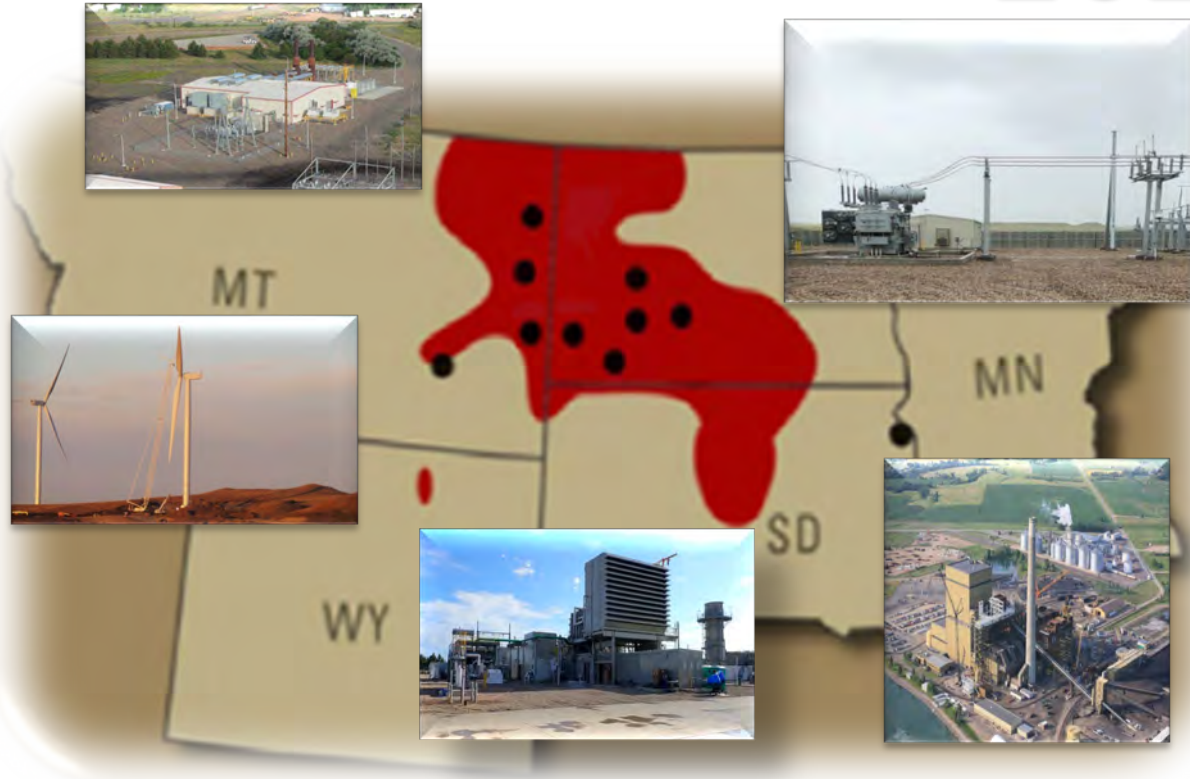




Integrated Resource Plan 2024



**Submitted to the
North Dakota Public Service Commission
July 12, 2024**

Volume III: Attachment B

Montana-Dakota Utilities Co.
2024 Integrated Resource Plan

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Volume III
Attachment B



Attachment B

DEMAND-SIDE ANALYSIS DOCUMENTATION

Demand-Side Analysis

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Appendix A – Energy Efficiency Potential Study Report

DEMAND-SIDE ANALYSIS

Overview

Montana-Dakota recognizes the value that Demand-Side Management (DSM) can play in meeting its customer's future energy requirements with the growing demand for electricity and the need for additional supply-side resources. However, the implementation of DSM programs cannot be done without cost consideration to the customers and the Company's shareholders. Interests need to be balanced to achieve results at an affordable cost to both the utility and its customers. Montana-Dakota has focused on a defined list of DSM programs that are best suited for the Company's load shape as identified in the Energy Efficiency Potential Study.

Montana-Dakota's DSM analysis is completed on a state-by-state approach (Montana, North Dakota, and South Dakota) versus an Integrated System approach, due to the complexities of offering DSM programs across multiple jurisdictions and then in total for the Integrated System. The true value of DSM can only be achieved as an integrated resource implemented across all jurisdictions; however, cost recovery is necessary in each jurisdiction for full implementation to occur. In some cases, particularly in the case of demand response programs, the cost of infrastructure is such that if full system implementation is not achieved, the program may not be feasible.

Energy Efficiency

Provided in this Attachment is a detailed discussion of Montana-Dakota's demand-side analysis and approach. To fully implement any of the described programs, Montana-Dakota will seek, and must have, regulatory approval and cost recovery.

In late 2022, Montana-Dakota began the process of undergoing an Electric Energy Efficiency Potential Study (Potential Study), which was completed in October 2023. Montana-Dakota selected GDS Associates, Inc. (GDS) to assess the electric energy efficiency savings potential in Montana-Dakota's electric service territory. This study provided the Technical, Economic and Achievable potential energy savings by state (Montana, North Dakota, and South Dakota). Also included in this study was primary market research to provide updated equipment saturation and efficiency characteristics of Montana-Dakota's customers as well as measure customer willingness to participate in energy efficiency programs/measures. Along with the results of Potential Study, GDS provided an energy efficiency program portfolio recommendation for both residential and commercial customers. A key consideration in the study was to monitor the state

level programs resulting from the Inflation Reduction Act (IRA) funding and design programs that would maximize energy savings, but not overlap the IRA funded state programs.

Based on the results of the GDS Potential Study, the integrated system achievable annual energy reduction is estimated to be 0.84 percent of annual energy sales (MWh) and 4.37% of demand (MW) savings in 2043.

The Montana service territory achievable potential identified in the GDS Potential Study is estimated to be 0.82 percent of energy sales in Montana over the IRP planning period. Table B-1 contains the estimated achievable potential for the Montana service territory.

The North Dakota service territory achievable potential identified in the GDS Potential Study is estimated to be 0.84 percent of energy sales in North Dakota over the IRP planning period. Table B-2 below contains the estimated achievable potential for the North Dakota service territory.

The South Dakota service territory achievable potential identified in the GDS Potential Study is estimated to be 0.92 percent of energy sales in South Dakota over the IRP planning period. Table B-3 contains the estimated achievable potential for the Montana service territory.

Table B-1: Montana Achievable Energy Efficiency (MWh)

YEAR	Residential Sales (MWh)	Residential Achievable EE %	Residential Achievable MWh	Small C&I Sales (MWh)	Small C&I Achievable EE %	Small C&I Achievable MWh	Large C&I Sales (MWh)	Large C&I Achievable EE %	Large C&I Achievable MWh	Street Lighting Sales (MWh)	Street Lighting Achievable EE %	Miscellaneous Sales (MWh)	Miscellaneous Achievable EE %	Total Sales (MWh)	Total Achievable EE %	Total Achievable MWh
2024	187,067	0.30%	561	132,310	1.10%	1,455	410,786	0.80%	3,286	2,913	0.00%	7,304	0.00%	740,380	0.72%	5,303
2025	187,747	0.40%	751	132,981	1.10%	1,463	411,697	0.80%	3,294	2,913	0.00%	7,304	0.00%	742,642	0.74%	5,507
2026	188,001	0.50%	940	133,655	1.10%	1,470	413,049	0.80%	3,304	2,913	0.00%	7,304	0.00%	744,922	0.77%	5,715
2027	188,255	0.50%	941	134,333	1.00%	1,343	414,416	0.70%	2,901	2,913	0.00%	7,304	0.00%	747,221	0.69%	5,186
2028	188,509	0.60%	1,131	134,872	1.00%	1,349	415,399	0.70%	2,908	2,913	0.00%	7,304	0.00%	748,998	0.72%	5,388
2029	188,763	0.70%	1,321	135,554	1.00%	1,356	416,765	0.70%	2,917	2,913	0.00%	7,304	0.00%	751,300	0.74%	5,594
2030	189,021	0.80%	1,512	136,240	1.10%	1,499	418,151	0.80%	3,345	2,913	0.00%	7,304	0.00%	753,629	0.84%	6,356
2031	189,532	0.90%	1,706	136,929	1.10%	1,506	419,412	0.80%	3,355	2,913	0.00%	7,304	0.00%	756,089	0.87%	6,567
2032	190,042	1.00%	1,900	137,621	1.10%	1,514	420,824	0.80%	3,367	2,913	0.00%	7,304	0.00%	758,704	0.89%	6,781
2033	190,552	1.10%	2,096	138,316	1.20%	1,660	422,237	0.80%	3,378	2,913	0.00%	7,304	0.00%	761,322	0.94%	7,134
2034	191,062	1.20%	2,293	139,015	1.20%	1,668	423,665	0.80%	3,389	2,913	0.00%	7,304	0.00%	763,959	0.96%	7,350
2035	191,567	1.20%	2,299	139,718	1.10%	1,537	425,108	0.70%	2,976	2,913	0.00%	7,304	0.00%	766,609	0.89%	6,811
2036	192,136	1.30%	2,498	140,423	1.20%	1,685	426,582	0.80%	3,413	2,913	0.00%	7,304	0.00%	769,358	0.99%	7,596
2037	192,704	1.30%	2,505	141,133	1.10%	1,552	428,061	0.70%	2,996	2,913	0.00%	7,304	0.00%	772,114	0.91%	7,054
2038	193,272	1.30%	2,513	141,845	0.90%	1,277	429,374	0.60%	2,576	2,913	0.00%	7,304	0.00%	774,709	0.82%	6,365
2039	193,841	1.30%	2,520	142,561	1.00%	1,426	430,867	0.60%	2,585	2,913	0.00%	7,304	0.00%	777,486	0.84%	6,531
2040	194,409	1.30%	2,527	143,281	0.90%	1,290	432,384	0.60%	2,594	2,913	0.00%	7,304	0.00%	780,291	0.82%	6,411
2041	194,996	1.30%	2,535	144,004	0.90%	1,296	433,910	0.50%	2,170	2,913	0.00%	7,304	0.00%	783,127	0.77%	6,001
2042	195,583	1.30%	2,543	144,731	0.80%	1,158	435,453	0.50%	2,177	2,913	0.00%	7,304	0.00%	785,984	0.75%	5,878
2043	196,170	1.30%	2,550	145,470	0.80%	1,164	437,018	0.50%	2,185	2,913	0.00%	7,304	0.00%	788,874	0.75%	5,899
Cumulative														15,267,718	0.82%	125,426

Table B-2: North Dakota Achievable Energy Efficiency (MWh)

