost | Ratio |
| UC Test..... | \$ | 1,161,909 | \$ 883,505 | 1.32 |
| TRC Test | | 1,278,100 | 883,505 | 1.45 |
| RIM Test..... | | 1,161,909 | 2,380,737 | 0.49 |
| PCT | | N/A | N/A | N/A |

| Benefits and Costs Included in Each Test | | | |
|--|-------------------------|-----|-----------------|
| UC Test..... | = S * NTG | | = P |
| TRC Test | = (A + NUI + NEB) * NTG | | = P |
| RIM Test..... | = S * NTG | | = P + (B * NTG) |
| PCT | | N/A | N/A |

Assumptions for Levelized Calculations

| | |
|--|---------|
| Discount Rate | |
| Nominal (WACC)..... | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | 4.71% |
| Escalation Rate | 2.30% |
| Net-to-Gross (NTG) | 100% |
| Minimum NTG Sensitivity..... | 76% |
| Average Customer Segment Rate/kWh..... | \$0.087 |
| Line Losses..... | 9.60% |

Note : 2023 savings as reported by Harris Utility Consumer Analytics is 17,737,130 Wh. Idaho Power discounting savings by 0.44% for reporting and analysis as recommended by evaluators to account for potential double-counting of savings. Percentage will be reviewed in future evaluations.

Rebate Advantage

Segment: Residential
2023 Program Results

| Cost Inputs | | | Ref |
|---|-----------|----------------|-----------|
| Program Administration | \$ | 58,100 | |
| Program Incentives..... | | 79,000 | I |
| Total UC..... | \$ | 137,100 | P |
| | | | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | 101,500 | M |
| | | | |
| Net Benefit Inputs (NPV) | | | Ref |
| Resource Savings | | | |
| 2023 Annual Gross Energy (kWh) | 214,236 | | |
| NPV Cumulative Energy (kWh) | 3,470,681 | \$ | 134,342 S |
| 10% Credit (Northwest Power Act)..... | | 13,434 | |
| Total Electric Savings..... | \$ | 147,776 | A |
| | | | |
| Participant Bill Savings | | | |
| NPV Cumulative Participant Bill Savings | \$ | 350,437 | B |
| | | | |
| Other Benefits | | | |
| Non-Utility Rebates/Incentives..... | \$ | — | NUI |
| NEBs | \$ | — | NEB |

| Summary of Cost-Effectiveness Results | | | |
|---------------------------------------|------------|------------|-------|
| Test | Benefit | Cost | Ratio |
| UC Test..... | \$ 134,342 | \$ 137,100 | 0.98 |
| TRC Test | 147,776 | 159,600 | 0.93 |
| RIM Test..... | 134,342 | 487,536 | 0.28 |
| PCT | 429,437 | 101,500 | 4.23 |

| Benefits and Costs Included in Each Test | | | |
|--|-------------------------|--|---------------------|
| UC Test..... | = S * NTG | | = P |
| TRC Test | = (A + NUI + NEB) * NTG | | = P + ((M-I) * NTG) |
| RIM Test..... | = S * NTG | | = P + (B * NTG) |
| PCT | = B + I + NUI + NEB | | = M |

Assumptions for Levelized Calculations

| Discount Rate | |
|--|---------|
| Nominal (WACC) | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | 4.71% |
| Escalation Rate | 2.30% |
| Net-to-Gross (NTG)..... | 100% |
| Minimum NTG Sensitivity | 102% |
| Average Customer Segment Rate/kWh | \$0.087 |
| Line Losses..... | 9.60% |

Note: Participant costs offset by \$2,500 tax credit available to the home builder as part of the Inflation Reduction Act of 2022, Section 45L Tax Credit for Energy Efficient New Homes.

Year: 2023

Program: Rebate Advantage

Market Segment: Residential

Program Type: Energy Efficiency

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|---|--|--|--------------|-------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| ENERGY STAR [®] manufactured home | Estar_electric_Heating Zone (HZ) 1_Cooling Zone (CZ) 3 | Manufactured home built to Housing and Urban Development (HUD) code. | Home | R-All-HVAC-ER-All-All-E | 45 | 2,070.80 | \$1,287.28 | – | \$703.09 | \$1,000.00 | \$0.271 | 0.82 | 1.12 | 1,2 |
| ENERGY STAR manufactured home | Estar_electric_HZ2_CZ1 | Manufactured home built to HUD code. | Home | R-All-HVAC-ER-All-All-E | 45 | 3,020.26 | \$1,877.50 | – | \$703.09 | \$1,000.00 | \$0.271 | 1.03 | 1.36 | 1 |
| ENERGY STAR manufactured home | Estar_electric_HZ2_CZ2 | Manufactured home built to HUD code. | Home | R-All-HVAC-ER-All-All-E | 45 | 3,022.11 | \$1,878.65 | – | \$703.09 | \$1,000.00 | \$0.271 | 1.03 | 1.36 | 1 |
| ENERGY STAR manufactured home | Estar_electric_HZ2_CZ3 | Manufactured home built to HUD code. | Home | R-All-HVAC-ER-All-All-E | 45 | 3,024.85 | \$1,880.35 | – | \$703.09 | \$1,000.00 | \$0.271 | 1.03 | 1.36 | 1 |
| ENERGY STAR manufactured home | Estar_electric_HZ3_CZ1 | Manufactured home built to HUD code. | Home | R-All-HVAC-ER-All-All-E | 45 | 3,819.13 | \$2,374.10 | – | \$703.09 | \$1,000.00 | \$0.271 | 1.17 | 1.50 | 1 |
| Northwest Energy Efficient Manufactured (NEEM) home | NEEM_electric_HZ1_CZ3 | Manufactured home built to HUD code. | Home | R-All-HVAC-ER-All-All-E | 43 | 2,612.39 | \$1,604.21 | – | \$2,800.82 | \$1,000.00 | \$0.271 | 0.94 | 0.50 | 1, 2, 3 |
| NEEM home | NEEM_electric_HZ2_CZ1 | Manufactured home built to HUD code. | Home | R-All-HVAC-ER-All-All-E | 43 | 3,733.25 | \$2,292.50 | – | \$2,800.82 | \$1,000.00 | \$0.271 | 1.14 | 0.66 | 1, 3 |
| NEEM home | NEEM_electric_HZ2_CZ2 | Manufactured home built to HUD code. | Home | R-All-HVAC-ER-All-All-E | 43 | 3,735.67 | \$2,293.99 | – | \$2,800.82 | \$1,000.00 | \$0.271 | 1.14 | 0.66 | 1, 3 |
| NEEM home | NEEM_electric_HZ2_CZ3 | Manufactured home built to HUD code. | Home | R-All-HVAC-ER-All-All-E | 43 | 3,739.15 | \$2,296.13 | – | \$2,800.82 | \$1,000.00 | \$0.271 | 1.14 | 0.66 | 1, 3 |
| NEEM home | NEEM_electric_HZ3_CZ1 | Manufactured home built to HUD code. | Home | R-All-HVAC-ER-All-All-E | 44 | 4,679.39 | \$2,891.60 | – | \$2,800.82 | \$1,000.00 | \$0.271 | 1.27 | 0.78 | 1, 3 |

^a Average measure life.^b Estimated kWh savings measured at the customer's meter, excluding line losses.^c NPV of DSM avoided costs. Based on end-use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 IRP. TRC Test Benefit calculation includes 10% conservation adder from the Northwest Power Act.^d Incremental participant cost prior to customer incentives. Participant costs include tax credit from the Inflation Reduction Act of 2022.^e Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.^f UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)^g TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))^h RTF: NewMHNewHomesandHVAC_v5_1.xlsm. 2023.ⁱ Measure cost-effective from UCT perspective without the inclusion of admin expenses^j Measure not cost-effective from TRC perspective.

Residential New Construction Program

Segment: Residential
2023 Program Results

| Cost Inputs | | | | Ref |
|---|-----------|----------------|----------|-----|
| Program Administration | \$ | 85,796 | | |
| Program Incentives..... | | 109,500 | I | |
| Total UC..... | \$ | 195,296 | P | |
| | | | | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | 155,672 | M | |
| | | | | |
| Net Benefit Inputs (NPV) | | | | Ref |
| Resource Savings | | | | |
| 2023 Annual Gross Energy (kWh) | | 234,945 | | |
| NPV Cumulative Energy (kWh) | 3,926,534 | \$ | 204,177 | S |
| 10% Credit (Northwest Power Act)..... | | 20,418 | | |
| Total Electric Savings..... | \$ | 224,595 | A | |
| | | | | |
| Participant Bill Savings | | | | |
| NPV Cumulative Participant Savings..... | \$ | 412,053 | B | |
| | | | | |
| Other Benefits | | | | |
| Non-Utility Rebates/Incentives..... | \$ | – | NUI | |
| NEBs | \$ | 77,553 | NEB | |

| Summary of Cost-Effectiveness Results | | | | |
|---------------------------------------|----|---------|------------|-------|
| Test | | Benefit | Cost | Ratio |
| UC Test..... | \$ | 204,177 | \$ 195,296 | 1.05 |
| TRC Test | | 302,149 | 241,468 | 1.25 |
| RIM Test..... | | 204,177 | 607,349 | 0.34 |
| PCT | | 599,106 | 155,672 | 3.85 |

| Benefits and Costs Included in Each Test | | | | |
|--|-------------------------|--|---------------------|--|
| UC Test..... | = S * NTG | | = P | |
| TRC Test | = (A + NUI + NEB) * NTG | | = P + ((M-I) * NTG) | |
| RIM Test..... | = S * NTG | | = P + (B * NTG) | |
| PCT | = B + I + NUI + NEB | | = M | |

Assumptions for Levelized Calculations

| Discount Rate | |
|--|---------|
| Nominal (WACC)..... | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | 4.71% |
| Escalation Rate | 2.30% |
| Net-to-Gross (NTG)..... | 100% |
| Minimum NTG Sensitivity..... | 95% |
| Average Customer Segment Rate/kWh..... | \$0.087 |
| Line Losses..... | 9.60% |

Notes: 2018 International Energy Conservation Code (IECC) with amendments adopted in Idaho in 2021.

2023 cost-effectiveness ratios include evaluation expenses. If evaluation expense were removed from the program's cost-effectiveness, the UCT and TRC would be 1.23 and 1.42, respectively.

Participant costs offset by \$2,500 tax credit available to the home builder as part of the Inflation Reduction Act of 2022, Section 45L Tax Credit for Energy Efficient New Homes.

Year: 2023

Program: Residential New Construction Program

Market Segment: Residential Program Type: Energy Efficiency

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--|--|---|--------------|-------------------|---------------------------------|---|------------------------------------|------------|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Next Step Home - 10% to 14.99% above code | Next Step Home - average per home savings. | Home built to International Energy Conservation Code 2018 Code. Adopted 2021. | Home | Prog_ ResNewConst | 56 | 1,186.28 | \$1,025.14 | \$1,068.51 | \$2,886.70 | \$1,200.00 | \$0.365 | 0.63 | 0.66 | 1, 2 |
| Next Step Home - 15% to 19.99% above code | Next Step Home - average per home savings. | Home built to International Energy Conservation Code 2018 Code. Adopted 2021. | Home | Prog_ ResNewConst | 59 | 2,218.83 | \$1,933.29 | \$1,178.81 | \$1,504.36 | \$1,500.00 | \$0.365 | 0.84 | 1.43 | 1 |
| Next Step Home - 20% or more above code ^h | Next Step Home - average per home savings. | Home built to International Energy Conservation Code 2018 Code. Adopted 2021. | Home | Prog_ ResNewConst | 58 | 5,171.12 | \$4,493.93 | \$1,286.06 | \$2,318.36 | \$2,000.00 | \$0.365 | 1.16 | 1.48 | 1 |

^a Average measure life.^b Estimated kWh savings measured at the customer's meter, excluding line losses.^c NPV of DSM avoided costs. Based on end-use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 IRP. TRC Test Benefit calculation includes 10% conservation adder from the Northwest Power Act.^d Incremental participant cost prior to customer incentives. Participant costs include tax credit from the Inflation Reduction Act of 2022.^e Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.^f UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)^g TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))^h NEEA circuit rider code enforcement initiative. 2023 average per home savings. Costs and NEBs from RTF. RESNCMTHouse_ID_v3_1_.xls. 2019.ⁱ Measure not cost-effective. Will be monitored in 2024.

Shade Tree Project

Segment: Residential
2023 Program Results

| Cost Inputs | | | Ref |
|---|-----------|----------------|----------|
| Program Administration | \$ | 262,344 | |
| Program Incentives..... | | – | I |
| Total UC | \$ | 262,344 | P |
| | | | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | – | M |
| | | | |
| Net Benefit Inputs (NPV) | | | Ref |
| Resource Savings | | | |
| 2023 Annual Gross Energy (kWh) from 2019 plantings..... | 11,199 | | |
| Cumulative Energy (kWh) from 2023 plantings..... | 820,035 | | |
| NPV Cumulative Energy (kWh) | 164,533 | \$ | 65,919 S |
| 10% Credit (Northwest Power Act)..... | | | 6,592 |
| Total Electric Savings | \$ | 72,510 | A |
| | | | |
| Participant Bill Savings | | | |
| NPV Cumulative Participant Bill Savings | \$ | 32,504 | B |
| | | | |
| Other Benefits | | | |
| Non-Energy Impacts (Therms)..... | \$ | (11,466) | NEI |
| NEBs | \$ | 34,262 | NEB |

| Summary of Cost-Effectiveness Results | | | |
|---------------------------------------|-----------|------------|-------|
| Test | Benefit | Cost | Ratio |
| UC Test..... | \$ 81,739 | \$ 262,344 | 0.31 |
| TRC Test | 109,957 | 262,344 | 0.42 |
| RIM Test..... | 81,739 | 302,649 | 0.27 |
| PCT | N/A | N/A | N/A |

| Benefits and Costs Included in Each Test | | | |
|--|-------------------------|--|-----------------|
| UC Test..... | = S * NTG | | = P |
| TRC Test | = ((A + NEI) * NTG)+NEB | | = P |
| RIM Test..... | = S * NTG | | = P + (B * NTG) |
| PCT | N/A | | N/A |

Assumptions for Levelized Calculations

| | |
|--|---------|
| Discount Rate | |
| Nominal (WACC) | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | 4.71% |
| Escalation Rate | 2.30% |
| Net-to-Gross (NTG) | 124% |
| Minimum NTG Sensitivity | 396% |
| Average Customer Segment Rate/kWh | \$0.087 |
| Line Losses..... | 9.60% |

Note: Annual Report shows incremental savings from the 2019 planting year. Cost-effectiveness based on the trees distributed in 2023 to coincide with the 2023 financials.
 Net-to-gross factor of 124% applied to energy savings and therm impacts to account for trees shading neighboring homes per evaluator's recommendation.
 Non-energy impacts include costs associated with increased home heating energy. Other non-energy benefits associated with air quality, stormwater runoff, and carbon dioxide.
 2023 cost-effectiveness ratios include evaluation expenses. If evaluation expense were removed from the program's cost-effectiveness, the UCT and TRC would be 0.33 and 0.45, respectively.