	Residential Achievable			Small C&I Achievable			Large C&I Achievable			Street Lighting Achievable		Miscellaneous Achievable		Total Sales Achievable		
YEAR	Sales (MWh)	EE %	MWh	Sales (MWh)	EE %	MWh	Sales (MWh)	EE %	MWh	Sales (MWh)	EE %	Sales (MWh)	EE %	Sales (MWh)	EE %	MWh
2024	794,164	0.30%	2,382	543,850	1.10%	5,982	716,088	0.60%	4,297	13,651	0.00%	56,012	0.00%	2,123,765	0.60%	12,661
2025	796,040	0.40%	3,184	546,565	1.20%	6,559	719,503	0.70%	5,037	13,651	0.00%	56,012	0.00%	2,131,772	0.69%	14,779
2026	800,407	0.50%	4,002	548,723	1.10%	6,036	722,225	0.70%	5,056	13,651	0.00%	56,012	0.00%	2,141,019	0.70%	15,094
2027	804,775	0.50%	4,024	551,457	1.10%	6,066	725,698	0.70%	5,080	13,651	0.00%	56,012	0.00%	2,151,593	0.71%	15,170
2028	809,141	0.60%	4,855	553,616	1.10%	6,090	728,482	0.60%	4,371	13,651	0.00%	56,012	0.00%	2,160,902	0.71%	15,316
2029	813,508	0.70%	5,695	556,367	1.10%	6,120	732,020	0.70%	5,124	13,651	0.00%	56,012	0.00%	2,171,558	0.78%	16,939
2030	817,876	0.80%	6,543	558,525	1.20%	6,702	734,802	0.70%	5,144	13,651	0.00%	56,012	0.00%	2,180,866	0.84%	18,389
2031	825,232	0.90%	7,427	561,294	1.20%	6,736	738,186	0.70%	5,167	13,651	0.00%	56,012	0.00%	2,194,375	0.88%	19,330
2032	832,590	0.90%	7,493	564,077	1.20%	6,769	741,753	0.70%	5,192	13,651	0.00%	56,012	0.00%	2,208,082	0.88%	19,454
2033	839,946	1.00%	8,399	566,873	1.20%	6,802	745,337	0.70%	5,217	13,651	0.00%	56,012	0.00%	2,221,820	0.92%	20,419
2034	847,304	1.10%	9,320	569,683	1.20%	6,836	748,955	0.80%	5,992	13,651	0.00%	56,012	0.00%	2,235,605	0.99%	22,148
2035	854,660	1.10%	9,401	572,508	1.10%	6,298	752,603	0.70%	5,268	13,651	0.00%	56,012	0.00%	2,249,433	0.93%	20,967
2036	863,190	1.10%	9,495	575,346	1.20%	6,904	756,286	0.80%	6,050	13,651	0.00%	56,012	0.00%	2,264,485	0.99%	22,450
2037	871,719	1.10%	9,589	578,198	1.10%	6,360	759,997	0.70%	5,320	13,651	0.00%	56,012	0.00%	2,279,577	0.93%	21,269
2038	880,249	1.10%	9,683	581,064	1.00%	5,811	763,503	0.70%	5,345	13,651	0.00%	56,012	0.00%	2,294,479	0.91%	20,838
2039	888,778	1.10%	9,777	583,945	1.00%	5,839	767,250	0.70%	5,371	13,651	0.00%	56,012	0.00%	2,309,636	0.91%	20,987
2040	897,307	1.10%	9,870	586,840	1.00%	5,868	771,032	0.70%	5,397	13,651	0.00%	56,012	0.00%	2,324,842	0.91%	21,136
2041	908,182	1.10%	9,990	589,749	0.90%	5,308	774,835	0.60%	4,649	13,651	0.00%	56,012	0.00%	2,342,429	0.85%	19,947
2042	919,056	1.10%	10,110	592,671	0.90%	5,334	778,666	0.60%	4,672	13,651	0.00%	56,012	0.00%	2,360,057	0.85%	20,116
2043	929,931	1.10%	10,229	595,664	0.90%	5,361	782,549	0.60%	4,695	13,651	0.00%	56,012	0.00%	2,377,808	0.85%	20,286
Cumulative														44,724,101	0.84%	377,694

Table B-3: South Dakota Achievable Energy Efficiency (MWh)

YEAR	Residential			Small C&I			Large C&I			Street Lighting		Miscellaneous		Total Sales		
	Sales (MWh)	Achievable EE %	Achievable MWh	Sales (MWh)	Achievable EE %	Achievable MWh	Sales (MWh)	Achievable EE %	Achievable MWh	Sales (MWh)	Achievable EE %	Sales (MWh)	Achievable EE %	Sales (MWh)	Achievable EE %	Achievable MWh
2024	67,080	0.30%	201	36,731	1.10%	404	34,961	0.90%	315	1,208	0.00%	2,005	0.00%	141,984	0.65%	920
2025	67,114	0.40%	268	36,934	1.10%	406	35,399	0.90%	319	1,208	0.00%	2,005	0.00%	142,660	0.70%	993
2026	67,375	0.40%	270	37,138	1.10%	409	35,896	0.90%	323	1,208	0.00%	2,005	0.00%	143,622	0.70%	1,001
2027	67,637	0.50%	338	37,343	1.00%	373	36,386	0.90%	327	1,208	0.00%	2,005	0.00%	144,579	0.72%	1,039
2028	67,898	0.50%	339	37,511	1.00%	375	36,848	0.80%	295	1,208	0.00%	2,005	0.00%	145,469	0.69%	1,009
2029	68,159	0.60%	409	37,718	1.10%	415	37,360	0.90%	336	1,208	0.00%	2,005	0.00%	146,450	0.79%	1,160
2030	68,420	0.70%	479	37,926	1.10%	417	37,874	0.90%	341	1,208	0.00%	2,005	0.00%	147,433	0.84%	1,237
2031	68,953	0.80%	552	38,136	1.20%	458	38,386	1.00%	384	1,208	0.00%	2,005	0.00%	148,688	0.94%	1,393
2032	69,486	0.90%	625	38,346	1.10%	422	38,934	1.00%	389	1,208	0.00%	2,005	0.00%	149,980	0.96%	1,437
2033	70,019	1.00%	700	38,558	1.20%	463	39,473	1.00%	395	1,208	0.00%	2,005	0.00%	151,263	1.03%	1,558
2034	70,552	1.10%	776	38,771	1.20%	465	40,019	1.00%	400	1,208	0.00%	2,005	0.00%	152,556	1.08%	1,642
2035	71,085	1.10%	782	38,985	1.10%	429	40,573	1.00%	406	1,208	0.00%	2,005	0.00%	153,857	1.05%	1,617
2036	71,725	1.10%	789	39,201	1.20%	470	41,142	1.00%	411	1,208	0.00%	2,005	0.00%	155,281	1.08%	1,671
2037	72,365	1.10%	796	39,417	1.10%	434	41,713	1.00%	417	1,208	0.00%	2,005	0.00%	156,708	1.05%	1,647
2038	73,004	1.10%	803	39,635	1.00%	396	42,262	0.90%	380	1,208	0.00%	2,005	0.00%	158,114	1.00%	1,580
2039	73,644	1.20%	884	39,854	1.00%	399	42,847	0.90%	386	1,208	0.00%	2,005	0.00%	159,557	1.05%	1,668
2040	74,284	1.20%	891	40,074	1.00%	401	43,439	0.90%	391	1,208	0.00%	2,005	0.00%	161,010	1.05%	1,683
2041	75,136	1.20%	902	40,295	0.90%	363	44,041	0.80%	352	1,208	0.00%	2,005	0.00%	162,685	0.99%	1,617
2042	75,989	1.20%	912	40,517	0.90%	365	44,651	0.80%	357	1,208	0.00%	2,005	0.00%	164,370	0.99%	1,634
2043	76,842	1.20%	922	40,742	0.80%	326	45,272	0.80%	362	1,208	0.00%	2,005	0.00%	166,069	0.97%	1,610
Cumulative														3,052,334	0.92%	28,114

Demand Response

As discussed later in this Attachment, Montana-Dakota continues to pursue a demand response portfolio that includes a Commercial Demand Response Resources (DRR) Program and the Company's current Interruptible Demand Response rates available in Montana and North Dakota. These two programs at year end 2023 combine to offer approximately 36.2 MW of demand response to Montana-Dakota's integrated system. The demand response goal from the two programs is 60MW by 2027 or 10.5 percent of the total forecasted Integrated System peak demand in 2024.

DSM Program Overview

Although the Potential Study provided a portfolio of program recommendations for Residential Customers, Low-Income Residential Customers, Commercial Prescriptive Programs and Commercial Custom Programs, Montana-Dakota is monitoring activity for the types of programs that will be offered by each state through the IRA funding they receive. Currently, there have not been any plans implemented in Montana, North Dakota, or South Dakota but anticipates programs will be ramped up in the next 1-2 years.

Montana-Dakota proposes to continue to offer the existing portfolio of programs and evaluate each state's plan as it becomes available. After review, Montana-Dakota will evaluate the implementation of programs that will complement the state programs funded through the IRA, to maximize energy savings.

Montana-Dakota currently offers Energy Efficiency DSM Programs only in the company's Montana service territory. These programs are funded through the Universal Systems Benefit Charge. Demand Response DSM Programs are available to commercial customers in Montana, North Dakota, and South Dakota.

The following is an overview of program details associated with the portfolio of DSM measures currently offered. The overview provides a program description, jurisdictions where the program is offered, DSM measures included in the program, incentive levels, and the marketing and promotion plan for the program.

Residential LED Lighting Program

This program offers rebates to Montana-Dakota residential customers when they purchase and install LED lighting versus incandescent and compact fluorescent lighting (CFL) in single family dwellings. The program is available to existing customers and new construction.

The program provides a rebate on a per bulb basis (limited to 40 bulbs per residential electric account) and is available as a mail-in rebate application form.

Program Incentive:

Measure	Incentive Level
Residential LED Lighting (A-line, 40W, 60W 75W and 100W equivalent)	50% of bulb or package cost not to exceed \$5 per bulb
Residential LED Lighting (Globe, Indoor Flood and Outdoor Flood)	50% of bulb or package cost not to exceed \$7 per bulb

Montana-Dakota will effectively market the program through the following:

- Website and social media
- Bill inserts
- Online advertising and billboards

Commercial Lighting Program

The Commercial Lighting program offers an array of prescriptive rebates to capture most of the common retrofit lighting applications. The prescriptive rebate levels are individually designed to maximize customer participation and cost effectiveness. The program also includes rebates for lighting controls and occupancy sensors that will minimize runtimes. A custom lighting efficiency option also offers rebates for projects that are non-prescriptive, however most applications should be covered in the prescriptive program.

This program is available to Montana-Dakota's commercial customers served under a general service electric tariff.

Incentive levels are specific to the prescriptive application and first year energy savings for the custom efficiency projects and customer rebates are capped at 50% of the equipment cost. The

benefit cost modeling for this program assumes the average customer rebate level will be \$0.09 per kWh saved.

Montana-Dakota will market the program through the following:

- Company Website
- Key account representatives

Commercial Partnership Program

This program offers rebates to Montana-Dakota's commercial and industrial customers who install energy conservation measures that are not eligible under the prescriptive rebates due to the variability in the energy savings and cost of the project. Rebates are based on the amount of energy savings, and the project must pass the Total Resource Cost test (TRC) with a Benefit/Cost ratio greater than one. This program is available to Montana-Dakota's general service electric customers in Montana.

The commercial partnership program is designed to lower the initial cost of various energy-efficient upgrades that are not available for any of the prescriptive rebates. While the incentive levels for this program are project specific, other criteria under this program are:

- Equipment installed must be more efficient than the industry standard,
- Simple payback must be greater than 1 year,
- Rebate cannot exceed 50 percent of the incremental cost of the equipment,
- Rebate will be based on the amount of energy and demand saved,
- Weatherization is not eligible for a rebate,
- Distributed renewable generation such as solar and wind under 50 kW will be considered under a net metering arrangement,
- Additional measurement and verification of the energy savings maybe required; and
- Rebate is also available to new construction.

The incentive levels for this program will be project specific. Montana-Dakota will market the program through the following:

- Website
- Key account representatives
- HVAC contractor relationships

Commercial Demand Response Resources (DRR) Program

The Commercial DRR Program was launched in June of 2012 and is offered to commercial and industrial electric customers with a load of 25 kW or higher, with a priority focused on customers with loads of 150 kW or higher. This program is administered by a third-party demand response aggregator under contract with Montana-Dakota. The third-party aggregator is responsible for customer enrollment, settlement, and administration of the program on behalf of Montana-Dakota. This program is available to commercial and industrial electric customers in Montana, North Dakota, and South Dakota.

The program applies to commercial and industrial electric customers who agree to shed non-critical load during a demand response event initiated by Montana-Dakota. The program provides for a one-hour notification of an event, with a four-hour maximum event period, and up to 50 hours per year.

Participating customers will receive a capacity and energy payment for participating in the program, and payment amounts will be pursuant to a negotiated contract between the customer and the third-party aggregator, who is marketing the program on behalf of Montana-Dakota.

Montana-Dakota promotes the program with support from the third-party aggregator's marketing and promotion efforts through the following:

- Key account representatives,
- Website,
- Webinars,
- Direct Mail and Email.

Interruptible Demand Response Rate

The Interruptible Demand Response Rate has been available for several years and is offered to commercial and industrial electric customers with loads of 500 kW or higher. This program is administered by Montana-Dakota and the rate is offered as an optional rate for customers to consider for their power service. The rates reflect a discounted demand charge in exchange for the load being available to call upon for reduction during demand response events. This program is available to commercial and industrial electric customers in Montana and North Dakota.

The program applies to commercial and industrial electric customers who agree to shed their entire load during a demand response event initiated by Montana-Dakota. The program provides for a one-hour notification of an event, with no maximum event time period, and up to 100 hours per year.

Montana-Dakota's marketing and promotion efforts are primarily through the following:

- Key account representatives,
- Website,
- Architect and engineering contractors.

DSM Methodology

To balance all interests and achieve cost-effective DSM for customers and utility shareholders, a cost-benefit analysis from different perspectives was performed on potential DSM measures. The perspectives or "tests" are not intended to be used individually or in isolation, rather they must be compared to each other. This multi-perspective approach will allow consideration of tradeoffs between the various tests. However, the impacts measured from the Total Resource Cost Test will necessarily determine if a program is economically feasible. Once a program is determined feasible, all other test results are considered to determine if a program will be implemented.

Therefore, even if a program is feasible, it may not be implemented due to tradeoffs with other tests and other identified factors.

Benefit/Cost Analysis

GDS completed the benefit/cost analysis as part of the Potential Study. GDS used a Microsoft Excel© spreadsheet-based model (GDS Potential Study Model-Program Planner) to run benefit/cost analyses for each considered DSM program in the Potential Study. The basic function of this evaluation tool is to calculate each DSM program's benefits and costs over its projected life on a discounted cash flow basis and determine its cost effectiveness on a stand-alone basis. The programs were evaluated using four different cost-effectiveness tests:

- Participant Test (PCT) considers the economic impact of a program on the participating customers,
- Utility Test (UCT) considers the impact on the utility,

- Ratepayer Test (RIM) includes quantifiable benefits and costs of a given program and considers its impact on ratepayers, and
- Total Resource Cost Test (TRC) reflects the total benefits and costs to all customers (both the participants and non-participants).

For each test, the merits of the DSM program are evaluated based on the net present value (NPV) of the annual benefits and costs over the analysis horizon. The NPV calculation is based on the discount rate associated with each test and assumes the cash flows occur at the end of the year. The following section explains the process of evaluating the programs from each of the four perspectives.

Participant Test

The Participant Test is a measure of the quantifiable benefits and costs brought about by a customer's participation in a DSM program. For purposes of evaluating the merits of a DSM program, quantifiable benefits include any incentives received by a participant and the reduction in a participant's electric bill through reduced energy use and/or demand. Quantifiable costs include any costs the customer incurs to participate in a DSM program, such as increased appliance costs or the availability of a back-up fuel source. The NPV calculation is based on the participant discount rate. The participant net benefit is calculated by the following equation:

$$\text{Net Benefit} = \text{Total Annual Benefits} - \text{Total Annual Costs}$$

where

$$\text{PCT Benefits} = (\text{Incentive Payments}) + (\text{Lifetime NPV Bill Savings})$$

$$\text{PCT Costs} = (\text{Incremental and O\&M NPV Measure Costs})$$

A benefit/cost ratio greater than one for the Participant Test indicates the DSM program will result in savings to the participant over the life of the program.

Ratepayer Test

The Ratepayer Test is a measure of the quantifiable benefits and costs the utility incurs because of customer participation in a DSM program. For purposes of evaluating the merits of a DSM program, quantifiable benefits include any reduction in purchased power costs due to decreased customer energy and demand, along with a reduction in variable operation and maintenance costs. Quantifiable costs to the utility include incentive and administrative costs, along with the loss of electric margin due to reduced sales. The NPV calculation is based on the utility discount

rate. The utility net benefit is calculated by the following equation:

$$\text{Net Benefit} = \text{Annual Cost of Energy Saved} - \text{Annual Project Costs}$$

where

$$\text{RIM Costs} = (\text{Admin Costs}) + (\text{Incentive Payments}) + (\text{Lifetime NPV Lost Revenue})$$

$$\text{RIM Benefits} = (\text{Lifetime NPV Avoided Energy Costs})$$

A benefit/cost ratio greater than one for the Ratepayer Test indicates the DSM program will reduce overall rates.

Utility Test

The Utility Test is a measure of the quantifiable benefits and costs placed on ratepayers due to changes in the utility's revenues and operating costs because of the DSM program. The Utility test includes the same benefits and costs as the Ratepayer Test, except the quantifiable costs exclude lost margin. The NPV calculation is based on the utility discount rate. The ratepayer net benefit is calculated by the following equation:

$$\text{Net Benefit} = \text{Annual Cost of Energy Saved} - \text{Annual Project Costs}$$

where

$$\text{UCT Costs} = (\text{Admin Costs}) + (\text{Incentive Payments}); \text{ can be considered program budget}$$

$$\text{UCT Benefits} = (\text{Lifetime NPV Avoided Energy Costs})$$

A benefit/cost ratio greater than one for the Utility Test indicates the cost of energy saved is greater than the cost of saving the energy.

Total Resource Cost Test (TRC)

The Total Resource Cost Test (TRC) reflects the total benefits and costs to all customers (participants and non-participants) in the utility service territory. The key difference between the TRC and utility test is that the TRC does not include program incentives, which are considered zero net transfers from a regional perspective. Instead, the TRC includes the net measures costs and net avoided costs. The NPV calculation is based on the utility discount rate. The total cost net benefit is calculated by the following equation:

$$\text{Net Benefit} = \text{Annual Cost of Energy Saved} - \text{Annual Project Costs}$$

where

$$\text{TRC Costs} = (\text{Admin Costs}) + (\text{Incremental and O\&M NPV Measure Costs})$$

$$\text{TRC Benefits} = (\text{Lifetime NPV Avoided Energy Costs}) + (\text{Tax Credits})$$

A benefit/cost ratio greater than one for the TRC Test indicates the DSM program is cost effective to all customers, both participating and non-participating.

DSM Model Results

GDS completed the benefit/cost modeling and portfolio design as part of the Potential Study. GDS in the Potential Study, developed a portfolio of programs for Montana, North Dakota, and South Dakota. A summary by state of the cost-benefit ratios for the portfolio of programs chosen is shown in Tables B-4 (Montana), B-5 (North Dakota), and B-6 (South Dakota).

Montana-Dakota Utilities Co.
Montana Electric DSM Program Summary
Table B-4

Benefit/Cost Ratios					
DSM Program	Customer Class	Ratepayer RIM	Utility UCT	Participant PCT	Total Resource TRC
Total Portfolio		0.23	2.09	12.09	1.39
Residential Programs					
Home Energy Improvement (HEI) Program	Residential	0.19	0.90	7.70	0.71
Residential Low-Income Program	Residential	0.17	0.57	6.92	0.68
Commercial Programs					
Commercial & Industrial Prescriptive Program	Commercial	0.24	2.68	12.50	1.69
Commercial & Industrial Custom Program	Commercial	0.24	2.43	17.76	1.64

Montana-Dakota Utilities Co.
North Dakota Electric DSM Program Summary
Table B-5

Benefit/Cost Ratios					
DSM Program	Customer Class	Ratepayer RIM	Utility UCT	Participant PCT	Total Resource TRC
Total Portfolio		0.24	2.29	15.78	1.51
Residential Programs					
Home Energy Improvement (HEI) Program	Residential	0.21	1.47	12.88	1.09
Residential Low-Income Program	Residential	0.17	0.60	7.88	0.64
Commercial Programs					
Commercial & Industrial Prescriptive Program	Commercial	0.25	3.07	16.94	1.90
Commercial & Industrial Custom Program	Commercial	0.25	2.49	19.70	1.65

Montana-Dakota Utilities Co.
South Dakota Electric DSM Program Summary
Table B-6

Benefit/Cost Ratios					
DSM Program	Customer Class	Ratepayer RIM	Utility UCT	Participant PCT	Total Resource TRC
Total Portfolio		0.23	2.30	16.24	1.56
Residential Programs					
Home Energy Improvement (HEI) Program	Residential	0.19	1.07	8.25	0.83
Residential Low-Income Program	Residential	0.15	0.42	4.99	0.44
Commercial Programs					
Commercial & Industrial Prescriptive Program	Commercial	0.24	3.25	18.65	1.94
Commercial & Industrial Custom Program	Commercial	0.23	2.08	24.08	1.53

The overall results show that the programs are cost effective at the portfolio level in each state based on the TRC test. The GDS Team conducted research and analysis to provide a recommendation for Montana-Dakota Utilities to consider as potential improvements to their electric energy efficiency program portfolio. The primary objective is to expand energy efficiency for all customers and to offer sector specific programs for residential, and commercial & industrial customers. The GDS Team combined market research of regional peer electric energy efficiency programs with the realistic potential outcomes from the marker potential assessment, in addition to current industry trends and best practices. This activity was not a comprehensive portfolio optimization analysis, instead priorities focused on energy efficiency offerings for all customers. There may be additional factors beyond the scope of this analysis that would make certain considerations presented here infeasible for Montana-Dakota to pursue or concepts that need to be tested with actual market conditions. The analysis approach is further discussed in Section 6 of the Potential study in Attachment A.

Appendix A

**Energy Efficiency Potential
Study Report**

PREPARED BY GDS ASSOCIATES, INC.