Weatherization Assistance for Qualified Customers

Segment: Residential
2023 Program Results

| Summary of Cost-Effectiveness Results | | | | | |
|--|-------------------------|---------|----------------------|-----------|---------|
| Test | Benefit | | Cost | Ratio | |
| Total | | | | | |
| UC Test..... | \$ | 194,716 | \$ | 1,361,613 | 0.14 |
| TRC Test | | 489,805 | | 2,159,840 | 0.23 |
| RIM Test..... | | 194,716 | | 1,804,971 | 0.11 |
| PCT | | N/A | | N/A | N/A |
| WAQC Only | | | | | |
| UC Test..... | \$ | 162,992 | \$ | 994,392 | 0.16 |
| TRC Test | | 454,910 | | 1,792,619 | 0.25 |
| RIM Test..... | | 162,992 | | 1,365,518 | 0.12 |
| PCT | | N/A | | N/A | N/A |
| Re-weatherization Only | | | | | |
| UC Test..... | \$ | 31,724 | \$ | 367,220 | 0.09 |
| TRC Test | | 34,896 | | 367,220 | 0.10 |
| RIM Test..... | | 31,724 | | 439,453 | 0.07 |
| PCT | | N/A | | N/A | N/A |
| Benefits and Costs Included in Each Test | | | | | |
| UC Test..... | = S * NTG | | = P + OH | | |
| TRC Test | = (A + NUI + NEB) * NTG | | = P + OH + M | | |
| RIM Test..... | = S * NTG | | = P + OH + (B * NTG) | | |
| PCT | N/A | | N/A | | |
| Assumptions for Levelized Calculations | | | | | |
| Discount Rate | | | | | |
| Nominal (WACC)..... | | | | | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | | | | | 4.71% |
| Escalation Rate | | | | | 2.30% |
| Net-to-Gross (NTG) | | | | | 100% |
| Minimum NTG Sensitivity | | | | | 699% |
| Average Customer Segment Rate/kWh | | | | | \$0.087 |
| Line Losses..... | | | | | 9.60% |

| Cost Inputs | WAQC Only | Re-Weatherization | Total | Ref | |
|--|-----------|-------------------|---------|-------------|-----|
| Program Administration | \$ | \$156,955 | 32,573 | 189,528 | P |
| Community Action Partnership (CAP) Agency Payments | | \$813,298 | 325,732 | 1,139,030 | |
| Total UC | \$ | \$970,253 | 358,306 | \$1,328,558 | |
| Accruals/Reversal of Carryover Dollars | | (11,517) | – | (11,517) | |
| Total Program Expenses..... | | 958,736 | 358,306 | 1,317,041 | |
| Idaho Power Indirect Overhead Expense Allocation—2.488%..... | \$ | 24,140 | 8,915 | 33,055 | OH |
| Additional State Funding | | 798,227 | – | 798,227 | M |
| | | | | | |
| Net Benefit Inputs (NPV) | WAQC Only | Re-Weatherization | Total | Ref | |
| Resource Savings | | | | | |
| 2023 Annual Gross Energy (kWh) | | 263,060 | 51,200 | 314,260 | S |
| NPV Cumulative Energy (kWh) | \$ | 3,909,144 | 760,846 | 4,669,990 | |
| Avoided Costs | \$ | 162,992 | 31,724 | 194,716 | |
| 10% Credit (Northwest Power Act)..... | \$ | 16,299 | 3,172 | 19,472 | |
| Total Electric Savings..... | \$ | 179,292 | 34,896 | 214,187 | A |
| Participant Bill Savings | | | | | |
| NPV Cumulative Participant Bill Savings | \$ | 371,125 | 72,233 | 443,358 | B |
| Other Benefits | | | | | |
| Non-Utility Rebates/Incentives..... | \$ | – | – | – | NUI |
| NEBs | | | | | |
| Health and Safety | \$ | 271,167 | – | 271,167 | |
| Repair | | 4,451 | – | 4,451 | |
| Other | | – | – | – | |
| NEBs Total..... | \$ | 275,618 | – | 275,618 | NEB |

Notes: Savings updated in 2020 and based on a billing analysis of the 2016–2018 weatherization projects.
Program cost-effectiveness incorporated IPUC staff recommendations from case GNR-E-12-01. Recommendations include: Claimed 100% of savings; increased NTG to 100%; added a 10% conservation preference adder; health, safety, and repair NERs; and allocation of indirect overhead

Notes: Savings updated in 2020 and based on a billing analysis of the 2016–2018 weatherization projects. Program cost-effectiveness incorporated IPUC staff recommendations from case GNR-E-12-01. Recommendations include: Claimed 100% of savings; increased NTG to 100%; added a 10% conservation preference adder; health, safety, and repair NEBs; and allocation of indirect overhead expenses.
No customer participant costs. Costs shown are from the DOE state weatherization assistance program.

Weatherization Solutions for Eligible Customers

Segment: Residential
2023 Program Results

| Cost Inputs | | Ref |
|---|------------------|-----|
| Program Administration | \$ 12,644 | |
| Weatherization LLC Payments | 75,075 | |
| Total Program Expenses | \$ 87,719 | |
| Total UC | \$ 87,719 | P |
| Idaho Power Indirect Overhead Expense Allocation—2.488% | 2,182 | OH |
| Additional State Funding | — | M |

| Net Benefit Inputs (NPV) | | Ref |
|---|------------------|-------------|
| Resource Savings | | |
| 2023 Annual Gross Energy (kWh) | 18,184 | |
| NPV Cumulative Energy (kWh) | 270,219 | \$ 11,267 S |
| 10% Credit (Northwest Power Act) | 1,127 | |
| Total Electric Savings | \$ 12,394 | A |
| Participant Bill Savings | | |
| NPV Cumulative Participant Bill Savings | \$ 25,654 | B |
| Other Benefits | | |
| Non-Utility Rebates/Incentives | \$ — | NUI |
| NEBs | | |
| Health and Safety | 1,695 | |
| Repair | 2,195 | |
| Other | 809 | |
| NEBs Total | \$ 4,699 | NEB |

Notes: Savings updated in 2020 and based on a billing analysis of the 2016–2018 weatherization projects.

Program cost-effectiveness incorporated IPUC staff recommendations from case GNR-E-12-01. Recommendations include: Claimed 100% of savings; increased NTG to 100%; added a 10% conservation preference adder; health, safety, and repair NEBs; and allocation of indirect overhead expenses.

No customer participant costs.

Summary of Cost-Effectiveness Results

| Test | Benefit | Cost | Ratio |
|----------------|-----------|-----------|-------|
| UC Test | \$ 11,267 | \$ 89,902 | 0.13 |
| TRC Test | 17,093 | 89,902 | 0.19 |
| RIM Test | 11,267 | 115,556 | 0.10 |
| PCT | N/A | N/A | N/A |

Benefits and Costs Included in Each Test

| | | |
|----------------|-------------------------|----------------------|
| UC Test | = S * NTG | = P + OH |
| TRC Test | = (A + NUI + NEB) * NTG | = P + OH + M |
| RIM Test | = S * NTG | = P + OH + (B * NTG) |
| PCT | N/A | N/A |

Assumptions for Levelized Calculations

Discount Rate

| | |
|--|---------|
| Nominal (WACC) | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | 4.71% |
| Escalation Rate | 2.30% |
| Net-to-Gross (NTG) | 100% |
| Minimum NTG Sensitivity | 798% |
| Average Customer Segment Rate/kWh | \$0.087 |
| Line Losses | 9.60% |

Commercial Energy-Saving Kits

Segment: Commercial
2023 Program Results

| Cost Inputs | | | Ref |
|---|-----------|---------------|----------|
| Program Administration | \$ | 55,563 | |
| Program Incentives | | — | I |
| Total UC | \$ | 55,563 | P |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | — | M |

| Net Benefit Inputs (NPV) | | | | Ref |
|---|-----------|-----------|---------------|----------|
| Resource Savings | | | | |
| 2023 Annual Gross Energy (kWh) | 190,827 | | | |
| NPV Cumulative Energy (kWh) | 1,093,906 | \$ | 56,567 | S |
| 10% Credit (Northwest Power Act) | | | 5,657 | |
| Total Electric Savings | | \$ | 62,224 | A |
| Participant Bill Savings | | | | |
| NPV Cumulative Participant Bill Savings | | \$ | 58,418 | B |
| Other Benefits | | | | |
| Non-Utility Rebates/Incentives | | \$ | — | NUI |
| NEBs | | \$ | 3,055 | NEB |

| Summary of Cost-Effectiveness Results | | | | |
|---------------------------------------|----|---------|-----------|-------|
| Test | | Benefit | Cost | Ratio |
| UC Test | \$ | 56,567 | \$ 55,563 | 1.02 |
| TRC Test | | 65,280 | 55,563 | 1.17 |
| RIM Test | | 56,567 | 113,982 | 0.50 |
| PCT | | N/A | N/A | N/A |

| Benefits and Costs Included in Each Test | | | | |
|--|-------------------------|--|-----------------|--|
| UC Test | = S * NTG | | = P | |
| TRC Test | = (A + NUI + NEB) * NTG | | = P | |
| RIM Test | = S * NTG | | = P + (B * NTG) | |
| PCT | N/A | | N/A | |

Assumptions for Levelized Calculations

| | |
|--|---------|
| Discount Rate | |
| Nominal (WACC) | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | 4.71% |
| Escalation Rate | 2.30% |
| Net-to-Gross (NTG) | 100% |
| Minimum NTG Sensitivity | 98% |
| Average Customer Segment Rate/kWh | \$0.058 |
| Line Losses | 9.60% |

Notes: NEBs include PV of periodic lightbulb replacement costs for direct-install LED lightbulbs and water, waste water, and therm savings from water-saving devices.
Program closed June 30, 2023.

Year: 2023

Program: Commercial Energy-Saving Kits

Market Segment: Commercial

Program Type: Energy Efficiency

| Measure Name | | | | | | Benefit | | | Cost | | | B/C Tests | | Source/Notes |
|----------------|--|--------|-----|-------------|---|---|------------------------------------|--------|---|----------------|----------------------------------|------------------------|------------------------|--------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^a | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Commercial ESK | 2-9W LEDs, 2-8W LED BR30s, 1-bathroom aerator, 1-kitchen aerator, 1-exit sign retrofit | No kit | Kit | IPC_CSK_All | 6 | 170.84 | \$50.64 | \$2.74 | – | – | \$0.291 | 1.02 | 1.17 | 1 |

^a Average measure life.^b Estimated kWh savings measured at the customer's meter, excluding line losses.^c NPV of DSM avoided costs. Based on end-use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 IRP. TRC Test Benefit calculation includes 10% conservation adder from the Northwest Power Act.^d Incremental participant cost prior to customer incentives.^e Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.^f UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)^g TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))^h Estimated savings based on average hours of use by building type and self reported electric water heat saturations. Hours of use from TRM. Installations rates from 2022 evaluation.

Custom Projects

Segment: Industrial
2023 Program Results

| Cost Inputs | | | | Ref |
|---|-----------|-------------------|----------|--------------|
| Program Administration | \$ | 2,538,611 | | |
| Program Incentives..... | | 8,820,565 | I | |
| Total UC..... | \$ | 11,359,176 | P | |
| | | | | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | 23,689,808 | M | |
| | | | | |
| Net Benefit Inputs (NPV) | | | | Ref |
| Resource Savings | | | | |
| 2023 Annual Gross Energy (kWh) | | 60,667,088 | | |
| NPV Cumulative Energy (kWh) | | 637,787,255 | \$ | 33,011,082 S |
| 10% Credit (Northwest Power Act)..... | | 3,301,108 | | |
| Total Electric Savings..... | \$ | 36,312,191 | A | |
| | | | | |
| Participant Bill Savings | | | | |
| NPV Cumulative Participant Savings..... | \$ | 23,207,895 | B | |
| | | | | |
| Other Benefits | | | | |
| Non-Utility Rebates/Incentives..... | \$ | — | NUI | |
| NEBs | \$ | 1,393,885 | NEB | |

| Summary of Cost-Effectiveness Results | | | |
|---------------------------------------|---------------|---------------|-------|
| Test | Benefit | Cost | Ratio |
| UC Test..... | \$ 33,011,082 | \$ 11,359,176 | 2.91 |
| TRC Test | 37,706,076 | 26,228,419 | 1.44 |
| RIM Test..... | 33,011,082 | 34,567,071 | 0.95 |
| PCT | \$33,422,345 | 23,689,808 | 1.41 |

| Benefits and Costs Included in Each Test | | | |
|--|-------------------------|---------------------|--|
| UC Test..... | = S * NTG | = P | |
| TRC Test | = (A + NUI + NEB) * NTG | = P + ((M-I) * NTG) | |
| RIM Test..... | = S * NTG | = P + (B * NTG) | |
| PCT | = B + I + NUI + NEB | = M | |

Assumptions for Levelized Calculations

| Discount Rate | |
|--|---------|
| Nominal (WACC) | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | 4.71% |
| Escalation Rate | 2.30% |
| Net-to-Gross (NTG)..... | 100% |
| Minimum NTG Sensitivity | 34% |
| Average Customer Segment Rate/kWh | \$0.037 |
| Line Losses..... | 9.60% |

Notes: Energy savings are unique by project and are reviewed by Idaho Power engineering staff or third-party consultants. Each project must complete a certification inspection.
Green Rewind initiative is available to agricultural, commercial, and industrial customers. Commercial and industrial motor rewinds are paid under Custom Projects, but the savings are not included in the program cost-effectiveness.
Green Rewind savings are included in the sector cost-effectiveness.
NEB/impacts on a \$/kWh for each end-use. Based on 2019 impact evaluation of other C&I programs.