Montana Dakota Utilities (MDU)

***2023 Electric Energy Efficiency
Potential Study for the MDU
Integrated System (MT-ND-SD)
Territory – FINAL REPORT***

October 2023

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1 Executive Summary

1.1 BACKGROUND

Montana-Dakota Utilities (MDU) commissioned GDS Associates (“GDS”) and Brightline Group, collectively, “the GDS Team”, to assess electric energy efficiency savings potential in the MDU electric service area to help inform future planning efforts. This energy efficiency potential report focuses on the MDU Integrated System¹ (includes the Montana, North Dakota, and South Dakota electric services areas), and provides a roadmap and identifies the energy efficiency measures having the greatest potential savings and the measures that are the most cost-effective. In addition to technical and economic potential estimates, the development of achievable potential estimates for a range of feasible energy efficiency measures is useful for program planning and modification purposes. Unlike achievable potential estimates, technical and economic potential estimates do not include customer acceptance considerations for energy efficiency measures, which are often among the most important factors when estimating the likely customer response to new programs. Following the development of achievable potential, program design and delivery recommendations were developed in coordination with MDU staff.

All energy efficiency results were developed using customized residential, commercial, and industrial sector-level energy efficiency potential assessment Excel models and Company-specific cost effectiveness criteria including the most recent MDU avoided energy and capacity cost projections for electricity for each state.

The results of this study provide detailed information on measures that are cost-effective and have potential kWh and kW savings. The data referenced in this report were the best available at the time this analysis was developed. As building and appliance codes and energy efficiency standards change, and as energy prices fluctuate, additional opportunities for energy efficiency may occur while current practices may become outdated.

1.2 STUDY SCOPE

This study examines the potential to reduce electric consumption and peak demand through the implementation of DSM technologies and practices in residential, commercial, and industrial facilities. The study assessed energy efficiency potential throughout MDU’s Integrated System over twenty years, from 2024 through 2043.

The scope of this study distinguishes three types of energy efficiency potential: (1) technical, (2) economic, and (3) achievable.

- **Technical Potential** is the theoretical maximum amount of energy use that could be displaced by efficiency, disregarding all non-engineering constraints such as cost-effectiveness and the willingness of end users to adopt the efficiency measures. Technical potential is constrained only by factors such as technical feasibility and applicability of measures.
- **Economic Potential** refers to the subset of the technical potential that is economically cost-effective as compared to conventional supply-side energy resources. Economic potential follows the same adoption rates as technical potential. Like technical potential, the economic scenario ignores market barriers to ensuring actual implementation of efficiency. Finally, economic potential only considers the costs of

¹ The MDU-Wyoming electric service area and associated market potential is addressed in a separate report.

efficiency measures themselves, ignoring any programmatic costs (e.g., marketing, analysis, administration) that would be necessary to capture them.²

- **Achievable Potential** is the amount of energy use that efficiency can realistically be expected to displace, assuming the most aggressive program scenario possible (e.g., providing end users with payments for the entire incremental cost of more efficient equipment). Achievable potential considers real-world barriers to encouraging end users to adopt efficiency measures, the non-measure costs of delivering programs (for administration, marketing, tracking systems, and monitoring and evaluation), and the capability of programs and administrators to boost program activity over time. The study assessed two types of achievable potential: maximum (MAP) and realistic (RAP).

GDS also calculated savings and cost estimates associated with a refined set of DSM programs for the MDU territory. These savings levels are referred to as **Program Potential** and are summarized in Chapter 6 of the report.

1.3 MARKET RESEARCH SUMMARY

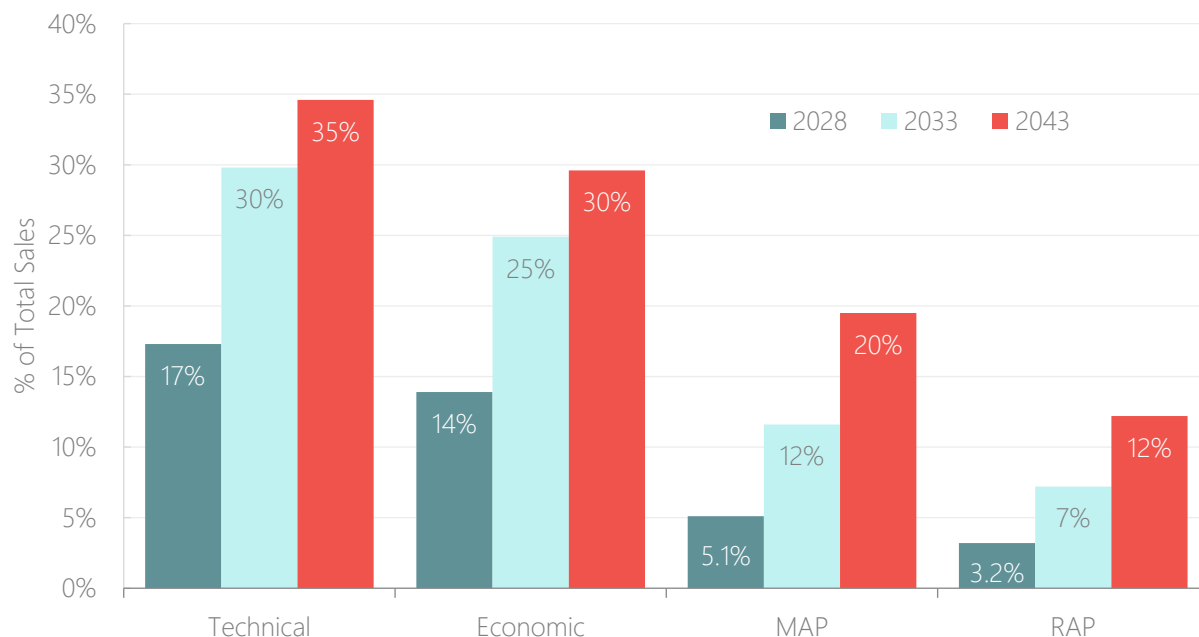
In support of the development of energy efficiency potential savings estimates, MDU also requested that GDS conduct limited primary market research to help inform key inputs in the market potential analysis. The desired final research focused on 1) collecting customer willingness to participate (“WTP”) in program offerings across select end-uses/measures and 2) updated equipment penetration, saturation, and efficiency characteristics for select key end-uses and/or measures. This data flowed through technical, economic, and achievable potential analyses, as well as the program design analysis.

1.4 POTENTIAL SAVINGS OVERVIEW

Figure 1-1 provides the technical, economic, MAP and RAP results for the 5-year, 10-year, and 20-year timeframes. The cumulative annual 5-year technical potential is 17% of the forecasted sales, and the economic potential is 14% of forecasted sales. The cumulative annual 5-year MAP is 5.1% and the RAP is 3.2%, as a percentage of forecasted sales.

Over the duration of the study timeframe the technical potential rises to 35% and the economic potential rises to 30% of forecasted sales in 2043, indicating that most of the technical potential is cost-effective. The MAP and RAP rise respectively to 20% and 12% of forecasted sales over the study timeframe. The gap between economic potential and MAP/RAP represents market barriers to prospective program participants, both financial and non-financial, to achieving the full amount of economic potential. Residential and C&I sector detail is provided in Chapter 5.

² National Action Plan for Energy Efficiency, “Guide for Conducting Energy Efficiency Potential Studies” (November 2007), page 2-4.

FIGURE 1-1: OVERVIEW OF ENERGY EFFICIENCY POTENTIAL

1.5 PROGRAM DESIGN RECOMMENDATIONS SUMMARY

The GDS Team conducted research and analysis to provide a recommendation for Montana-Dakota Utilities to consider as potential improvements to their electric energy efficiency program portfolio. The primary objective is to expand energy efficiency for all customers and to offer sector specific programs for residential, and commercial & industrial customers. The GDS Team combined market research of regional peer electric energy efficiency programs with the realistic potential outcomes from the market potential assessment, in addition to current industry trends and best practices. This activity was not a comprehensive portfolio optimization analysis, instead priorities focused on energy efficiency offerings for all customers. There may be additional factors beyond the scope of this analysis that would make certain considerations presented here infeasible for MDU to pursue or concepts that need to be tested with actual market conditions.

The GDS Team utilized a program planning tool to construct a bottom-up portfolio to estimate savings forecasts, budgets, and cost effectiveness for the proposed MDU energy efficiency programs. Forecasts and parameters at the individual measure level are derived from the realistic achievable scenario outcomes including forecasted participation, energy savings, incremental costs, and incentives. Measures with cost effectiveness results greater than 0.8 were identified as candidate measures for program archetype assignment. Individual measure permutations are bundled together prior to assignment to candidate program archetype. Program measure forecasts and incentives are reassessed within a program archetype. Program and portfolio cost effectiveness is assessed with final measures and expected program non-incentive costs. Budgets and participation are forecasted over five years. Additional considerations are given to non-administrative, or cross-cutting costs at the portfolio level when they cannot be attributed to a single program.

The program potential scenario simulates the expected program outcomes in forecasted years by including the following factors informed by best practice research:

- Incentive levels and structures
- Program non-incentive costs (administrative)
- Historical participation and spending in previous program cycles

In total, four program offerings were recommended: 1) Residential Home Energy Improvement, 2) Residential Low Income, 3) Commercial Prescriptive, and 4) Commercial Custom. Additional details surrounding each program can be found in Chapter 6 of this report.

Figure 1-2 and Figure 1-3 summarize the proposed program potential budgets and expected energy savings.