Year: 2023

Program: Custom Projects

Market Segment: Industrial

Program Type: Energy Efficiency

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--|--|--------------------------|--------------|------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Green Motors Program Rewind: Motor size 15 HP | Green Motors Program Rewind: Motor size 15 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 7 | 525.20 | \$183.39 | – | \$164.20 | \$15.00 | \$0.044 | 4.79 | 1.08 | 1 |
| Green Motors Program Rewind: Motor size 20 HP | Green Motors Program Rewind: Motor size 20 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 7 | 702.77 | \$245.40 | – | \$183.19 | \$20.00 | \$0.044 | 4.80 | 1.26 | 1 |
| Green Motors Program Rewind: Motor size 25 HP | Green Motors Program Rewind: Motor size 25 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 893.48 | \$344.26 | – | \$209.31 | \$25.00 | \$0.044 | 5.33 | 1.52 | 1 |
| Green Motors Program Rewind: Motor size 30 HP | Green Motors Program Rewind: Motor size 30 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 962.42 | \$370.82 | – | \$229.88 | \$30.00 | \$0.044 | 5.10 | 1.50 | 1 |
| Green Motors Program Rewind: Motor size 40 HP | Green Motors Program Rewind: Motor size 40 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 1,120.77 | \$431.83 | – | \$280.92 | \$40.00 | \$0.044 | 4.81 | 1.44 | 1 |
| Green Motors Program Rewind: Motor size 50 HP | Green Motors Program Rewind: Motor size 50 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 1,206.18 | \$464.74 | – | \$310.99 | \$50.00 | \$0.044 | 4.49 | 1.40 | 1 |
| Green Motors Program Rewind: Motor size 60 HP | Green Motors Program Rewind: Motor size 60 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 1,268.50 | \$488.75 | – | \$366.78 | \$60.00 | \$0.044 | 4.20 | 1.27 | 1 |
| Green Motors Program Rewind: Motor size 75 HP | Green Motors Program Rewind: Motor size 75 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 1,305.49 | \$503.01 | – | \$396.46 | \$75.00 | \$0.044 | 3.79 | 1.22 | 1 |
| Green Motors Program Rewind: Motor size 100 HP | Green Motors Program Rewind: Motor size 100 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 1,723.08 | \$663.90 | – | \$491.81 | \$100.00 | \$0.044 | 3.76 | 1.29 | 1 |
| Green Motors Program Rewind: Motor size 125 HP | Green Motors Program Rewind: Motor size 125 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 1,990.39 | \$766.90 | – | \$490.22 | \$125.00 | \$0.044 | 3.60 | 1.46 | 1 |
| Green Motors Program Rewind: Motor size 150 HP | Green Motors Program Rewind: Motor size 150 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 2,366.02 | \$911.63 | – | \$546.05 | \$150.00 | \$0.044 | 3.58 | 1.54 | 1 |
| Green Motors Program Rewind: Motor size 200 HP | Green Motors Program Rewind: Motor size 200 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 3,138.34 | \$1,209.20 | – | \$657.37 | \$200.00 | \$0.044 | 3.57 | 1.67 | 1 |
| Green Motors Program Rewind: Motor size 250 HP | Green Motors Program Rewind: Motor size 250 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 3,798.53 | \$1,463.58 | – | \$844.89 | \$250.00 | \$0.044 | 3.50 | 1.59 | 1 |
| Green Motors Program Rewind: Motor size 300 HP | Green Motors Program Rewind: Motor size 300 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 4,534.67 | \$1,747.21 | – | \$854.01 | \$300.00 | \$0.044 | 3.49 | 1.82 | 1 |
| Green Motors Program Rewind: Motor size 350 HP | Green Motors Program Rewind: Motor size 350 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 5,286.56 | \$2,036.92 | – | \$895.10 | \$350.00 | \$0.044 | 3.49 | 1.98 | 1 |

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--|--|--------------------------|--------------|---------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Green Motors Program Rewind: Motor size 400 HP | Green Motors Program Rewind: Motor size 400 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 5,994.15 | \$2,309.55 | – | \$999.75 | \$400.00 | \$0.044 | 3.47 | 2.01 | 1 |
| Green Motors Program Rewind: Motor size 450 HP | Green Motors Program Rewind: Motor size 450 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 6,732.12 | \$2,593.89 | – | \$1,092.80 | \$450.00 | \$0.044 | 3.47 | 2.05 | 1 |
| Green Motors Program Rewind: Motor size 500 HP | Green Motors Program Rewind: Motor size 500 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 7,490.56 | \$2,886.12 | – | \$1,180.59 | \$500.00 | \$0.044 | 3.47 | 2.10 | 1 |
| Green Motors Program Rewind: Motor size 600 HP | Green Motors Program Rewind: Motor size 600 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 10,137.37 | \$3,905.94 | – | \$1,776.70 | \$600.00 | \$0.044 | 3.72 | 1.93 | 1 |
| Green Motors Program Rewind: Motor size 700 HP | Green Motors Program Rewind: Motor size 700 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 11,776.73 | \$4,537.58 | – | \$1,938.36 | \$700.00 | \$0.044 | 3.71 | 2.03 | 1 |
| Green Motors Program Rewind: Motor size 800 HP | Green Motors Program Rewind: Motor size 800 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 13,430.58 | \$5,174.81 | – | \$2,150.67 | \$800.00 | \$0.044 | 3.71 | 2.07 | 1 |
| Green Motors Program Rewind: Motor size 900 HP | Green Motors Program Rewind: Motor size 900 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 15,077.39 | \$5,809.33 | – | \$2,371.02 | \$900.00 | \$0.044 | 3.70 | 2.10 | 1 |
| Green Motors Program Rewind: Motor size 1,000 HP | Green Motors Program Rewind: Motor size 1,000 HP | Standard rewind practice | Motor | I-All-Other-Shift2-All-All-S | 8 | 16,681.86 | \$6,427.53 | – | \$2,555.22 | \$1,000.00 | \$0.044 | 2.55 | 1.73 | 1 |
| Continuous Energy Improvement Cohort for Schools | Strategic energy management offering | No change | Participant | Commercial-School-Misc | 1 | 75,405.00 | \$3,556.40 | – | \$48,889.00 | \$1,885.13 | \$0.044 | 0.68 | 0.07 | 2, 3 |
| Water Supply Optimization Cohort | Strategic energy management offering | No change | Participant | I-WaterSupply-Mot-All-All-All-U | 1 | 553,108.00 | \$31,472.45 | – | \$2,489.75 | \$1,742.82 | \$0.044 | 1.20 | 1.28 | 2, 4 |
| Find & Fix | Energy management offering | No change | Participant | I-All-SecTotal-All-All-All-E | 1 | 591,263.00 | \$33,956.64 | – | \$12,375.00 | \$11,766.83 | \$0.044 | 0.89 | 0.97 | 2, 4 |
| Compressed Air Leak Repairs | Energy management offering | No change | Participant | I-All-SecTotal-All-All-All-E | 1 | 5,190,646.00 | \$298,102.36 | – | \$114,415.49 | \$98,464.44 | \$0.044 | 0.91 | 0.95 | 2, 4 |
| Facility Tune up | Energy management offering | No change | Participant | I-All-SecTotal-All-All-All-E | 1 | 1,150,703.00 | \$66,085.66 | – | \$9,000.00 | \$9,000.00 | \$0.044 | 1.10 | 1.21 | 2, 4 |

^a Average measure life.

^b Estimated kWh savings measured at the customer's meter, excluding line losses.

^c NPV of DSM avoided costs. Based on end-use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 IRP. TRC Test Benefit calculation includes 10% conservation adder from the Northwest Power Act.

^d Incremental participant cost prior to customer incentives.

^e Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.

^f UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)

^g TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))

¹ RTF: Ind_and_Ag_GreenMotorRewind_v4_0.xlsm. 2022.

² 2023 total cohort savings.

³ Offering cost-effective from UCT perspective without inclusion of admin costs. Participation in the cohort lead to capital projects totaling 826,298 kWh paid in 2023 within CIEE.

⁴ Offering cost-effective from UCT and TRC perspective without inclusion of admin costs.

New Construction

Segment: Commercial
2023 Program Results

| Cost Inputs | | | Ref |
|---|-----------|------------------|----------|
| Program Administration | \$ | 447,674 | |
| Program Incentives..... | | 1,720,963 | I |
| Total UC..... | \$ | 2,168,636 | P |
| | | | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | 2,543,260 | M |
| | | | |
| Net Benefit Inputs (NPV) | | | Ref |
| Resource Savings | | | |
| 2023 Annual Gross Energy (kWh) | | 10,642,465 | |
| NPV Cumulative Energy (kWh) | | 111,884,031 | |
| 10% Credit (Northwest Power Act)..... | | 603,340 | S |
| Total Electric Savings..... | \$ | 6,636,735 | A |
| | | | |
| Participant Bill Savings | | | |
| NPV Cumulative Participant Bill Savings | \$ | 6,413,017 | B |
| | | | |
| Other Benefits | | | |
| Non-Utility Rebates/Incentives..... | \$ | — | NUI |
| NEBs | \$ | 1,553,461 | NEB |

Notes: Non-energy benefits/impacts on a \$/kWh for each end-use. Based on 2019 impact evaluation.

Summary of Cost-Effectiveness Results

| Test | Benefit | Cost | Ratio |
|----------------|--------------|--------------|-------|
| UC Test..... | \$ 6,033,395 | \$ 2,168,636 | 2.78 |
| TRC Test | 8,190,196 | 2,990,934 | 2.74 |
| RIM Test | 6,033,395 | 8,581,653 | 0.70 |
| PCT | 9,687,440 | 2,543,260 | 3.81 |

Benefits and Costs Included in Each Test

| | | |
|----------------|-------------------------|---------------------|
| UC Test..... | = S * NTG | = P |
| TRC Test | = (A + NUI + NEB) * NTG | = P + ((M-I) * NTG) |
| RIM Test..... | = S * NTG | = P + (B * NTG) |
| PCT | = B + I + NUI + NEB | = M |

Assumptions for Levelized Calculations

| | |
|--|---------|
| Discount Rate | |
| Nominal (WACC) | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | 4.71% |
| Escalation Rate | 2.30% |
| Net-to-Gross (NTG) | 100% |
| Minimum NTG Sensitivity | 36% |
| Average Customer Segment Rate/kWh | \$0.058 |
| Line Losses..... | 9.60% |

Year: 2023

Program: New Construction

Market Segment: Commercial

Program Type: Energy Efficiency

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|---------------|---|---------------------------------------|-----------------|-------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Lighting | Interior Light Load Reduction. Part A: 10-19.9% below code. | Code standards | ft ² | C-All-Lgt-LPD Int-All-All-E | 14 | 0.43 | \$0.24 | – | \$0.13 | \$0.10 | \$0.044 | 1.99 | 1.75 | 1 |
| Lighting | Interior Light Load Reduction. Part B: 20-29.9% below code. | Code standards | ft ² | C-All-Lgt-LPD Int-All-All-E | 14 | 0.86 | \$0.47 | – | \$0.25 | \$0.20 | \$0.044 | 1.99 | 1.81 | 1 |
| Lighting | Interior Light Load Reduction. Part C: Equal to or greater than 30% below code. | Code standards | ft ² | C-All-Lgt-LPD Int-All-All-E | 14 | 1.95 | \$1.07 | – | \$0.58 | \$0.30 | \$0.044 | 2.78 | 1.77 | 1 |
| Lighting | Exterior Light Load Reduction. Minimum of 15% below code. | Code standards | kW | Commercial-Misc. Com-ExtLight | 15 | 4,059.00 | \$2,687.55 | – | \$287.00 | \$200.00 | \$0.044 | 7.07 | 6.33 | 1 |
| Lighting | Networked Lighting Controls - Interior | Code standards | kWh | C-All-Lgt-LPD Int-All-All-E | 12 | 1.00 | \$0.50 | – | \$0.33 | \$0.26 | \$0.044 | 1.64 | 1.45 | 1 |
| Lighting | Networked Lighting Controls - Exterior | Code standards | kWh | Commercial-Misc. Com-ExtLight | 12 | 1.00 | \$0.57 | – | \$0.33 | \$0.20 | \$0.044 | 2.35 | 1.67 | 1 |
| Lighting | Occupancy Sensors | Code standards | Sensor | C-All-Lgt-LPD Int-All-All-E | 8 | 329.00 | \$123.23 | – | \$134.00 | \$25.00 | \$0.044 | 3.11 | 0.91 | 1, 2 |
| Lighting | High-Efficiency Exit Signs | Code standards | Sign | IPC_8760 | 16 | 28.00 | \$16.32 | – | \$10.83 | \$7.50 | \$0.044 | 1.87 | 1.49 | 1 |
| A/C | Unitary Commercial Air Conditioners, Air Cooled (Cooling Mode). Split system & single package. Part A: Base to CEE Tier 1 | IECC 2018 Code Standard | Tons | C-All-HVAC-CAC-All-All-E | 15 | 47.00 | \$38.41 | – | \$79.00 | \$25.00 | \$0.044 | 1.42 | 0.52 | 1, 2 |
| A/C | Unitary Commercial Air Conditioners, Air Cooled (Cooling Mode). Split system & single package. Part B: Base to CEE Tier 2 | IECC 2018 Code Standard | Tons | C-All-HVAC-CAC-All-All-E | 15 | 88.00 | \$71.92 | – | \$123.00 | \$50.00 | \$0.044 | 1.33 | 0.62 | 1, 2 |
| Heat Pump | Heat Pumps, Air Cooled (Cooling Mode). Split system & single package. Part A: Base to CEE Tier 1 | IECC 2018 Code Standard | Tons | C-All-HVAC-CAC-All-All-E | 15 | 72.00 | \$58.84 | – | \$36.00 | \$50.00 | \$0.044 | 1.11 | 1.65 | 1 |
| Heat Pump | Heat Pumps, Air Cooled (Cooling Mode). <= 5 tons. Split system & single package. Part B: Base to CEE Tier 2 | IECC 2018 Code Standard | Tons | C-All-HVAC-CAC-All-All-E | 15 | 104.00 | \$84.99 | – | \$67.00 | \$70.00 | \$0.044 | 1.14 | 1.31 | 1 |
| VRF AC | Variable Refrigerant Flow Units. Air Conditioner. Part B: Base to CEE Tier 1 | IECC 2018 Air Cooled AC Code Standard | Tons | C-All-HVAC-CAC-All-All-E | 15 | 87.00 | \$71.10 | – | \$93.00 | \$35.00 | \$0.044 | 1.83 | 0.81 | 1, 2 |
| VRF AC | Variable Refrigerant Flow Units. <= 5 tons. A/C. Part C: Base to CEE Tier 2 | IECC 2018 Air Cooled AC Code Standard | Tons | C-All-HVAC-CAC-All-All-E | 15 | 119.00 | \$97.25 | – | \$108.00 | \$55.00 | \$0.044 | 1.61 | 0.94 | 1, 2 |
| VRF Heat Pump | Variable Refrigerant Flow Units. Heat Pump. Part B: Base to CEE Tier 1 | IECC 2018 Air Cooled AC Code Standard | Tons | C-All-HVAC-CAC-All-All-E | 15 | 97.00 | \$79.27 | – | \$36.00 | \$50.00 | \$0.044 | 1.46 | 2.16 | 1 |
| VRF Heat Pump | Variable Refrigerant Flow Units. <= 5 tons. Heat Pump. Part C: Base to CEE Tier 2 | IECC 2018 Air Cooled AC Code Standard | Tons | C-All-HVAC-CAC-All-All-E | 15 | 129.00 | \$105.43 | – | \$71.00 | \$85.00 | \$0.044 | 1.16 | 1.51 | 1 |

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|----------------|---|---------------------------------------|---------------------------|---------------------------|---------------------------------|---|------------------------------------|---------|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| A/C | Air Conditioners, Water Cooled Any Size | IECC 2018 Air Cooled AC Code Standard | Ton | C-AII-HVAC-CAC-AII-AII-E | 15 | 67.00 | \$54.76 | – | \$225.00 | \$40.00 | \$0.044 | 1.27 | 0.26 | 1, 2 |
| HP | Heat Pumps, Water Cooled Any Size | IECC 2018 Air Cooled AC Code Standard | Ton | C-AII-HVAC-CAC-AII-AII-E | 15 | 133.00 | \$108.70 | – | \$370.00 | \$100.00 | \$0.044 | 1.03 | 0.32 | 1, 2 |
| VRF HP | Variable Refrigerant Flow, Water Cooled Heat Pump <= 64 Tons Base to CEE Tier 1 | IECC 2018 Air Cooled AC Code Standard | Ton | C-AII-HVAC-CAC-AII-AII-E | 15 | 128.00 | \$104.61 | – | \$145.00 | \$100.00 | \$0.044 | 0.99 | 0.76 | 1, 2, 6 |
| A/C | Air-cooled chiller condenser, IPLV 14.0 EER or higher | IECC 2018 Code standards | Tons | C-AII-HVAC-CAC-AII-AII-E | 20 | 102.00 | \$97.27 | – | \$209.00 | \$80.00 | \$0.044 | 1.15 | 0.50 | 2, 3 |
| A/C | Water-cooled chiller electronically operated, reciprocating and positive displacement | IECC 2018 Code standards | Tons | C-AII-HVAC-CAC-AII-AII-E | 20 | 61.00 | \$58.17 | – | \$103.00 | \$40.00 | \$0.044 | 1.36 | 0.61 | 2, 4 |
| A/C | Airside economizer | IECC 2018 Code standards | Ton of cooling | C-AII-HVAC-CAC-AII-AII-E | 15 | 197.00 | \$161.00 | – | \$81.36 | \$75.00 | \$0.044 | 1.92 | 1.97 | 1 |
| A/C | Water-side Economizer | IECC 2018 Code Standard | Combined chiller tonnage | C-AII-HVAC-CAC-AII-AII-E | 10 | 153.00 | \$96.46 | – | \$725.82 | \$50.00 | \$0.044 | 1.70 | 0.14 | 1, 2 |
| A/C | Direct evaporative cooler | IECC 2018 Code standards | Tons | C-AII-HVAC-CAC-AII-AII-E | 15 | 315.00 | \$257.44 | – | \$364.00 | \$200.00 | \$0.044 | 1.20 | 0.75 | 1, 2 |
| A/C | Indirect evaporative cooler | IECC 2018 Code Standard | Tons | C-AII-HVAC-CAC-AII-AII-E | 15 | 225.00 | \$183.88 | – | \$1,553.00 | \$130.00 | \$0.044 | 1.31 | 0.13 | 1, 2 |
| A/C | Evaporative Pre-Cooler on Air-Cooled Chillers | air-cooled condenser coil | Tons | C-AII-HVAC-CAC-AII-AII-E | 15 | 63.00 | \$51.49 | – | \$173.00 | \$30.00 | \$0.044 | 1.57 | 0.32 | 1, 2 |
| A/C | Evaporative Pre-Cooler on Air-Cooled Refrigeration Systems | air-cooled condenser coil | Tons | C-AII-HVAC-CAC-AII-AII-E | 15 | 110.00 | \$89.90 | – | \$173.00 | \$30.00 | \$0.044 | 2.58 | 0.56 | 1, 2 |
| Building Shell | Reflective roof treatment | IECC 2018 Code Standard | ft ² roof area | C-AII-HVAC-CAC-AII-AII-E | 15 | 0.12 | \$0.09 | – | \$0.05 | \$0.05 | \$0.044 | 1.72 | 1.89 | 1 |
| Controls | Energy Management System (EMS) controls. Part A: 1 strategy | IECC 2018 Code standards | Tons of cooling | C-AII-HVAC-Vent-AII-AII-E | 15 | 227.00 | \$129.91 | \$19.79 | \$162.00 | \$60.00 | \$0.044 | 1.85 | 0.95 | 1, 2 |
| Controls | Energy Management System (EMS) controls. Part B: 2 strategies | IECC 2018 Code standards | Tons of cooling | C-AII-HVAC-Vent-AII-AII-E | 15 | 409.00 | \$234.07 | \$19.79 | \$198.00 | \$80.00 | \$0.044 | 2.39 | 1.28 | 1 |
| Controls | EMS controls. Part C: 3 strategies | IECC 2018 Code standards | Tons of cooling | C-AII-HVAC-Vent-AII-AII-E | 15 | 473.00 | \$270.70 | \$32.99 | \$233.00 | \$100.00 | \$0.044 | 2.24 | 1.30 | 1 |
| Controls | EMS controls. Part D: 4 strategies | IECC 2018 Code Standard | Tons of cooling | C-AII-HVAC-Vent-AII-AII-E | 15 | 567.00 | \$324.49 | \$69.27 | \$269.00 | \$120.00 | \$0.044 | 2.24 | 1.45 | 1 |
| Controls | EMS controls. Part E: 5 strategies | IECC 2018 Code standards | Tons of cooling | C-AII-HVAC-Vent-AII-AII-E | 15 | 617.00 | \$353.11 | \$69.27 | \$304.00 | \$140.00 | \$0.044 | 2.11 | 1.38 | 1 |
| Controls | Guest room energy management system | IECC 2018 Code standards | Ton | C-Lod-fan-SGS-AII-AII-S | 11 | 550.00 | \$293.76 | – | \$57.50 | \$50.00 | \$0.044 | 3.95 | 3.95 | 1 |
| Controls | Variable speed drive on HVAC system applications | IECC 2018 Code standards | HP | C-AII-HVAC-Vent-AII-AII-E | 15 | 582.00 | \$333.08 | – | \$153.91 | \$125.00 | \$0.044 | 2.21 | 2.04 | 1 |
| Controls | Part C: Variable speed drive on Potato/Onion Storage Shed Ventilation | No VFD | HP | C-AII-HVAC-Vent-AII-AII-E | 10 | 1,193.00 | \$524.94 | – | \$264.00 | \$250.00 | \$0.044 | 1.73 | 1.82 | 1 |

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--------------------------------|--|---|-----------------|-------------------------------------|---------------------------------|---|--------------------------------|------------|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV Avoided Costs ^c | DSM NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Controls | Demand Controlled Kitchen Ventilation Exhaust Hood | Kitchen hood with constant speed ventilation motor | HP | C-All-Food-Cook-All-All-C | 15 | 4,590.00 | \$2,609.98 | – | \$248.00 | \$250.00 | \$0.044 | 5.75 | 6.36 | 1 |
| Appliances with Electric Dryer | Efficient Laundry Machines (electric dryer) | IECC 2018 Code standards | Unit | Commercial-Misc. Com-Misc | 9 | 814.50 | \$320.97 | \$2,183.52 | \$400.00 | \$200.00 | \$0.044 | 1.36 | 5.82 | 5 |
| Refrigeration | Efficient Refrigeration Condenser | Code standards | Ton | C-Gro-Ref-All-All-E | 15 | 114.00 | \$66.47 | – | \$192.00 | \$40.00 | \$0.044 | 1.48 | 0.37 | 1, 2 |
| Automatic High-Speed Door | Refrigerator to Dock | Code standards | ft ² | Commercial-Ref. warehouse-Misc | 16 | 360.00 | \$211.79 | – | \$167.00 | \$80.00 | \$0.044 | 2.21 | 1.27 | 1 |
| Automatic High-Speed Door | Freezer to Refrigerator | Code standards | ft ² | Commercial-Ref. warehouse-Misc | 16 | 1,829.00 | \$1,076.03 | – | \$167.00 | \$160.00 | \$0.044 | 4.46 | 4.77 | 1 |
| Automatic High-Speed Door | Freezer to Dock | Code standards | ft ² | Commercial-Ref. warehouse-Misc | 16 | 2,531.00 | \$1,489.02 | – | \$167.00 | \$320.00 | \$0.044 | 3.44 | 5.87 | 1 |
| High-Volume, Low-Speed Fan | High-Volume, Low-Speed Fan | Standard high-speed fan | Fan | I-All-Other-Shift2-All-All-S | 15 | 16,733.00 | \$9,855.11 | – | \$3,185.00 | \$2,000.00 | \$0.044 | 3.59 | 2.76 | 1 |
| Compressed Air | Air compressor VFD | No existing VFD | HP | Commercial-Misc. Com-Misc | 13 | 949.00 | \$480.89 | – | \$223.00 | \$200.00 | \$0.044 | 1.99 | 2.00 | 1 |
| Compressed Air | No-Loss Condensate Drain | Open tube with ball valve | HP | Commercial-Misc. Com-Misc | 10 | 1,970.00 | \$837.42 | – | \$194.00 | \$200.00 | \$0.044 | 2.91 | 3.27 | 1 |
| Compressed Air | Low Pressure Drop Filter | Standard filter | HP | Commercial-Misc. Com-Misc | 10 | 44.00 | \$18.70 | – | \$10.00 | \$10.00 | \$0.044 | 1.57 | 1.72 | 1 |
| Compressed Air | Refrigerated Compressed Air Dryer | Standard air dryer | CFM | Commercial-Misc. Com-Misc | 13 | 10.62 | \$5.38 | – | \$6.00 | \$3.00 | \$0.044 | 1.55 | 0.91 | 1, 2 |
| Compressed Air | Efficient Compress Air Nozzle | Code standards | unit | Commercial-Misc. Com-Misc | 15 | 2,223.00 | \$1,229.33 | – | \$85.00 | \$80.00 | \$0.044 | 6.88 | 7.37 | 1 |
| Engine Block Heater Control | Wall-mounted engine block heater | Standard engine block heater without controls | Unit | C-All-HVAC-ER-All-All-E | 15 | 2,738.00 | \$1,048.49 | – | \$70.00 | \$100.00 | \$0.044 | 4.74 | 6.03 | 1 |
| Engine Block Heater Controls | Engine-mounted engine block heater | Standard engine block heater without controls | Unit | C-All-HVAC-ER-All-All-E | 15 | 2,352.00 | \$900.67 | – | \$120.00 | \$150.00 | \$0.044 | 3.54 | 4.42 | 1 |
| Dairy VFD | VFD on milking vacuum pump | No existing VFD | VFD | A-Da-Proc-MilkingSchedule-All-All-S | 10 | 548.00 | \$274.58 | – | \$273.00 | \$170.00 | \$0.044 | 1.41 | 1.02 | 1, 2 |
| Dairy VFD | VFD on milking transfer pump | No existing VFD | VFD | A-Da-Proc-MilkingSchedule-All-All-S | 10 | 7,687.00 | \$3,851.67 | – | \$1,469.00 | \$1,500.00 | \$0.044 | 2.09 | 2.34 | 1 |
| Engine block heater | Stationary pump-driven circulating block heater | Circulating Block Heater on a Backup Generator <200 kW | per unit | C-All-HVAC-ER-All-All-E | 15 | 1,106.00 | \$423.53 | – | \$239.00 | \$200.00 | \$0.044 | 1.70 | 1.62 | 1 |
| Engine block heater | Stationary pump-driven circulating block heater | Circulating Block Heater on a Backup Generator 201-500 kW | per unit | C-All-HVAC-ER-All-All-E | 15 | 2,493.00 | \$954.67 | – | \$573.00 | \$350.00 | \$0.044 | 2.07 | 1.54 | 1 |

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|----------------------------------|--|--|--------------|-----------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Engine block heater | Stationary pump-driven circulating block heater | Circulating Block Heater on a Backup Generator 501-1000 kW | per unit | C-All-HVAC-ER-All-All-E | 15 | 4,385.00 | \$1,679.19 | – | \$573.00 | \$500.00 | \$0.044 | 2.42 | 2.41 | 1 |
| Ice Machines | ENERGY STAR Ice Machine <200 lbs per day | non ENERGY STAR ice machine | unit | C-All-Ref-Refrig-All-All-C | 9 | 285.00 | \$116.90 | – | \$311.00 | \$100.00 | \$0.044 | 1.04 | 0.40 | 1, 2 |
| Ice Machines | ENERGY STAR Ice Machine ≥ 200 lbs per day | non ENERGY STAR ice machine | unit | C-All-Ref-Refrig-All-All-C | 9 | 2,608.00 | \$1,069.78 | – | \$311.00 | \$300.00 | \$0.044 | 2.57 | 2.76 | 1 |
| High-Efficiency Battery Chargers | High-Efficiency Battery Chargers - Single or Three Phase | Code standards | unit | Commercial-Fleet_EV_Charger | 15 | 3,337.00 | \$1,778.68 | – | \$400.00 | \$200.00 | \$0.044 | 5.11 | 3.57 | 1 |
| Indoor Pool Cover | No pool cover | Code standards | per sq ft | Residential-Spa Heater | 10 | 23.50 | \$12.64 | – | \$4.99 | \$2.00 | \$0.044 | 4.15 | 2.30 | 7 |

^a Average measure life.