FIGURE 1-2: FIVE-YEAR ENERGY EFFICIENCY PORTFOLIO BUDGET EXPENDITURE FORECAST

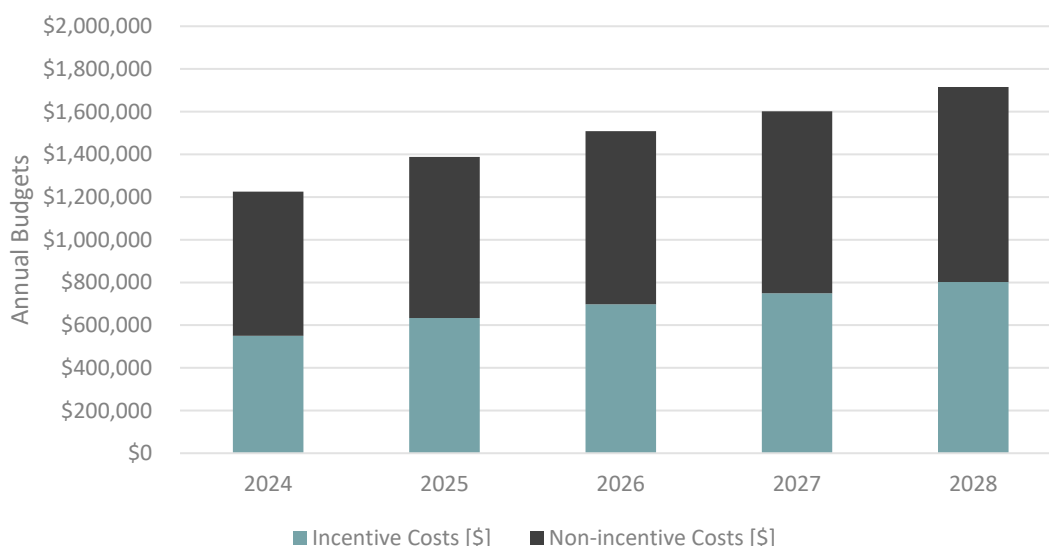


FIGURE 1-3: FIVE-YEAR ENERGY EFFICIENCY PORTFOLIO ENERGY SAVINGS FORECAST

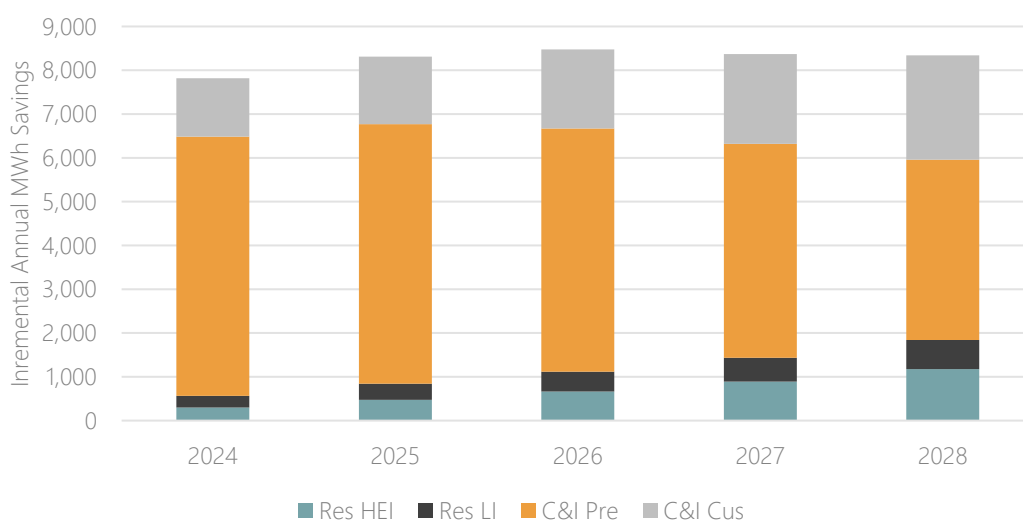


Table 1-1 summarizes the forecasted portfolio cost effectiveness outcomes for the three-year period (2024 – 2026).

TABLE 1-1: THREE YEAR (2024-2026) PORTFOLIO COST EFFECTIVENESS SUMMARY

Cost-Effectiveness Results	Net Present Value (2023)
Total Resource Cost (TRC)	
TRC Costs	\$6,137,938
TRC Benefits	\$9,558,607
TRC Net Benefits (\$)	\$3,420,669
TRC Net Benefits (Ratio)	1.6
Ratepayer Impact Measure (RIM)	
RIM Costs	\$38,549,781
RIM Benefits	(\$25,164,799)
RIM Net Benefits (\$)	(\$63,714,579)
RIM Net Benefits (Ratio)	(0.7)
Utility Cost Test (UCT)	
UCT Costs	\$4,122,255
UCT Benefits	\$9,262,727
UCT Net Benefits (\$)	\$5,140,472
UCT Net Benefits (Ratio)	2.2
Participant Cost Test (PCT)	
PCT Costs	\$2,473,520
PCT Benefits	\$36,709,412
PCT Net Benefits (\$)	\$34,235,893
PCT Net Benefits (Ratio)	14.8

2 MARKET RESEARCH

The initial step in the assessment of future potential is to develop a clear understanding of the current market segments, as well as a clear understanding of the market research data available in the MDU electric service areas. In 2022 MDU requested the GDS Team to conduct market research that would inform critical elements of the market potential study. The research objectives were developed in coordination with MDU and the potential study team. Primary market research activities were focused on customer willingness to participate in program future offerings across select end-uses/measures, with limited questions focused on collecting updated equipment penetration, saturation, and efficiency characteristics.

The resulting data was used to develop expected long-term adoption rates for energy efficiency over the study horizon and, where applicable, develop estimates of baseline and efficient equipment saturation estimates in the market potential study. The GDS Team conducted surveys of business and residential customers during March and April of 2023 with the objectives of gathering primary data on the following topics:

- Willingness to participate in a variety of energy efficiency program scenarios,
- Perceived market barriers and motivations for participating in energy efficiency programs, and
- Baseline / Saturation of energy-using equipment

Survey results served as inputs for the market potential model, enabling the market potential analysis to take into consideration the specific market conditions that exist in the MDU electric service territory. Data collection results specific to these service areas are provided below.

2.1 PRIMARY DATA COLLECTION APPROACH

The following subsections provide an overview of the primary data collection activities conducted by the GDS Team to support the market potential analysis of energy efficiency potential. The GDS Team conducted survey research in the residential and non-residential sectors.

2.1.1 Survey Administration

Surveys were administered in an online format through SurveyMonkey, with email recruitment followed by one reminder email. Respondents who completed the survey were entered into a drawing to win an electronic gift card. \$100 gift cards were awarded to twenty randomly selected residential survey respondents (10 for the baseline survey and 10 for the WTP survey) and \$200 gift cards were awarded to ten randomly selected business survey respondents. Winners were given the choice of an electronic or physically mailed gift card.

2.1.2 Sampling Approach

The team developed a sampling approach with an objective of achieving industry-standard statistical significance (90% confidence, 10% relative precision, or 90/10) at the strata level for all questions. Due to overall service area sizes, GDS and MDU settled on achieving 90/10 levels of statistical significance for the North Dakota service area and the remaining three service areas (South Dakota, Montana, and Wyoming) combined.³ The residential sample frame was limited to only customers with greater than 1,000 kWh of

³ Note that this stratification for market research is different than the reporting structure for estimating overall potential, with this report focusing on the services areas of the Integrated System (ND, SD, and MT).

annual usage, as annual usage below 1,000 kWh likely represents non-dwelling facilities. Based on achieving 90/10 levels of statistical significance, the residential sample size was set at 16,900 customers, with the stratification being split at approximately 50% between North Dakota and the other three states combined. Additionally, the sample was stratified by income-qualified customers; due to the limited number of customers identified in the sample population as income-qualified, all income-qualified customers were selected for the sample. In total, 495 identified income-qualified customers in North Dakota were included in the sample, and 405 identified income-qualified customers in the other states were included.

The non-residential sample frame consisted of 11,084 customers who had opted-in to receive email communications from MDU. To achieve 90/10 statistical significance, sample sizes were set at 5,000 for North Dakota, and 4,632 for the other states combined. The sample selection process included stratification by state (ND vs. other states), building type, and average annual kWh usage. The stratification was designed to result in a sample that mirrored the overall population building type and energy usage characteristics as closely as possible.

Overall, the response outcomes were positive, and the survey effort produced a robust set of primary data. The team set aggressive sampling targets, with a goal of having high levels of statistical significance for detailed sub-groups within the population. Table 2-1 sampling targets and response outcomes.

TABLE 2-1 SURVEY SAMPLING TARGETS AND RESPONSE SUMMARY

State	Target Completes	Completes (Entire Survey)	Completes (Baseline Questions)	Completes (WTP Questions)
Nonresidential Customer Survey				
<i>Stratification: ND / SD / MT / WY, and Commercial / Industrial</i>				
North Dakota (ND)	75	137	139	149
South Dakota (SD)	23	23	23	23
Montana (MT)	24	69	69	70
Wyoming (WY)	23	36	37	38
Total	145	265	268	280
Total (SD-MT-WY)	70	128	129	131
Commercial	135	260	263	275
Industrial	10	5	5	5
Total	145	265	268	280
Residential Customer Survey				
<i>Stratification: ND / SD / MT / WY, single family / multifamily, and income-qualified / market rate</i>				
North Dakota (ND)	170	979	452	531
South Dakota (SD)	56	169	76	93
Montana (MT)	57	487	229	260
Wyoming (WY)	57	445	212	235
Total	340	2,080	969	1,119
Total (SD-MT-WY)	170	1,101	517	588
Single Family	270	1,691	794	902
Multi-Family	70	389	175	217

State	Target Completes	Completes (Entire Survey)	Completes (Baseline Questions)	Completes (WTP Questions)
Total	340	2,080	969	1,119
Income-qualified	70	122	58	66
Market Rate	240	1,958	911	1,053
Total	340	2,080	969	1,119

2.1.3 Residential Online Survey

The residential customer research targeted homeowners and tenants in the following key segments: income-eligible and market-rate customers, and customers occupying single family, multifamily, and mobile homes. Income-eligible was defined by household size as 200% of the federal poverty threshold.

A residential online customer survey collected home characteristics, equipment penetration for key end-uses/building characteristics, including heating, cooling, water heating, insulation, smart appliances, thermostats, major appliances, and electric vehicles – and information on barriers and willingness to adopt a range of energy efficient measures at varying incentive levels.

2.1.4 Business Sector Online Survey

Primary data collection was also conducted in the nonresidential sector via an online survey with business customers. The survey collected business and facility characteristics, as well as equipment penetrations for key end-uses, such as lighting, heating, cooling, water heating, refrigeration, thermostats, ventilation, data centers, and EMS. The nonresidential online survey also collected information on barriers to energy efficiency and willingness-to-adopt energy efficient measures under various incentive offerings. In total, GDS collected survey data from 422 commercial customers, with 265 fully completing the survey. GDS examined the annual energy consumption data from the survey participants and developed a weighting adjustment based on the sample's customer type relative to the MDU population.

2.2 RESIDENTIAL MARKET DATA

The tables below provide some key home and equipment characteristics by market segment. The results have been weighted to align the sample distribution with that of the overall residential population home types for MDU.

Table 2-2 presents some key household and equipment characteristics for the residential sector by MDU customer state, housing type and income type. The data presented below includes the average number of units per household for occupants, water devices, plug load controls, and key appliances.

TABLE 2-2: KEY HOUSEHOLD AND EQUIPMENT CHARACTERISTICS (AVG # PER HOUSEHOLD)

	Total	ND	SD-MT-WY	Single Family	Multi-Family	Market Rate	Income Qualified
Household Characteristics							
Avg. # of Occupants	2.50	2.49	2.50	2.59	2.07	2.49	2.66
Avg # of Dishwashers	0.78	0.80	0.74	0.77	0.80	0.79	0.54
Avg # of EnergyStar Dishwashers	0.50	0.50	0.49	0.53	0.38	0.51	0.29

	Total	ND	SD-MT-WY	Single Family	Multi-Family	Market Rate	Income Qualified
Avg # of Smart Plugs/Outlets	0.23	0.27	0.15	0.23	0.11	0.21	0.11
Avg # of Refrigerators	1.38	1.39	1.36	1.41	1.22	1.40	1.07
Avg # of EnergyStar Refrigerators	0.78	0.78	0.76	0.81	0.61	0.79	0.59
Avg # of Stand-Alone Freezers	0.92	0.90	0.97	1.04	0.46	0.95	0.69
Avg # of EnergyStar Freezers	0.51	0.49	0.54	0.57	0.28	0.53	0.35
Avg # of Thermostats	1.54	1.56	1.50	1.53	1.51	1.52	1.60

Table 2-3 provides example summary data by market segment for major residential end-uses. These data points of electric heating, water heating, and central air conditioning equipment penetrations help quantify the proportion of the population with electricity consuming major equipment types by market segment. In addition, the research also provided recent market conditions for remaining efficiency opportunities, such as the penetration of smart thermostats, which does not exceed 14% for any market segment.