^b Estimated kWh savings measured at the customer's meter, excluding line losses.

^c NPV of DSM avoided costs. Based on end-use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 IRP. TRC Test Benefit calculation includes 10% conservation adder from the Northwest Power Act.

^d Incremental participant cost prior to customer incentives.

^e Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.

^f UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)

^g TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))

¹ Idaho Power TRM prepared by ADM Associates, Inc. 2021.

² Idaho only measure.

³ Idaho Power TRM prepared by ADM Associates, Inc. 2021. Averaged air-cooled chillers.

⁴ Idaho Power TRM prepared by ADM Associates, Inc. 2021. Averaged water-cooled chillers.

⁵ Idaho Power TRM prepared by ADM Associates, Inc. 2021. NEBs from water savings from RTF. ComClothesWashers_v7_1.xlsm. Simple average. 2023.

⁶ Measure not cost-effective. Measure cost-effective without inclusion of admin costs.

⁷ Idaho Power Multifamily TRM prepared by ADM Associates, Inc. 2023.

Retrofits

Segment: Commercial
2023 Program Results

| Cost Inputs | | | Ref |
|---|-------------|------------------|-------------|
| Program Administration | \$ | 819,640 | |
| Program Incentives..... | | 2,365,324 | I |
| Total UC | \$ | 3,184,964 | P |
| | | | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | 8,193,082 | M |
| | | | |
| Net Benefit Inputs (NPV) | | | Ref |
| Resource Savings | | | |
| 2023 Annual Gross Energy (kWh) | | 14,457,180 | |
| NPV Cumulative Energy (kWh) | 138,096,375 | \$ | 7,478,245 S |
| 10% Credit (Northwest Power Act)..... | | 747,825 | |
| Total Electric Savings | \$ | 8,226,070 | A |
| | | | |
| Participant Bill Savings | | | |
| NPV Cumulative Participant Savings..... | \$ | 7,783,397 | B |
| | | | |
| Other Benefits | | | |
| Non-Utility Rebates/Incentives..... | \$ | – | NUI |
| NEBs | \$ | 2,353,461 | NEB |

Note: Measure inputs from Evergreen Consulting Group or the TRM prepared by ADM Associates, Inc., unless otherwise noted.
NEB/impacts on a \$/kWh for each end-use. Based on 2019 impact evaluation.

| Summary of Cost-Effectiveness Results | | | |
|--|-------------------------|---------------------|---------|
| Test | Benefit | Cost | Ratio |
| UC Test..... | \$ 7,478,245 | \$ 3,184,964 | 2.35 |
| TRC Test | 10,579,531 | 9,012,722 | 1.17 |
| RIM Test..... | 7,478,245 | 10,968,361 | 0.68 |
| PCT | 12,502,182 | 8,193,082 | 1.53 |
| | | | |
| Benefits and Costs Included in Each Test | | | |
| UC Test..... | = S * NTG | = P | |
| TRC Test | = (A + NUI + NEB) * NTG | = P + ((M-I) * NTG) | |
| RIM Test..... | = S * NTG | = P + (B * NTG) | |
| PCT | = B + I + NUI + NEB | = M | |
| | | | |
| Assumptions for Levelized Calculations | | | |
| Discount Rate | | | |
| Nominal (WACC) | | | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | | | 4.71% |
| Escalation Rate | | | 2.30% |
| Net-to-Gross (NTG)..... | | | 100% |
| Minimum NTG Sensitivity | | | 43% |
| Average Customer Segment Rate/kWh | | | \$0.058 |
| Line Losses..... | | | 9.60% |

Year: 2023

Program: Retrofits

Market Segment: Commercial

Program Type: Energy Efficiency

| Measure Name | Measure Descriptions | Replacing | Measure unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--------------------------------|--|---------------------------------------|--------------|-------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Permanent Fixture Removal | Permanent Fixture Removal | | fixture | C-All-Lgt-LPD Int-All-All-E | 2 | 873.61 | \$99.04 | – | \$29.08 | \$22.69 | \$0.044 | 1.61 | 1.61 | 1 |
| LEDs | Pin-based LED | Pin-base lamp using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 5 | 125.30 | \$31.69 | – | \$23.02 | \$4.30 | \$0.044 | 3.22 | 1.22 | 1 |
| LEDs | HID LED screw-in replacement lamp | Existing HID lamp using > input watts | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 662.71 | \$321.59 | – | \$104.82 | \$49.23 | \$0.044 | 4.09 | 2.64 | 1 |
| LEDs | LED Tubes (type A, B & DM) | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 203.00 | \$98.51 | – | \$41.20 | \$18.29 | \$0.044 | 3.61 | 2.16 | 1 |
| LEDs | LED Tubes (type C) | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 310.10 | \$150.48 | – | \$99.04 | \$31.01 | \$0.044 | 3.36 | 1.47 | 1 |
| LEDs | LED Level 1 Retrofit Kit | fixture using higher wattage | fixture | Commercial-All Com-IntLight | 12 | 309.75 | \$150.31 | – | \$75.17 | \$43.37 | \$0.044 | 2.63 | 1.86 | 1 |
| LEDs | LED Level 1 retrofit kit with single control strategy | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 289.43 | \$140.45 | – | \$127.38 | \$49.20 | \$0.044 | 2.26 | 1.10 | 1 |
| LEDs | LED Level 1 retrofit kit with multiple control strategy | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 410.70 | \$199.30 | – | \$140.40 | \$78.03 | \$0.044 | 2.07 | 1.38 | 1 |
| LEDs | LED Level 1 retrofit kit with networked/luminaire level lighting control strategy | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 455.35 | \$220.97 | – | \$142.98 | \$100.42 | \$0.044 | 1.83 | 1.49 | 1 |
| LEDs | LED fixture or LED Level 2 retrofit kit | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 440.45 | \$213.74 | – | \$178.93 | \$96.90 | \$0.044 | 1.84 | 1.18 | 1 |
| LEDs | LED fixture or LED Level 2 retrofit kit with single control strategy | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 518.33 | \$251.53 | – | \$203.25 | \$129.58 | \$0.044 | 1.65 | 1.22 | 1 |
| LEDs | LED fixture or LED Level 2 retrofit kit with multiple control strategy | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 631.13 | \$306.27 | – | \$282.13 | \$170.40 | \$0.044 | 1.54 | 1.09 | 1 |
| LEDs | LED fixture or LED Level 2 retrofit kit with networked/luminaire level lighting control strategy | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 733.88 | \$356.13 | – | \$347.57 | \$223.34 | \$0.044 | 1.39 | 1.03 | 1 |
| LED Exit Sign | LED Exit Sign | fixture using higher wattage | sign | IPC_8760 | 12 | 230.68 | \$112.41 | – | \$63.77 | \$40.00 | \$0.044 | 2.24 | 1.67 | 1 |
| LED sign lighting retrofit kit | LED sign lighting retrofit kit | fixture using higher wattage | fixture | C-All-Lgt-LPD Int-All-All-E | 12 | 427.11 | \$207.26 | – | \$161.34 | \$85.42 | \$0.044 | 1.99 | 1.26 | 1 |
| Lighting Controls (Idaho) | Lighting Controls | Manual controls | controls | C-All-Lgt-LPD Int-All-All-E | 10 | 163.59 | \$70.19 | – | \$71.73 | \$27.31 | \$0.044 | 2.03 | 0.98 | 1, 3 |
| Refrigeration Case Lighting | Refrigeration Case Lighting | fixture using higher wattage | lamp | C-All-Lgt-LPD Int-All-All-E | 7 | 365.73 | \$124.14 | – | \$107.23 | \$52.26 | \$0.044 | 1.81 | 1.11 | 1, 3 |
| Permanent Fixture Removal | Permanent Fixture Removal | | fixture | Commercial-Misc. Com-ExtLight | 2 | 1,013.14 | \$126.89 | – | \$28.00 | \$22.69 | \$0.044 | 1.88 | 1.91 | 1 |
| LEDs | Pin-based LED | Pin-base lamp using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 5 | 141.25 | \$39.77 | – | \$25.74 | \$4.18 | \$0.044 | 3.81 | 1.37 | 1 |

| Measure Name | Measure Descriptions | Replacing | Measure unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--------------------------------|---|---------------------------------------|--------------|-------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| LEDs | HID LED screw-in replacement lamp | Existing HID lamp using > input watts | fixture | Commercial-Misc. Com-ExtLight | 12 | 743.75 | \$410.71 | – | \$110.38 | \$47.64 | \$0.044 | 5.09 | 3.15 | 1 |
| LEDs | LED Tubes (type A, B & DM) | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 287.20 | \$158.59 | – | \$63.89 | \$18.12 | \$0.044 | 5.14 | 2.28 | 1 |
| LEDs | LED Tubes (type C) | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 297.93 | \$164.52 | – | \$113.66 | \$29.79 | \$0.044 | 3.83 | 1.43 | 1 |
| LEDs | LED Level 1 Retrofit Kit | fixture using higher wattage | fixture | Commercial-All Com-ExtLight | 12 | 661.62 | \$365.35 | – | \$132.28 | \$92.63 | \$0.044 | 3.00 | 2.49 | 1 |
| LEDs | LED Level 1 retrofit kit with single control strategy | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 646.59 | \$357.05 | – | \$167.32 | \$109.92 | \$0.044 | 2.58 | 2.00 | 1 |
| LEDs | LED Level 1 retrofit kit with multiple control strategy | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 850.79 | \$469.81 | – | \$202.36 | \$161.55 | \$0.044 | 2.36 | 2.15 | 1 |
| LEDs | LED Level 1 retrofit kit with networked control strategy | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 933.44 | \$515.45 | – | \$218.51 | \$205.68 | \$0.044 | 2.09 | 2.18 | 1 |
| LEDs | LED fixture or LED Level 2 retrofit kit | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 912.48 | \$503.88 | – | \$279.77 | \$200.74 | \$0.044 | 2.09 | 1.73 | 1 |
| LEDs | LED fixture or LED Level 2 retrofit kit with single control strategy | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 951.89 | \$525.64 | – | \$310.73 | \$237.97 | \$0.044 | 1.88 | 1.64 | 1 |
| LEDs | LED fixture or LED Level 2 retrofit kit with multiple control strategy | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 753.43 | \$416.05 | – | \$248.13 | \$170.40 | \$0.044 | 2.04 | 1.63 | 1 |
| LEDs | LED fixture or LED Level 2 retrofit kit with networked control strategy | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 1,636.51 | \$903.69 | – | \$524.84 | \$491.91 | \$0.044 | 1.60 | 1.66 | 1 |
| LED sign lighting retrofit kit | LED sign lighting retrofit kit | fixture using higher wattage | fixture | Commercial-Misc. Com-ExtLight | 12 | 487.27 | \$269.07 | – | \$172.05 | \$97.45 | \$0.044 | 2.26 | 1.53 | 1 |
| Lighting Controls | Lighting Controls | Manual controls | controls | Commercial-Misc. Com-ExtLight | 10 | 366.19 | \$177.84 | – | \$109.09 | \$30.12 | \$0.044 | 3.84 | 1.56 | 1 |
| Air Conditioning (AC) Units | Base to CEE Tier 1 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 152.00 | \$124.22 | – | \$940.00 | \$85.00 | \$0.044 | 1.35 | 0.14 | 3, 4 |
| AC Units | Base to CEE Tier 2 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 193.00 | \$157.73 | – | \$984.00 | \$110.00 | \$0.044 | 1.33 | 0.17 | 3, 4 |
| AC Units | <= 5 ton VRF. Base to CEE Tier 2 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 161.00 | \$131.58 | – | \$1,093.00 | \$100.00 | \$0.044 | 1.23 | 0.13 | 3, 4 |
| AC Units | VRF. Base to CEE Tier 1 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 129.00 | \$105.43 | – | \$1,078.00 | \$75.00 | \$0.044 | 1.31 | 0.11 | 3, 4 |
| AC Units | Water-cooled AC that meets CEE Tier 1 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 130.00 | \$106.24 | – | \$1,237.00 | \$75.00 | \$0.044 | 1.32 | 0.09 | 3, 4 |
| AC Units | Air-conditioning Tune Up | | ton | C-All-HVAC-CAC-All-All-E | 10 | 99.50 | \$62.73 | – | \$35.00 | \$25.00 | \$0.044 | 2.13 | 1.75 | 4 |
| Heat Pump (HP) Units | Air Cooled HP Base to CEE Tier 1 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 187.00 | \$152.83 | – | \$888.00 | \$110.00 | \$0.044 | 1.29 | 0.19 | 3, 4 |

| Measure Name | Measure Descriptions | Replacing | Measure unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|---|---|--|--------------------------|---------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| HP Units | <= 5 ton HP Unit. Base to CEE Tier 2 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 219.00 | \$178.98 | – | \$919.00 | \$130.00 | \$0.044 | 1.28 | 0.21 | 3, 4 |
| HP Units | Water-cooled HP that meets CEE Tier 1 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 129.00 | \$105.43 | – | \$971.00 | \$75.00 | \$0.044 | 1.31 | 0.12 | 3, 4 |
| HP Units | <= 5 ton Air-cooled VRF. Base to CEE Tier 2 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 175.00 | \$143.02 | – | \$1,034.00 | \$110.00 | \$0.044 | 1.21 | 0.15 | 3, 4 |
| HP Units | Air-cooled VRF. Base to CEE Tier 1 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 143.00 | \$116.87 | – | \$999.00 | \$90.00 | \$0.044 | 1.21 | 0.13 | 3, 4 |
| HP Units | Water-cooled VRF that meets CEE Tier 1 | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 15 | 75.00 | \$61.29 | – | \$1,187.00 | \$45.00 | \$0.044 | 1.27 | 0.06 | 3, 4 |
| Chiller Units | Air-cooled chiller, IPLV 14.0 EER or higher | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 20 | 154.00 | \$146.86 | – | \$784.00 | \$110.00 | \$0.044 | 1.26 | 0.20 | 3, 5 |
| Chiller Units | Water-cooled chiller electronically operated, reciprocating and positive displacement | working pre-existing system | tons | C-All-HVAC-CAC-All-All-E | 20 | 91.00 | \$86.78 | – | \$596.00 | \$60.00 | \$0.044 | 1.36 | 0.16 | 3, 6 |
| Economizers | Air-side economizer control addition | No prior control | Ton of cooling | C-All-HVAC-CAC-All-All-E | 15 | 279.00 | \$228.02 | – | \$155.01 | \$100.00 | \$0.044 | 2.03 | 1.50 | 4 |
| Economizers | Air-side economizer control repair | Non-functional economizer | Ton of cooling | C-All-HVAC-CAC-All-All-E | 15 | 279.00 | \$228.02 | – | \$73.65 | \$50.00 | \$0.044 | 3.66 | 2.92 | 4 |
| Economizers | Water-side economizer control addition | No prior control | Combined chiller tonnage | C-All-HVAC-CAC-All-All-E | 10 | 153.00 | \$96.46 | – | \$725.82 | \$50.00 | \$0.044 | 1.70 | 0.14 | 3, 4 |
| Evaporative Coolers | Direct evaporative cooler | Replacing standard AC unit | Ton | C-All-HVAC-CAC-All-All-E | 15 | 350.00 | \$286.04 | – | \$1,178.00 | \$200.00 | \$0.044 | 1.33 | 0.26 | 3, 4 |
| Evaporative Coolers | Indirect evaporative cooler | Replacing standard AC unit | ton | C-All-HVAC-CAC-All-All-E | 15 | 250.00 | \$204.31 | – | \$2,367.00 | \$130.00 | \$0.044 | 1.45 | 0.09 | 3, 4 |
| Evaporative Pre-Cooler on Air-Cooled Chillers | Evaporative Pre-Cooler on Air-Cooled Chillers | existing air-cooled condenser coil | ton | C-All-HVAC-CAC-All-All-E | 15 | 63.00 | \$51.49 | – | \$173.00 | \$30.00 | \$0.044 | 1.57 | 0.32 | 3, 4 |
| Package Terminal Air Conditioner (PTAC) | PTAC 13.2-14.3 EER | existing ptac | ton | C-All-HVAC-CAC-All-All-E | 15 | 231.30 | \$189.03 | – | \$1,571.18 | \$50.00 | \$0.044 | 3.14 | 0.13 | 3, 4 |
| PTAC | PTAC >=14.4 EER | existing ptac | ton | C-All-HVAC-CAC-All-All-E | 15 | 279.49 | \$228.42 | – | \$1,735.62 | \$75.00 | \$0.044 | 2.61 | 0.14 | 3, 4 |
| Package Terminal Heat Pump (PTHP) | PTHP 13.2-14.3 EER | existing pthp | ton | C-All-HVAC-Vent-All-All-E | 15 | 436.45 | \$249.78 | – | \$918.00 | \$50.00 | \$0.044 | 3.60 | 0.29 | 3, 4 |
| PTHP | PTHP >=14.4 EER | existing pthp | ton | C-All-HVAC-Vent-All-All-E | 15 | 560.12 | \$320.56 | – | \$999.00 | \$75.00 | \$0.044 | 3.21 | 0.34 | 3, 4 |
| Connected Thermostat | No existing connected (web-enabled) thermostat | No existing connected (web-enabled) thermostat | unit | C-All-HVAC-Vent-All-All-E | 5 | 1,588.35 | \$411.72 | – | \$300.00 | \$150.00 | \$0.044 | 1.87 | 1.22 | 3, 15 |

| Measure Name | Measure Descriptions | Replacing | Measure unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|---------------------------------------|---|--|-------------------|---------------------------|---------------------------------|---|------------------------------------|------------|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Automated Control Systems | Energy Management System (EMS) controls with 1 strategy | Proposed strategy not existing (retrofit system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 372.00 | \$212.90 | \$26.39 | \$198.00 | \$100.00 | \$0.044 | 1.83 | 1.21 | 4 |
| Automated Control Systems | EMS controls with 2 strategies | Proposed strategy not existing (retrofit system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 622.00 | \$355.97 | \$19.79 | \$233.00 | \$150.00 | \$0.044 | 2.00 | 1.58 | 4 |
| Automated Control Systems | EMS controls with 3 strategies | Proposed strategy not existing (retrofit system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 811.00 | \$464.14 | \$59.38 | \$269.00 | \$175.00 | \$0.044 | 2.20 | 1.87 | 4 |
| Automated Control Systems | EMS controls with 4 strategies | Proposed strategy not existing (retrofit system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 1,728.00 | \$988.93 | \$316.68 | \$304.00 | \$200.00 | \$0.044 | 3.58 | 3.69 | 4 |
| Automated Control Systems | EMS controls with 5 strategies | Proposed strategy not existing (retrofit system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 1,796.00 | \$1,027.85 | \$319.98 | \$340.00 | \$225.00 | \$0.044 | 3.37 | 3.46 | 4 |
| Automated Control Systems | EMS controls with 1 strategy | Proposed strategy not existing (new system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 227.00 | \$129.91 | \$19.79 | \$162.00 | \$60.00 | \$0.044 | 1.85 | 0.95 | 3, 4 |
| Automated Control Systems | EMS controls with 2 strategies | Proposed strategy not existing (new system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 409.00 | \$234.07 | \$19.79 | \$198.00 | \$80.00 | \$0.044 | 2.39 | 1.28 | 4 |
| Automated Control Systems | EMS controls with 3 strategies | Proposed strategy not existing (new system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 473.00 | \$270.70 | \$32.99 | \$233.00 | \$100.00 | \$0.044 | 2.24 | 1.30 | 4 |
| Automated Control Systems | EMS controls with 4 strategies | Proposed strategy not existing (new system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 567.00 | \$324.49 | \$69.27 | \$269.00 | \$120.00 | \$0.044 | 2.24 | 1.45 | 4 |
| Automated Control Systems | EMS controls with 5 strategies | Proposed strategy not existing (new system) | tons of cooling | C-All-HVAC-Vent-All-All-E | 15 | 617.00 | \$353.11 | \$69.27 | \$304.00 | \$140.00 | \$0.044 | 2.11 | 1.38 | 4 |
| Automated Control Systems | Lodging room occupancy controls | Manual controls | Unit | C-Lod-fan-SGS-All-All-S | 11 | 643.00 | \$343.43 | – | \$150.61 | \$75.00 | \$0.044 | 3.32 | 2.11 | 4 |
| Electronically Commutated Motor (ECM) | ECM/PMSM motor in HVAC applications. | Shaded pole or permanent split capacitor motor | HP | C-All-HVAC-Vent-All-All-E | 15 | 8,815.25 | \$5,044.97 | – | \$239.50 | \$200.00 | \$0.044 | 8.54 | 8.80 | 4 |
| Premium Windows | Low U-value, U-factor of .30 or less | Standard window | sq ft window area | C-All-HVAC-ER-All-All-C | 25 | 9.00 | \$5.45 | – | \$22.08 | \$2.50 | \$0.044 | 1.88 | 0.27 | 3, 4 |
| Reflective roofing | Adding reflective roof treatment | non-reflective low pitch roof | ft2 roof area | C-All-HVAC-CAC-All-All-E | 15 | 0.12 | \$0.09 | – | \$0.05 | \$0.05 | \$0.044 | 1.72 | 1.89 | 4 |
| Ceiling Insulation | Increase to R38 min. insulation. | Insulation level, R11 or less | sq ft | C-All-HVAC-ER-All-All-C | 25 | 0.38 | \$0.23 | – | \$1.45 | \$0.20 | \$0.044 | 1.07 | 0.17 | 3, 4 |
| Wall Insulation | Increase to R11 min. insulation. | Insulation level, R2.5 or less | sq ft wall area | C-All-HVAC-ER-All-All-C | 25 | 2.82 | \$1.71 | – | \$0.64 | \$0.40 | \$0.044 | 3.25 | 2.46 | 4 |
| Wall Insulation | Increase to R19 min. insulation. | Insulation level, R2.5 or less | sq ft wall area | C-All-HVAC-ER-All-All-C | 25 | 3.16 | \$1.91 | – | \$0.85 | \$0.55 | \$0.044 | 2.77 | 2.13 | 4 |
| Laundry Machines | High efficiency washer | Standard washer, electric dryer | Machine | Commercial-Misc. Com-Misc | 9 | 814.50 | \$320.97 | \$2,183.52 | \$400.00 | \$200.00 | \$0.044 | 1.36 | 5.82 | 4, 7 |

| Measure Name | Measure Descriptions | Replacing | Measure unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|----------------------------------|--|--|--------------|------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| HVAC Fan Motor Belts | Type AX notched V-belt Type BX notched V-belt | Type A solid V-belt Type B solid V-belt | HP | C-All-HVAC-Vent-All-All-E | 4 | 83.00 | \$17.99 | – | \$4.40 | \$5.00 | \$0.044 | 2.07 | 2.45 | 4 |
| HVAC Fan Motor Belts | Synchronous belt | Standard fan belt | HP | C-All-HVAC-Vent-All-All-E | 4 | 213.00 | \$46.18 | – | \$67.00 | \$25.00 | \$0.044 | 1.34 | 0.66 | 3, 4 |
| Engine block heater | Stationary pump-driven circulating block heater | Circulating Block Heater on a Backup Generator <200 kW | unit | C-All-HVAC-ER-All-All-E | 15 | 1,106.00 | \$423.53 | – | \$1,268.00 | \$200.00 | \$0.044 | 1.70 | 0.35 | 3, 4 |
| Engine block heater | Stationary pump-driven circulating block heater | Circulating Block Heater on a Backup Generator 201-500 kW | unit | C-All-HVAC-ER-All-All-E | 15 | 2,493.00 | \$954.67 | – | \$2,152.00 | \$350.00 | \$0.044 | 2.07 | 0.46 | 3, 4 |
| Engine block heater | Stationary pump-driven circulating block heater | Circulating Block Heater on a Backup Generator 501-1000 kW | unit | C-All-HVAC-ER-All-All-E | 15 | 4,385.00 | \$1,679.19 | – | \$2,645.00 | \$500.00 | \$0.044 | 2.42 | 0.65 | 3, 4 |
| Engine block heater | Wall mounted engine block heater | standard engine block heater without controls | Unit | C-All-HVAC-ER-All-All-E | 15 | 2,738.00 | \$1,048.49 | – | \$120.00 | \$100.00 | \$0.044 | 4.74 | 4.78 | 4 |
| Engine block heater | Engine-mounted engine block heater | standard engine block heater without controls | Unit | C-All-HVAC-ER-All-All-E | 15 | 2,352.00 | \$900.67 | – | \$170.00 | \$150.00 | \$0.044 | 3.54 | 3.61 | 4 |
| High Efficiency Battery Chargers | High Efficiency Battery Chargers | Standard battery charger | unit | Commercial-Fleet_EV_Charger | 15 | 3,337.00 | \$1,778.68 | – | \$400.00 | \$200.00 | \$0.044 | 5.11 | 3.57 | 4 |
| High Volume Low Speed Fan | High Volume Low Speed Fan | Standard high-speed fan | Fan | I-All-Other-Shift2-All-All-S | 15 | 16,733.00 | \$9,855.11 | – | \$4,185.00 | \$2,000.00 | \$0.044 | 3.59 | 2.20 | 4 |
| Compressed Air | VFD on air compressor | No existing VFD | HP | Commercial-Misc. Com-Misc | 13 | 949.00 | \$480.89 | – | \$223.00 | \$200.00 | \$0.044 | 1.99 | 2.00 | 4 |
| Compressed Air | Low Pressure Filter | Standard filter | HP | Commercial-Misc. Com-Misc | 10 | 44.00 | \$18.70 | – | \$10.00 | \$10.00 | \$0.044 | 1.57 | 1.72 | 4 |
| Compressed Air | No-Loss Condensate Drain | Open tube with ball valve | Unit | Commercial-Misc. Com-Misc | 10 | 1,970.00 | \$837.42 | – | \$244.00 | \$200.00 | \$0.044 | 2.91 | 2.78 | 4 |
| Compressed Air | Efficient Compress Air Nozzle | Standard air nozzle | Unit | Commercial-Misc. Com-Misc | 15 | 2,223.00 | \$1,229.33 | – | \$85.00 | \$80.00 | \$0.044 | 6.88 | 7.37 | 4 |
| Compressed Air | Efficient Refrigerated Compressed Air Dryer | Standard air dryer | CFM | Commercial-Misc. Com-Misc | 13 | 10.62 | \$5.38 | – | \$6.00 | \$3.00 | \$0.044 | 1.55 | 0.91 | 3, 4 |
| Refrigeration | Install auto-closer - walk-in | no/damaged auto-closer, low temp | Door | C-Gro-Ref-All-All-All-E | 8 | 2,509.00 | \$950.95 | – | \$736.00 | \$400.00 | \$0.044 | 1.86 | 1.23 | 4 |
| Refrigeration | Install auto-closer - reach-in | Damaged auto-closer, low temp | Door | C-Gro-Ref-All-All-All-E | 8 | 326.00 | \$123.56 | – | \$736.00 | \$75.00 | \$0.044 | 1.38 | 0.18 | 3, 4 |
| Refrigeration | Install auto-closer - walk-in | No/damaged auto-closer, med. Temp | Door | C-Gro-Ref-All-All-All-E | 8 | 562.00 | \$213.01 | – | \$736.00 | \$135.00 | \$0.044 | 1.33 | 0.31 | 3, 4 |
| Refrigeration | Install auto-closer - reach-in | Damaged auto-closer, med. Temp | Door | C-Gro-Ref-All-All-All-E | 8 | 243.00 | \$92.10 | – | \$736.00 | \$55.00 | \$0.044 | 1.40 | 0.14 | 3, 4 |
| Refrigeration | Anti-sweat heat controls | Low temp case without controls | Linear ft | C-Gro-Ref-All-All-All-E | 8 | 292.00 | \$110.67 | – | \$77.26 | \$50.00 | \$0.044 | 1.76 | 1.35 | 3, 4 |