TABLE 2-3: SELECT RESIDENTIAL MARKET RESEARCH RESULTS FOR KEY END-USES

End-Use	Equipment	Total	ND	SD-MT-WY	Single Family	Multi-Family	Market Rate	Income Qualified
Water Heating	Electric Water Heating	50%	50%	50%	49%	52%	49%	68%
	Heat Pump Water Heater (as a % of electric Water Heating)	33%	31%	37%	33%	40%	34%	31%
Heating	Fuel - Electricity	31%	32%	29%	25%	52%	28%	74%
	Fuel - Natural Gas	52%	54%	48%	54%	36%	53%	12%
	Fuel - Other	18%	15%	23%	20%	12%	19%	14%
	Type - Non-Electric Furnace	21%	20%	22%	24%	11%	22%	4%
	Type - Heat Pump	3%	3%	3%	3%	3%	3%	1%
	Type - Electric Furnace	41%	40%	43%	45%	29%	42%	34%
	Type - Other	35%	37%	33%	29%	57%	33%	60%
Cooling	Have Central AC	68%	69%	64%	70%	51%	39%	68%
Thermostats	Have Smart/Wi-Fi Thermostat	20%	22%	17%	22%	9%	20%	7%

2.3 BUSINESS MARKET DATA

Table 2-4 provides select demographic information in the business sector.

TABLE 2-4 COMMERCIAL BUILDING CHARACTERISTICS

	Total	ND	SD-MT-WY
Own	70%	69%	71%
Lease	25%	28%	23%

	Total	ND	SD-MT-WY
Manage Building (Lease Only)	52%	38%	70%
Do Not Manage Building (Lease Only)	46%	58%	30%
% of Facilities Built Before 2001	56%	56%	56%
Average Size of Facility (Sq. Ft)	3,650	3,680	3,613
Occupy Building Year-Round	90%	92%	86%

The penetration of different lighting fixtures in MDU businesses is shown in Table 2-5. The table also includes the % of facilities with different lighting control types as well as % of lighting that is controlled. Table 2-6 provides example summary data for major end-uses.

TABLE 2-5: COMMERCIAL SECTOR LIGHTING END-USE CHARACTERISTICS

End Use	Equipment	Total	ND	SD-MT-WY
Lighting (% of all Lighting)	Linear Fluorescent	37%	40%	35%
	Linear LED	29%	29%	28%
	Nonlinear LED	9%	8%	10%
	CFL	3%	3%	3%
	HID	1%	1%	1%
	Incandescent or Halogen	13%	11%	15%
Lighting Controls	Occupancy Sensors	9%	9%	9%
	% of Lighting Controlled	3%	4%	3%
	Daylight Dimming	4%	4%	5%
	% of Lighting Controlled	2%	1%	2%
	Time Controls	7%	5%	10%
	% of Lighting Controlled	2%	1%	3%
	Advanced Lighting Controls	4%	5%	2%
	% of Lighting Controlled	3%	4%	1%

TABLE 2-6 COMMERCIAL SECTOR EQUIPMENT PENETRATION ACROSS KEY END-USES

End Use	Equipment	Penetration		
		Total	ND	SD-MT-WY
Heating	Boiler	11%	13%	8%
	Furnace	44%	41%	48%
	Heat Pump	2%	3%	2%
	Electric Resistance	3%	1%	5%
	Unit Heater	12%	12%	12%
	Infrared	5%	7%	3%
Cooling	Packaged System AC	42%	44%	39%
	Split System AC	20%	17%	22%
	Heat Pump (Ducted)	13%	17%	9%
	Heat Pump (Ductless)	1%	1%	0%

End Use	Equipment	Penetration		
		Total	ND	SD-MT-WY
Thermostats	Window or Wall AC	15%	10%	19%
	Smart Thermostats	8%	10%	5%
	% of Space Controlled by Smart Thermostat	58%	54%	67%
Ventilation	Demand Controlled Ventilation	13%	12%	14%
	Vent Hoods	20%	21%	18%
	Vent Hoods with Demand Controlled Vent.	22%	22%	21%

2.4 ADOPTION CURVE MARKET DATA

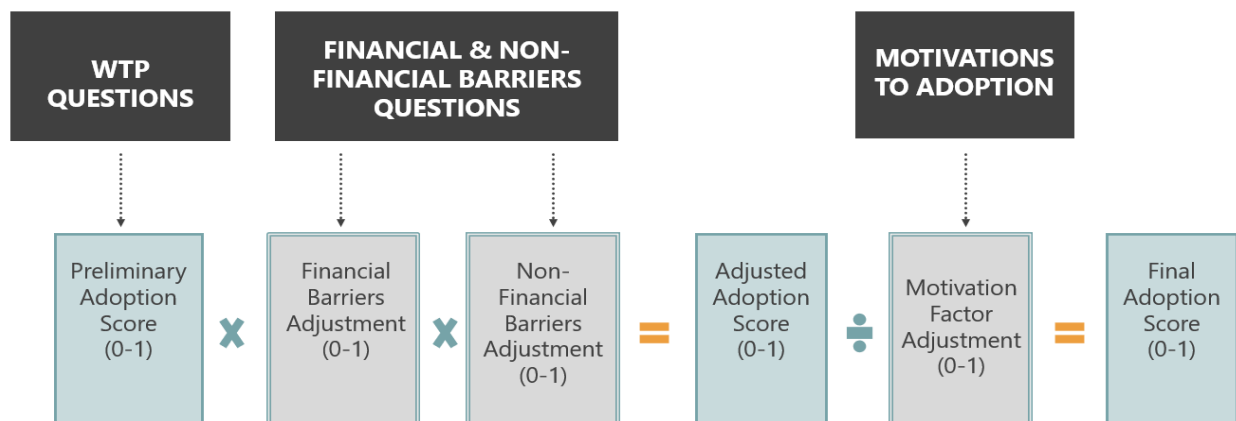
In addition to new primary research on building and energy-consuming equipment characteristics in the MDU service area, one of the major objectives of the primary research was to develop survey research that could be utilized to develop measure/program adoption curves for estimates of achievable potential. Table 2-7 describes the end-uses or categories in which adoption rate estimates were developed for energy efficiency, demand response programs, or distributed energy resources by the GDS Team.

TABLE 2-7 ADOPTION RATE CATEGORIES ANALYZED

Willingness to Participate	EE End Uses
Residential Customers	Heating/CAC Water Heating Major Appliances Insulation/Air Sealing
Business Customers	HVAC Equipment Water Heating Equip. Refrigeration Lighting Equipment

Adoption rate calculations were based on questions which assessed (1) the respondent's willingness to adopt energy efficiency technologies or participate in demand response programs in scenarios with varying levels of program support, (2) the magnitude of the respondent's financial and non-financial barriers to adoption/participation. Adoption rates were calculated based on the equation shown below.

EQUATION 2-1 ADOPTION RATE FORMULA FOR FINAL ADOPTION SCORE



Direct willingness-to-participate questions are the starting point of measure/program-specific adoption curve calculations. For each item, respondents were asked to rate the likelihood that they would purchase the energy efficient version of the equipment, or participate in the DR program, at various incentive levels, including no incentive and an incentive that covers the full incremental (or total) cost.

Responses to financial and non-financial barrier questions were then used to adjust the preliminary adoption score. If “cost” was a consideration to prevent customers from purchasing energy efficient equipment, GDS assumed a financial barrier adjustment. The 0% incentive level was reduced by 100%, the 25% incentive level was reduced by 80%, the 50% incentive level was reduced by 60%, the 75% incentive level was reduced by 40%, and the 100% incentive level was reduced by 20%.

If another reason (i.e., lack of knowledge, uncertainty about bill savings, etc.) was a consideration to prevent customers from purchasing energy efficient equipment, GDS assumed a non-financial barrier adjustment. The 0% incentive level was reduced by 50%, the 25% incentive level was reduced by 40%, the 50% incentive level was reduced by 30%, the 75% incentive level was reduced by 20%, and the 100% incentive level was reduced by 10%.

Last, if the respondent indicated a strong motivation for purchasing an efficient technology or participating in a demand response program (i.e., bill savings, progress towards sustainability goals, etc.) then the adjusted adoption score was increased. The 0% incentive was increased by 25%, the adjusted adoption rate at the 25% incentive level was increased by 66%, the 50% incentive level by 150%. Respondents who indicated a strong motivation factor were typically assigned a 100% adoption score at the 75% and 100% incentive levels.

2.4.1 Residential Sector Final Adoption Scores

Table 2-8 presents the adjusted adoption scores (after financial and non-financial adjustments) for residential customers. In general, residential customers indicated a willingness to participate close to 70% to 85% at 100% incentive levels, and even some modest level of willingness to participate with 0% incentives.

TABLE 2-8 RESIDENTIAL FINAL ADOPTION SCORES BY INCENTIVE LEVEL

	Annual Incentive (% of incremental measure cost)				
	0%	25%	50%	75%	100%
ND					
HVAC	21%	42%	59%	73%	82%
Water Heat	19%	33%	47%	61%	79%
Insulation/Air Sealing	16%	28%	41%	56%	77%

Appliances	21%	32%	46%	60%	76%
SD-MT-WY					
HVAC	24%	40%	52%	65%	82%
Water Heat	20%	33%	47%	61%	82%
Insulation/Air Sealing	18%	29%	43%	57%	80%
Appliances	23%	34%	48%	61%	81%

2.4.2 Business Sector Final Adoption Scores

Table 2-9 presents the adjusted adoption scores (after financial and non-financial adjustments) for MDU nonresidential customers across several end-uses.

In contrast to the residential sector energy efficiency WTP research, the nonresidential WTP survey questions incentives were described in the form of payback periods to better align with how purchasing decisions are likely to be considered.

TABLE 2-9 NONRESIDENTIAL FINAL ADOPTION SCORES BY INCENTIVE LEVEL AND INVESTMENT TYPE

	Payback Performance (after incentive)				
	10 Years	5 Years	3 Years	1 Year	0 Years
ND					
HVAC	30%	47%	59%	70%	76%
Lighting	25%	42%	57%	66%	74%
Refrigeration	21%	34%	47%	55%	64%
Water Heat	22%	37%	52%	61%	69%
SD-MT-WY					
HVAC	29%	45%	58%	69%	75%
Lighting	22%	39%	56%	65%	71%
Refrigeration	19%	34%	43%	54%	61%
Water Heat	23%	39%	52%	64%	70%

3 BASELINE FORECAST

The load forecast is a critical input into MDU's 2023 DSM Market Potential Study, having various uses in estimation of residential and business sector potential. Therefore, GDS reviewed MDU's most recently completed load forecast and customer datasets to produce the various forecast components necessary as inputs into this analysis. This chapter describes the various ways in which the study uses the forecast and presents the baseline forecast and segmentation of the C&I classes and describes the methodology and data sources used by GDS for the purposes of generating the load forecasts that were used in the potential analysis. This chapter also provides an overview of the number of households in MDU's service area. Developing this information is a fundamental part of any energy efficiency potential study. It is necessary to understand how energy is consumed in a state or region before one can assess the energy efficiency savings potential that remains to be tapped.