| Measure Name | Measure Descriptions | Replacing | Measure unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--|--|---|--------------|--------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Refrigeration | Anti-sweat heat controls | Med.temp case without controls | Linear ft | C-Gro-Ref-All-All-All-E | 8 | 220.00 | \$83.38 | | \$77.26 | \$50.00 | \$0.044 | 1.40 | 1.05 | 3, 4 |
| Refrigeration | Refrigerated case doors - med temp | No existing case door or barrier | Linear ft | C-Gro-Ref-All-All-All-E | 15 | 700.00 | \$408.14 | | \$342.73 | \$130.00 | \$0.044 | 2.53 | 1.20 | 2 |
| Evaporative Pre-Cooler on Air-Cooled Refrigeration Systems | Evaporative Pre-Cooler on Air-Cooled Refrigeration Systems | existing air-cooled condenser coil | ton | C-All-Ref-Refrig-All-All-C | 15 | 110.00 | \$63.59 | – | \$173.00 | \$30.00 | \$0.044 | 1.82 | 0.39 | 3, 4 |
| Refrigeration | No-heat glass door | commercial glass door | door | C-Gro-Ref-All-All-All-E | 12 | 779.00 | \$394.25 | – | \$664.00 | \$200.00 | \$0.044 | 1.68 | 0.62 | 3, 4 |
| Defrost Coil Control | Defrost Coil Control - Cooler or Freezer | no evaporative coil defrost control | per fan | C-Gro-Ref-All-All-All-E | 10 | 195.50 | \$87.29 | – | \$500.00 | \$50.00 | \$0.044 | 1.49 | 0.19 | 3, 4 |
| Automatic high speed doors | Freezer to Dock | manual or electric warehouse door | sq ft | Commercial-Ref. warehouse-Misc | 16 | 2,812.00 | \$1,654.34 | – | \$188.00 | \$320.00 | \$0.044 | 3.72 | 5.82 | 4 |
| Automatic high speed doors | Freezer to Refrigerator | manual or electric warehouse door | sq ft | Commercial-Ref. warehouse-Misc | 16 | 2,032.00 | \$1,195.46 | – | \$188.00 | \$160.00 | \$0.044 | 4.78 | 4.73 | 4 |
| Automatic high speed doors | Refrigerator to Dock | manual or electric warehouse door | sq ft | Commercial-Ref. warehouse-Misc | 16 | 400.00 | \$235.33 | – | \$188.00 | \$80.00 | \$0.044 | 2.41 | 1.26 | 4 |
| Strip Curtain | For walk-in freezers | no protective barrier | sq ft | C-Gro-Ref-All-All-All-E | 4 | 210.00 | \$45.87 | – | \$9.00 | \$5.00 | \$0.044 | 3.20 | 2.76 | 4 |
| Strip Curtain | For walk-in refrigerators | no protective barrier | sq ft | C-Gro-Ref-All-All-All-E | 4 | 78.00 | \$17.04 | – | \$9.00 | \$5.00 | \$0.044 | 2.01 | 1.50 | 4 |
| Compressor Head Fan Motor to ECM | Compressor Head Fan Motor to ECM | SP or PSC with motors less than or equal to existing motor size | unit | C-Gro-Ref-All-All-All-E | 15 | 345.61 | \$201.51 | – | \$228.08 | \$100.00 | \$0.044 | 1.75 | 0.91 | 3, 4 |
| Floating Head/Suction Pressures | Head pressure controller | Standard head pressure control | HP | C-Gro-Ref-All-All-All-E | 16 | 440.00 | \$266.27 | – | \$311.90 | \$160.00 | \$0.044 | 1.48 | 0.88 | 3, 4 |
| Floating Head/Suction Pressures | Suction pressure controller | Standard suction pressure control | HP | C-Gro-Ref-All-All-All-E | 16 | 104.00 | \$62.94 | – | \$86.91 | \$40.00 | \$0.044 | 1.41 | 0.76 | 3, 4 |
| Demand Controlled Kitchen Ventilation Exhaust Hood | VFD installed on kitchen exhaust and/or makeup air fan | Kitchen hood with constant speed ventilation motor | HP | C-All-Food-Cook-All-All-C | 15 | 4,590.00 | \$2,609.98 | – | \$469.00 | \$250.00 | \$0.044 | 5.75 | 4.27 | 4 |
| Ice Machines | Ice Machines (<200 lbs/day) | code | per unit | C-All-Ref-Refrig-All-All-C | 9 | 285.00 | \$116.90 | – | \$311.00 | \$100.00 | \$0.044 | 1.04 | 0.40 | 3, 4 |
| Ice Machines | Ice Machines (>200 lbs/day) | code | per unit | C-All-Ref-Refrig-All-All-C | 9 | 2,608.00 | \$1,069.78 | – | \$311.00 | \$300.00 | \$0.044 | 2.57 | 2.76 | 4 |
| Commercial Kitchen Equipment | Efficient Hot Food Holding Cabinet (Half Size) | Standard hot food holding cabinet | per unit | C-All-Food-Cook-All-All-C | 7 | 1,373.07 | \$463.48 | – | \$883.13 | \$200.00 | \$0.044 | 1.78 | 0.54 | 3, 8 |

| Measure Name | Measure Descriptions | Replacing | Measure unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|------------------------------|---|-----------------------------------|--------------|-------------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Commercial Kitchen Equipment | Efficient Hot Food Holding Cabinet (Full Size) | Standard hot food holding cabinet | per unit | C-All-Food-Cook-All-All-C | 7 | 2,602.55 | \$878.48 | – | \$3,184.56 | \$400.00 | \$0.044 | 1.70 | 0.29 | 3, 8 |
| Commercial Kitchen Equipment | Efficient Hot Food Holding Cabinet (Double Size) | Standard hot food holding cabinet | per unit | C-All-Food-Cook-All-All-C | 7 | 4,473.47 | \$1,510.01 | – | \$3,587.61 | \$800.00 | \$0.044 | 1.51 | 0.44 | 3, 8 |
| New On-Demand Overwrapper | New On-Demand Overwrapper | Standard overwrapper | per unit | Commercial-Grocery-Process | 10 | 1,270.77 | \$585.73 | – | \$294.33 | \$100.00 | \$0.044 | 3.75 | 1.84 | 9 |
| Commercial Kitchen Equipment | ENERGY STAR listed electric combination oven (3-4 pans) | Standard electric oven | oven | C-All-Food-Cook-All-All-C | 10 | 1,306.90 | \$571.80 | – | \$1,027.82 | \$300.00 | \$0.044 | 1.60 | 0.58 | 3, 10 |
| Commercial Kitchen Equipment | ENERGY STAR listed electric combination oven (5-14 pans) | Standard electric oven | oven | C-All-Food-Cook-All-All-C | 10 | 6,428.11 | \$2,812.46 | – | \$1,027.82 | \$800.00 | \$0.044 | 2.59 | 2.36 | 10 |
| Commercial Kitchen Equipment | ENERGY STAR listed electric combination oven (15-28 pans) | Standard electric oven | oven | C-All-Food-Cook-All-All-C | 10 | 5,640.26 | \$2,467.75 | – | \$1,027.82 | \$800.00 | \$0.044 | 2.35 | 2.12 | 10 |
| Commercial Kitchen Equipment | ENERGY STAR listed electric combination oven (29-40 pans) | Standard electric oven | oven | C-All-Food-Cook-All-All-C | 10 | 11,633.69 | \$5,090.03 | – | \$1,027.82 | \$800.00 | \$0.044 | 3.87 | 3.63 | 10 |
| Commercial Kitchen Equipment | ENERGY STAR listed electric convection oven | Standard electric oven | oven | C-All-Food-Cook-All-All-C | 12 | 1,206.40 | \$596.79 | – | \$553.07 | \$180.00 | \$0.044 | 2.56 | 1.08 | 3, 11 |
| Commercial Kitchen Equipment | ENERGY STAR listed electric fryer | Standard fryer | fryer | C-All-Food-Cook-All-All-C | 9 | 953.15 | \$386.68 | – | \$1,439.43 | \$150.00 | \$0.044 | 2.01 | 0.29 | 3, 12 |
| Commercial Kitchen Equipment | ENERGY STAR listed electric steamer -Any Size | Standard steamer | pan | C-All-Food-Cook-All-All-C | 8 | 1,689.45 | \$628.98 | – | \$- | \$30.00 | \$0.044 | 6.00 | 6.59 | 13 |
| Variable Speed Controls | Variable speed drive on HVAC system application | single speed HVAC system fan/ump | HP | C-All-HVAC-Vent-All-All-E | 15 | 622.00 | \$355.97 | – | \$184.55 | \$125.00 | \$0.044 | 2.33 | 1.85 | 4 |
| Variable Speed Controls | Variable speed drive on potato and onion storage shed ventilation | no existing VFD | HP | A-SpudOnionVFD | 10 | 1,193.00 | \$372.74 | – | \$264.00 | \$250.00 | \$0.044 | 1.23 | 1.29 | 4 |
| Variable Speed Controls | VFD on milking vacuum pump | no existing VFD | HP | A-Da-Proc-MilkingSchedule-All-All-S | 10 | 3,084.00 | \$1,545.28 | – | \$356.00 | \$250.00 | \$0.044 | 4.00 | 3.45 | 4 |
| Variable Speed Controls | VFD on milking transfer pump | no existing VFD | HP | A-Da-Proc-MilkingSchedule-All-All-S | 10 | 11,777.00 | \$5,901.02 | – | \$2,052.00 | \$1,500.00 | \$0.044 | 2.92 | 2.52 | 4 |
| Indoor/Outdoor pool cover | No pool cover | No pool cover | per sq ft | Residential-Spa Heater | 10 | 34.75 | \$18.69 | – | \$4.99 | \$2.00 | \$0.044 | 5.28 | 3.15 | 14 |

^a Average measure life.^b Estimated kWh savings measured at the customer's meter, excluding line losses.^c NPV of DSM avoided costs. Based on end use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 IRP. Total Resource Cost Test Benefit calculation includes 10% conservation adder from the Northwest Power Act.

^d Incremental participant cost prior to customer incentives.

^e Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.

^f UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)

^g TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))

^h Evergreen Consulting Group, LLC. Idaho Power Lighting Tool. 2023.

ⁱ Idaho Power engineering calculations..

^j Idaho only measure.

^k Idaho Power TRM prepared by ADM Associates, Inc. 2021.

^l Idaho Power TRM prepared by ADM Associates, Inc. 2021. Averaged air-cooled chillers.

^m Idaho Power TRM prepared by ADM Associates, Inc. 2021. Averaged water-cooled chillers.

ⁿ Idaho Power TRM prepared by ADM Associates, Inc. 2021. NEBs from water savings from RTF. ComClothesWashers_v7_1.xlsm. Simple average. 2023.

^o RTF. ComCookingHotFoodCabinet_v5_1. 2023.

^p RTF. ComOnDemandOverwrappers_v3_2. 2023.

^q RTF. ComCookingCombinationOven_v5_0. 2023

^r RTF. ComCookingConventionOven_v5_1. 2023

^s RTF. ComCookingFryer_v5_1. 2023

^t RTF. ComCookingSteamer_v5_1. Calculated per pan savings. 2023.

^u Idaho Power Multifamily TRM prepared by ADM Associates, Inc. 2023.

^v RTF. ComConnectedThermostat_2_1.xlsm. 2023. Savings shown based on average of 15 cooling tons.

Small Business Direct Install

Segment: Commercial
2023 Program Results

| Cost Inputs | | | Ref |
|---|-----------|----------------|-----------|
| Program Administration | \$ | 366,674 | |
| Program Incentives..... | | — | I |
| Total UC | \$ | 366,674 | P |
| | | | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | — | M |
| | | | |
| Net Benefit Inputs (NPV) | | | Ref |
| Resource Savings | | | |
| 2023 Annual Gross Energy (kWh) | 791,512 | | |
| NPV Cumulative Energy (kWh) | 7,139,147 | \$ | 357,277 S |
| 10% Credit (Northwest Power Act)..... | | 35,728 | |
| Total Electric Savings | \$ | 393,005 | A |
| | | | |
| Participant Bill Savings | | | |
| NPV Cumulative Participant Bill Savings..... | \$ | 398,909 | B |
| | | | |
| Other Benefits | | | |
| Non-Utility Rebates/Incentives..... | \$ | — | NUI |
| NEBs | \$ | 150,093 | NEB |

Notes: NEB/impacts on a \$/kWh for each end-use. Based on 2019 impact evaluation of other C&I programs
2023 cost-effectiveness ratios include evaluation expenses. If evaluation expense were removed from the program's cost-effectiveness, the UCT and TRC would be 1.08 and 1.64, respectively.
Program closed March 31, 2023.

| Summary of Cost-Effectiveness Results | | | |
|--|-------------------------|---------------------|---------|
| Test | Benefit | Cost | Ratio |
| UC Test..... | \$ 357,277 | \$ 366,674 | 0.97 |
| TRC Test | 543,097 | 366,674 | 1.48 |
| RIM Test..... | 357,277 | 765,583 | 0.47 |
| PCT | N/A | N/A | N/A |
| | | | |
| Benefits and Costs Included in Each Test | | | |
| UC Test..... | = S * NTG | = P | |
| TRC Test | = (A + NUI + NEB) * NTG | = P + ((M-I) * NTG) | |
| RIM Test..... | = S * NTG | = P + (B * NTG) | |
| PCT | N/A | N/A | |
| | | | |
| Assumptions for Levelized Calculations | | | |
| Discount Rate | | | |
| Nominal (WACC) | | | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | | | 4.71% |
| Escalation Rate | | | 2.30% |
| Net-to-Gross (NTG)..... | | | 100% |
| Minimum NTG Sensitivity | | | 103% |
| Average Customer Segment Rate/kWh | | | \$0.058 |
| Line Losses..... | | | 9.60% |