3.1 MDU ELECTRIC SERVICE TERRITORIES

MDU is an investor-owned utility serving electric and natural gas customers in the states of Montana, North Dakota, South Dakota, and Wyoming. MDU's electric system consists of an integrated supply system serving Eastern Montana (31 communities), North Dakota (119 communities), and South Dakota (30 communities). This integrated system's summer peak demand in 2021 was 603.7 MW and winter peak demand was 572.7 MW. MDU has a separate electric supply system in Wyoming, serving six communities.⁴

FIGURE 3-1. MDU ELECTRIC SERVICE TERRITORY

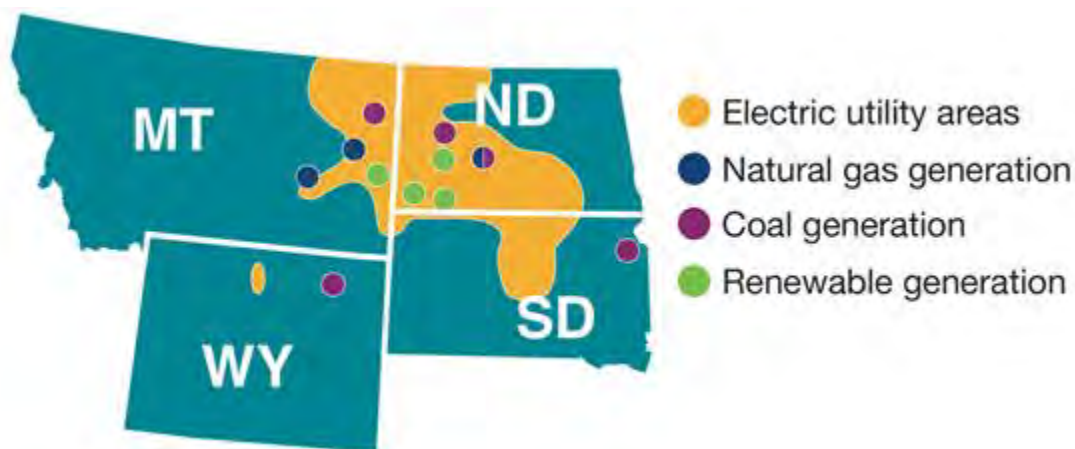


Table 3-1 provides the forecasted mix of electric customers for MDU's integrated system in 2024. The residential customer segment represents 83% of all accounts but 41% of the Integrated System sales (Table 3-2). North Dakota represents 73% of all accounts in the MDU Integrated System.

TABLE 3-1. MDU ELECTRIC CUSTOMER MIX FOR MDU INTEGRATED SYSTEM (2024)

Customer Type	Montana	North Dakota	South Dakota	MT-ND-SD Total
Residential	19,746	79,706	6,423	105,875
Small C&I	5,363	12,361	1,919	19,643
Large C&I	254	1,226	109	1,589

⁴ The Wyoming service area and associated market potential is discussed further in a separate report.

3.2 STATE LEVEL FORECASTS AND C&I RECLASSIFICATION

MDU's electric sales forecast for 2024-2043 was provided to GDS as part of an initial data request. The original electric sales forecast was broken out by state as well as by customer segment, including residential, small C&I, large C&I, and other.⁵ GDS also received MDU's complete C&I database which also identified each business by Standard Industry Code (SIC). GDS mapped these industry codes to a specified building type, and lastly classified the building type as either commercial or industrial. Customers with a building type classified as "Industrial Manufacturing" were coded as industrial customers, while all other building types were coded as commercial customers.

Table 3-2 provides the sales by sector and customer type for the initial year of the study, as well as the 5th, 10th, 15th, and 20th year timeframe. Sales are forecasted to gradually increase over the timeframe of the study across all states and sectors. Total sales are forecasted to be just over 2.5 million MWh in 2024 and increase to 2.8 million MWh by 2043.

TABLE 3-2. MDU SALES FORECASTS BY STATE & SECTOR (MWH)

	2024	2028	2033	2038	2043
By State					
Montana ⁶	462,624	476,564	495,032	514,734	527,183
North Dakota	1,901,144	1,968,829	2,052,281	2,138,644	2,191,884
South Dakota	143,348	146,513	150,676	155,080	157,844
Total	2,507,116	2,591,906	2,697,989	2,808,457	2,876,911
Original Customer Class					
Residential	1,033,111	1,044,332	1,056,582	1,068,832	1,076,182
Small C&I	727,010	777,559	841,486	908,491	950,214
Large C&I	664,200	687,353	717,425	748,804	768,284
Other	82,795	82,662	82,496	82,330	82,230
Total	2,507,116	2,591,906	2,697,989	2,808,457	2,876,911
Reclassified Customer Class					
Residential	1,033,111	1,044,332	1,056,582	1,068,832	1,076,182
Commercial	990,208	1,036,981	1,096,437	1,158,560	1,197,149
Industrial	401,002	427,931	462,473	498,735	521,349
Other	82,795	82,662	82,496	82,330	82,230
Total	2,507,116	2,591,906	2,697,989	2,808,457	2,876,911

3.3 LOAD FORECAST SEGMENTATION

3.3.1 Residential Sector

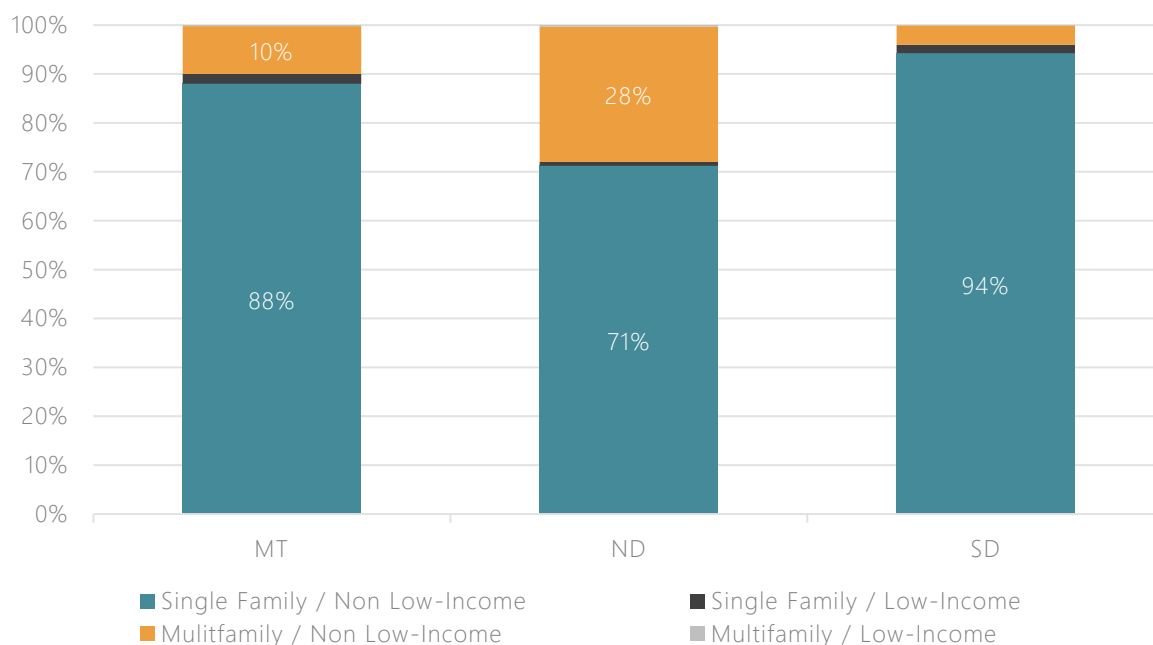
The residential sector analysis approach employs a bottom-up analysis that is dependent on the number of households in the MDU service area. MDU provided GDS with a forecast of total residential system accounts for each state, which GDS used as a proxy for number of households. GDS then used data from the market research to derive a breakdown by housing unit (i.e., singly-family vs. multifamily) for the MDU service

⁵ Other includes streetlighting and miscellaneous.

⁶ The Montana sales forecast excludes sales from customers who are exempt from contributing to energy efficiency program funding.

territory, and MDU customer databases to derive estimates by income-type (low-income vs. non-low-income). The assumed breakdown of households in 2024 is shown in **Figure 3-2** below.

FIGURE 3-2. RESIDENTIAL HOUSING TYPE BREAKDOWN (2024)



3.3.2 Commercial & Industrial Sector

In the C&I sector, disaggregated forecast data provides the foundation for the development of energy efficiency potential estimates. GDS received a base case sales forecast from MDU; the forecast was further segmented into building type as described above and by end-use using a combination of regional data sources, including nearby utility market research⁷ and the Energy Information Agency's (EIA) Annual Energy Outlook Reference Data.

Figure 3-3 provides a breakdown of commercial electric sales by building type for MT-ND-SD. Sales by building type are relatively similar by state and are well distributed across health, retail, office, and miscellaneous building types, which together account for just over 60% of sales in each state. Assembly and education typically accounted for just under 20% of sales. The remaining 20% of sales are attributed to food sales (grocery), food service (restaurants), lodging, TCU (transportation, communications, and utilities) and warehouses. Note, TCU sales were excluded from subsequent analysis of energy efficiency market potential because these accounts are not typically associated with traditional building types and end-uses.

⁷ Electric Energy Efficiency Market Potential Study. Submitted to NorthWestern Energy. 2017.