Irrigation Efficiency Rewards

Segment: Irrigation
2023 Program Results

| Cost Inputs | | | | Ref |
|---|------------|------------------|-----------|-----|
| Program Administration | \$ | 497,225 | | |
| Program Incentives | | 1,211,742 | I | |
| Total UC | \$ | 1,708,967 | P | |
| Measure Equipment and Installation (Incremental Participant Cost) | \$ | 14,247,153 | M | |
| Net Benefit Inputs (NPV) | | | | Ref |
| Resource Savings | | | | |
| 2023 Annual Gross Energy (kWh) | | 4,558,425 | | |
| NPV Cumulative Energy (kWh) | 43,546,172 | \$ | 3,511,270 | S |
| 10% Credit (Northwest Power Act) | | 351,127 | | |
| Total Electric Savings | \$ | 3,862,398 | A | |
| Participant Bill Savings | | | | |
| NPV Cumulative Participant Bill Savings | \$ | 2,487,893 | B | |
| Other Benefits | | | | |
| Non-Utility Rebates/Incentives | \$ | – | NUI | |
| NEBs | \$ | 28,916,763 | NEB | |

| Summary of Cost-Effectiveness Results | | | |
|--|-------------------------|---------------------|---------|
| Test | Benefit | Cost | Ratio |
| UC Test | \$ 3,511,270 | \$ 1,708,967 | 2.05 |
| TRC Test | 32,779,161 | 14,744,378 | 2.22 |
| RIM Test | 3,511,270 | 4,196,861 | 0.84 |
| PCT | 32,616,398 | 14,247,153 | 2.29 |
| Benefits and Costs Included in Each Test | | | |
| UC Test | = S * NTG | = P | |
| TRC Test | = (A + NUI + NEB) * NTG | = P + ((M-I) * NTG) | |
| RIM Test | = S * NTG | = P + (B * NTG) | |
| PCT | = B + I + NUI + NEB | = M | |
| Assumptions for Levelized Calculations | | | |
| Discount Rate | | | |
| Nominal (WACC) | | | 7.12% |
| Real ((1 + WACC) / (1 + Escalation)) – 1 | | | 4.71% |
| Escalation Rate | | | 2.30% |
| Net-to-Gross (NTG) | | | 100% |
| Minimum NTG Sensitivity | | | 49% |
| Average Customer Segment Rate/kWh | | | \$0.059 |
| Line Losses | | | 9.60% |

Notes: Energy savings are combined for projects under the Custom and Menu program. Savings under each Custom project is unique and individually calculated and assessed.

For Custom option, NEBs including yield, labor, and other benefits reported by the customer. For Menu option, NEBs from RTF.

Green Rewind initiative is available to agricultural, commercial, and industrial customers. Agricultural motor rewinds are paid under Irrigation Efficiency Rewards, but the savings are not included in the program cost-effectiveness.

Green Rewind savings are included in the sector cost-effectiveness.

2023 cost-effectiveness ratios include evaluation expenses. If evaluation expense were removed from the program's cost-effectiveness, the UCT and TRC would be 2.11 and 2.23, respectively.

Year: 2023

Program: Irrigation Efficiency Rewards

Market Segment: Irrigation

Program Type: Energy Efficiency

| Measure Name ^a | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^b | Benefit | | | Cost | | | B/C Tests | | Sources/Notes |
|---------------------------|---|--|--------------|--------------------------------|---------------------------------|---|------------------------------------|---------|---|----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^c | NPV DSM Avoided Costs ^d | NEB | Gross Incremental Participant Cost ^e | Incentive/Unit | Admin Cost (\$/kWh) ^f | UCT Ratio ^g | TRC Ratio ^h | |
| Nozzle Replacement | New flow-control-type nozzles replacing existing brass nozzles or worn out flow control nozzles of same flow rate or less | Brass nozzles or worn out flow control nozzles of same flow rate or less | Unit | A-Irr-Irr-Irrigation-All-All-E | 6 | 21.64 | \$10.04 | \$3.55 | \$7.59 | \$2.50 | \$0.109 | 2.07 | 1.47 | 1 |
| Nozzle Replacement | New nozzles replacing existing worn nozzles of same flow rate or less | Worn nozzle of same flow rate or less | Unit | A-Irr-Irr-Irrigation-All-All-E | 6 | 21.64 | \$10.04 | \$3.55 | \$1.29 | \$0.35 | \$0.109 | 3.71 | 4.00 | 1 |
| Sprinklers | Rebuilt or new brass impact sprinklers | Worn sprinkler | Unit | A-Irr-Irr-Irrigation-All-All-E | 6 | 1.92 | \$0.89 | \$16.80 | \$14.10 | \$0.50 | \$0.109 | 1.26 | 1.24 | 1 |
| Levelers | Rebuilt or new wheel line levelers | Worn wheel line leveler | Unit | A-Irr-Irr-Irrigation-All-All-E | 7 | 3.65 | \$1.92 | \$9.09 | \$4.57 | \$1.00 | \$0.109 | 1.37 | 2.25 | 1 |
| Sprinklers | Center pivot/linear move: Install new sprinkler package on an existing system | Worn sprinkler system | Unit | A-Irr-Irr-Irrigation-All-All-E | 6 | 26.09 | \$12.11 | \$27.18 | \$28.48 | \$8.00 | \$0.109 | 1.12 | 1.29 | 1 |
| Gasket Replacement | New gaskets for hand lines, wheel lines, or portable mainline | Worn gasket | Unit | A-Irr-Irr-Irrigation-All-All-E | 6 | 13.44 | \$6.24 | \$4.89 | \$2.48 | \$1.00 | \$0.109 | 2.53 | 2.98 | 1 |
| Drain Replacement | New drains, hand lines, wheel lines, or portable mainline | Worn drain | Unit | A-Irr-Irr-Irrigation-All-All-E | 6 | 9.87 | \$4.58 | \$6.83 | \$5.29 | \$3.00 | \$0.109 | 1.12 | 1.86 | 1 |

^a Available measures in the Irrigation Efficiency Rewards Menu Incentive Option. For the Custom Incentive Option, projects are thoroughly reviewed by Idaho Power staff.^b Average measure life.^c Estimated peak demand reduction measured at the customer's meter, excluding line losses.^d NPV of DSM avoided costs. Based on end use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 IRP. TRC Test Benefit calculation includes 10% conservation adder from the Northwest Power Act.^e Incremental participant cost prior to customer incentives. Based on customer reported three-year average. 2021–2023.^f Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.^g UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)^h TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))ⁱ RTF. AgIrrigationHardware_v6_1.xlsm. 2023. Weighted average of Western Idaho (17.84%), Eastern Washington & Oregon (1.94%), and Eastern & Southern Idaho (80.22%).

Year: 2023

Program: Irrigation Efficiency Rewards—Green Motors

Market Segment: Irrigation

Program Type: Energy Efficiency

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--|--|--------------------------|--------------|--------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Green Motors Program Rewind: Motor size 15 HP | Green Motors Program Rewind: Motor size 15 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 18 | 222.19 | \$217.05 | – | \$151.00 | \$15.00 | \$0.109 | 5.54 | 1.36 | 1 |
| Green Motors Program Rewind: Motor size 20 HP | Green Motors Program Rewind: Motor size 20 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 18 | 297.32 | \$290.44 | – | \$168.47 | \$20.00 | \$0.109 | 5.54 | 1.59 | 1 |
| Green Motors Program Rewind: Motor size 25 HP | Green Motors Program Rewind: Motor size 25 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 17 | 447.57 | \$424.05 | – | \$192.48 | \$25.00 | \$0.109 | 5.75 | 1.93 | 1 |
| Green Motors Program Rewind: Motor size 30 HP | Green Motors Program Rewind: Motor size 30 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 17 | 482.11 | \$456.77 | – | \$211.40 | \$30.00 | \$0.109 | 5.53 | 1.90 | 1 |
| Green Motors Program Rewind: Motor size 40 HP | Green Motors Program Rewind: Motor size 40 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 17 | 561.43 | \$531.93 | – | \$258.34 | \$40.00 | \$0.109 | 5.26 | 1.83 | 1 |
| Green Motors Program Rewind: Motor size 50 HP | Green Motors Program Rewind: Motor size 50 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 17 | 604.21 | \$572.46 | – | \$285.99 | \$50.00 | \$0.109 | 4.94 | 1.79 | 1 |
| Green Motors Program Rewind: Motor size 60 HP | Green Motors Program Rewind: Motor size 60 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 21 | 553.16 | \$584.07 | – | \$337.29 | \$60.00 | \$0.109 | 4.86 | 1.62 | 1 |
| Green Motors Program Rewind: Motor size 75 HP | Green Motors Program Rewind: Motor size 75 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 21 | 569.29 | \$601.10 | – | \$364.58 | \$75.00 | \$0.109 | 4.39 | 1.55 | 1 |
| Green Motors Program Rewind: Motor size 100 HP | Green Motors Program Rewind: Motor size 100 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 21 | 751.39 | \$793.38 | – | \$452.26 | \$100.00 | \$0.109 | 4.36 | 1.63 | 1 |
| Green Motors Program Rewind: Motor size 125 HP | Green Motors Program Rewind: Motor size 125 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 23 | 555.70 | \$612.06 | – | \$327.44 | \$125.00 | \$0.109 | 3.30 | 1.74 | 1 |
| Green Motors Program Rewind: Motor size 150 HP | Green Motors Program Rewind: Motor size 150 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 23 | 660.58 | \$727.58 | – | \$364.73 | \$150.00 | \$0.109 | 3.28 | 1.83 | 1 |
| Green Motors Program Rewind: Motor size 200 HP | Green Motors Program Rewind: Motor size 200 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 23 | 876.20 | \$965.07 | – | \$439.08 | \$200.00 | \$0.109 | 3.27 | 1.99 | 1 |
| Green Motors Program Rewind: Motor size 250 HP | Green Motors Program Rewind: Motor size 250 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 19 | 1,357.04 | \$1,363.62 | – | \$564.34 | \$250.00 | \$0.109 | 3.43 | 2.11 | 1 |
| Green Motors Program Rewind: Motor size 300 HP | Green Motors Program Rewind: Motor size 300 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 19 | 1,620.02 | \$1,627.87 | – | \$570.43 | \$300.00 | \$0.109 | 3.42 | 2.40 | 1 |
| Green Motors Program Rewind: Motor size 350 HP | Green Motors Program Rewind: Motor size 350 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 19 | 1,888.64 | \$1,897.79 | – | \$597.88 | \$350.00 | \$0.109 | 3.41 | 2.60 | 1 |
| Green Motors Program Rewind: Motor size 400 HP | Green Motors Program Rewind: Motor size 400 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 19 | 2,141.43 | \$2,151.81 | – | \$667.77 | \$400.00 | \$0.109 | 3.40 | 2.63 | 1 |
| Green Motors Program Rewind: Motor size 450 HP | Green Motors Program Rewind: Motor size 450 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 19 | 2,405.07 | \$2,416.73 | – | \$729.93 | \$450.00 | \$0.109 | 3.39 | 2.68 | 1 |
| Green Motors Program Rewind: Motor size 500 HP | Green Motors Program Rewind: Motor size 500 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 19 | 2,676.03 | \$2,689.00 | – | \$788.57 | \$500.00 | \$0.109 | 3.40 | 2.74 | 1 |
| Green Motors Program Rewind: Motor size 600 HP | Green Motors Program Rewind: Motor size 600 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 24 | 4,113.93 | \$4,617.22 | – | \$1,557.60 | \$600.00 | \$0.109 | 4.40 | 2.53 | 1 |
| Green Motors Program Rewind: Motor size 700 HP | Green Motors Program Rewind: Motor size 700 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 24 | 4,779.22 | \$5,363.90 | – | \$1,699.33 | \$700.00 | \$0.109 | 4.39 | 2.66 | 1 |
| Green Motors Program Rewind: Motor size 800 HP | Green Motors Program Rewind: Motor size 800 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 24 | 5,450.38 | \$6,117.17 | – | \$1,885.45 | \$800.00 | \$0.109 | 4.39 | 2.71 | 1 |

| Measure Name | Measure Descriptions | Replacing | Measure Unit | End Use | Measure Life (yrs) ^a | Benefit | | | Cost | | | B/C Tests | | Source/ Notes |
|--|--|--------------------------|--------------|--------------------------------|---------------------------------|---|------------------------------------|-----|---|-----------------|----------------------------------|------------------------|------------------------|---------------|
| | | | | | | Annual Gross Energy Savings (kWh/yr) ^b | NPV DSM Avoided Costs ^c | NEB | Gross Incremental Participant Cost ^d | Incentive/ Unit | Admin Cost (\$/kWh) ^e | UCT Ratio ^f | TRC Ratio ^g | |
| Green Motors Program Rewind: Motor size 900 HP | Green Motors Program Rewind: Motor size 900 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 24 | 6,118.68 | \$6,867.22 | – | \$2,078.63 | \$900.00 | \$0.109 | 4.38 | 2.75 | 1 |
| Green Motors Program Rewind: Motor size 2000 HP | Green Motors Program Rewind: Motor size 2000 HP | Standard rewind practice | Motor | A-Irr-Irr-Irrigation-All-All-E | 24 | 11,137.11 | \$12,499.59 | \$- | \$3,924.70 | \$2,000.00 | \$0.109 | 3.11 | 2.31 | 1 |

^a Average measure life.

^b Estimated kWh savings measured at the customer's meter, excluding line losses.

^c NPV of DSM avoided costs. Based on end use load shape, measure life, savings including line losses, and avoided costs by pricing period as acknowledged in the 2021 IRP. TRC Test Benefit calculation includes 10% conservation adder from the Northwest Power Act

^d Incremental participant cost prior to customer incentives.

^e Average program administration and overhead costs to achieve each kWh of savings. Calculated from 2023 actuals.

^f UCT Ratio = (NPV DSM Avoided Costs) / ((Admin Cost/kWh * kWh Savings) + Incentives)

^g TRC Ratio = ((NPV DSM Avoided Costs * 110%) + NEB) / ((Admin Cost/kWh * kWh Savings) + Incentives + (Incremental Participant Cost - Incentives))

^h RTF. Ind_and_Ag_GreenMotorRewind_v4_0.xlsm. 2022.