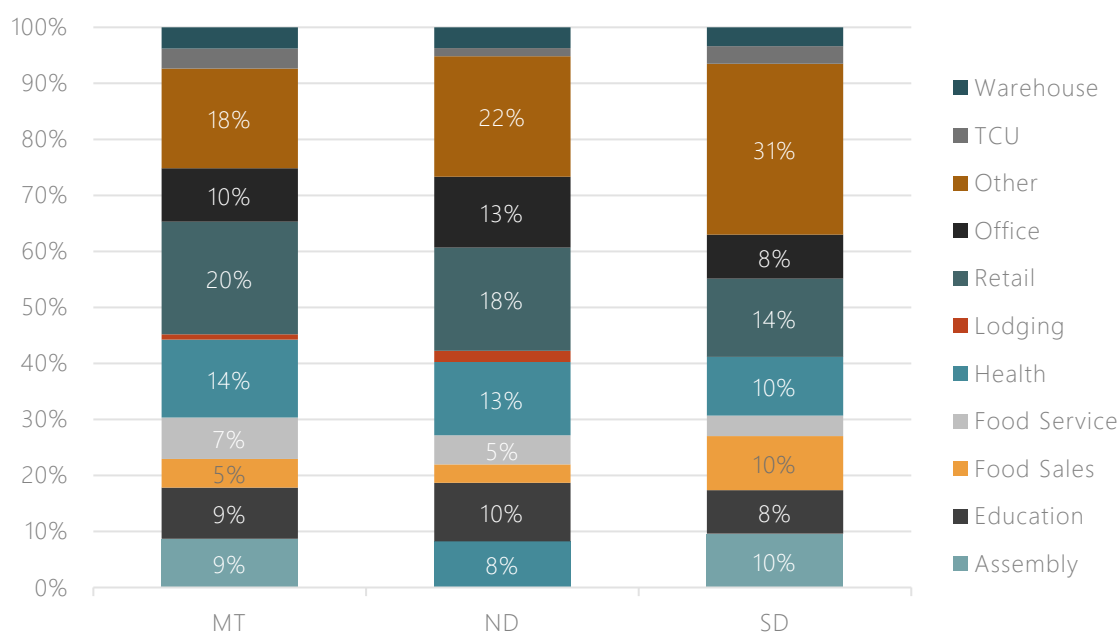
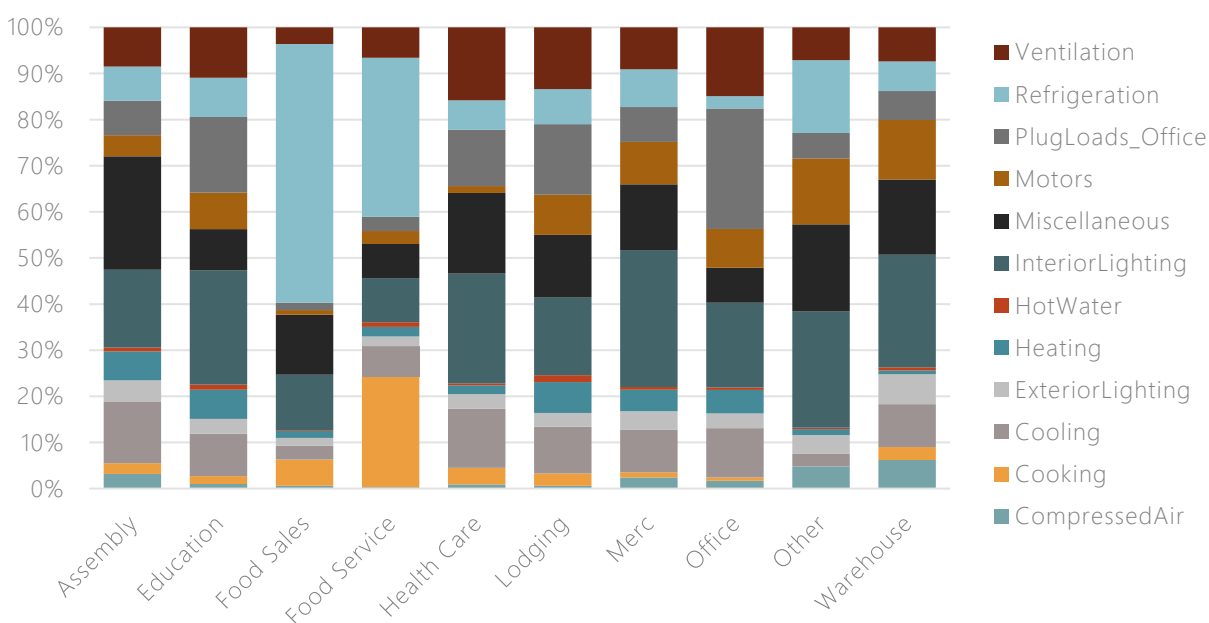
FIGURE 3-3. COMMERCIAL ELECTRIC SALES BREAKDOWN BY BUILDING TYPE⁸

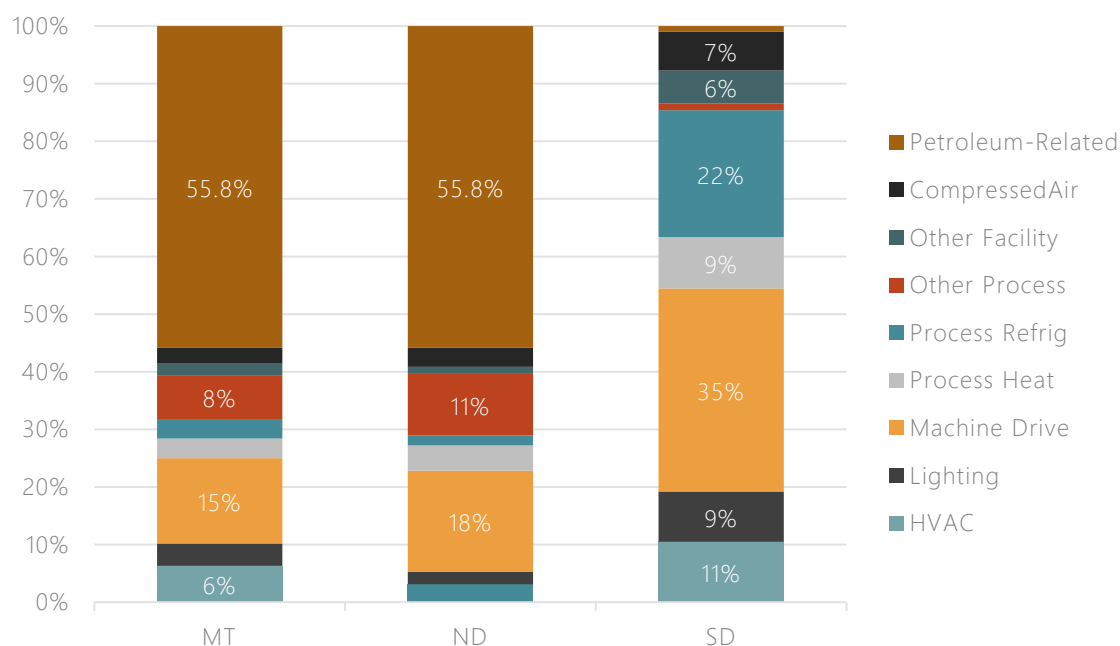
Figure 3-4 provides an illustration of the leading end-uses across all building types in the commercial sector. Lighting, miscellaneous, and HVAC (heating, cooling, and ventilation) are the primary end-uses with a significant share of load across most building types. Shares of refrigeration, cooking, and plug loads are often dependent on the type of building, with refrigeration and cooking loads greatest in food sales and food service while plug loads/office loads are greatest in offices and education. Note, the regional nature of this data did not allow for any additional disaggregation at the state level.

FIGURE 3-4. COMMERCIAL ELECTRIC END-USE BREAKDOWN BY BUILDING TYPE

⁸ Data labels for building types with sales less than 5% of total were removed to improve readability.

Industrial sales were also segmented by end-use based on the overall distribution of sales by industry type and EIA MECS data on end-use consumption by industrial segment. **Figure 3-5** provides a breakdown of the sales by end-use. Note that in Montana and North Dakota, a significant (55%) of the industrial sales were attributed to petroleum manufacturing facilities with limited potential for energy efficiency opportunities in traditional end-uses.

FIGURE 3-5. INDUSTRIAL ELECTRIC SALES BREAKDOWN BY BUILDING TYPE⁹



⁹ Ibid.

4 METHODOLOGY

This section describes the overall methodology utilized to assess the electric energy efficiency potential in the MDU Integrated System electric service areas. The main objectives of the study were to estimate the technical, economic, maximum, and realistic achievable potential savings from energy efficiency in the MDU Integrated System territory; and to quantify these estimates of potential in terms of MWh and MW savings. GDS also examined an estimate of program potential – a subset of achievable potential that is constrained by budget and a narrower focus on electric efficiency programs of interest to MDU. The program potential, and related program design and delivery considerations are discussed further in Chapter 6.

Energy efficiency potential studies involve several analytical steps to produce estimates of each type of energy efficiency potential: technical, economic, achievable and program potential. This study utilizes benefit/cost screening tools for the residential and non-residential sectors to assess the cost effectiveness of energy efficiency measures. These cost effectiveness screening tools are Excel-based models that integrate technology-specific impacts and costs, customer characteristics, utility avoided cost forecasts and more. Excel was used as the modeling platform to provide transparency to the estimation process and allow for simple customization of each MDU service area's unique characteristics and the availability of specific model input data. The major analytical steps and an overview of the potential savings are summarized below, and specific changes in methodology from one sector to another have been noted throughout this section.

4.1 ANALYSIS APPROACH

For the residential sector, GDS utilized a bottom-up approach to the modeling of energy efficiency potential, whereby measure-level estimates of costs, savings, and useful lives were used as the basis for developing the technical, economic, and achievable potential estimates. The measure data was used to build up the technical potential, by applying the data to each relevant market segment. The measure data allowed for benefit-cost screening to assess economic potential, which was in turn used as the basis for achievable potential, taking into consideration incentives and estimates of annual adoption rates. For the C&I sector, GDS employed a bottom-up/top-down approach. GDS first used a bottom-up approach to estimate measure-level savings, costs, and cost-effectiveness, and then converted to a top-down approach by applying measure savings (on a percent-basis) to all applicable shares of disaggregated energy load.

4.2 MARKET CHARACTERIZATION

The initial step in the analysis was to gather a clear understanding of the current market segments in each service area within the MDU Integrated System. The GDS team coordinated with MDU to gather utility sales and customer data, by state, and existing market research to define appropriate market sectors, market segments, vintages, saturation data and end uses. This information served as the basis for completing a forecast disaggregation and market characterization of both the residential and nonresidential sectors.

4.2.1 Forecast Disaggregation

Through the development of the baseline forecasts, the GDS Team produced disaggregated forecasts by sector and end-use. The resulting aggregate baseline forecasts were disaggregated by sector and then further segmented as follows:

- *Residential.* The residential forecast was broken out by housing type as well as existing vs. new construction.

- **Commercial.** Typically based on major EIA Commercial Building Energy Consumption Survey (CBECS) business types: retail, warehouse, food sales, office, lodging, health, food service, education, and miscellaneous.
- **Industrial.** As determined by actual load consumption shares and major industry types as defined by EIA's Manufacturing Energy Consumption Survey (MECS) data.

Within the residential, commercial, and industrial market segments, the sector level disaggregated forecasts were further segmented by the major end uses shown in **Table 4-1**.

TABLE 4-1. ELECTRIC END-USE LOADS

Residential	C&I	
	Commercial	Industrial
Heating	Interior Lighting	Lighting
Cooling	Exterior Lighting	HVAC
Water Heating	Refrigeration	Machine Drive
Cooking	Space Cooling	Process Heat
Refrigerator	Space Heating	Process Cool / Refrigeration
Freezer	Ventilation	Other Process
Dishwasher	Water Heating	Process – Machine Drive
Clothes Washer	Plug Loads / Office Equipment	Other Facility
Dryer	Cooking	Compressed Air
TV	Other	
Light	Whole Building / Behavioral	

4.2.2 Building Stock/Equipment Saturation

To assess the potential electric energy efficiency savings available, estimates of the current saturation of baseline equipment and energy efficiency measures are necessary.

4.2.2.1 Residential Sector

For the residential sector, GDS relied on the primary research efforts noted in Chapter 2 of this report. The GDS-led market research results allowed for the GDS Team to characterize the baseline and efficiency saturations of the residential sector using housing-type specific data. Other data sources included ENERGY STAR unit shipment data, and the EIA Residential Energy Consumption Survey data from 2020. The ENERGY STAR unit shipment data filled data gaps related to the increased saturation of energy efficient equipment across the U.S. in the last decade.

4.2.2.2 Business Sector

For the commercial sector, building stock and equipment saturation data was informed from a combination of available regional or national data, such as the EAI Annual Energy Outlook and the Energy Baseline Calculator, as well as limited market research (online survey noted in Chapter 2). This data helped form the disaggregation of the end-use sales forecast into measure groups consistent with those included in the potential analysis as well as saturation of energy efficient equipment, primarily related to lighting and controls.

For the industrial sector, the analysis employed a top-down analysis at the end-use level. Accordingly, it was not critical to disaggregate the industrial sales at a measure-level. Instead, measures were developed to estimate savings at a total end-use level.

4.2.3 Remaining Factor

The remaining factor is the proportion of a given market segment that is not yet efficient and can still be converted into an efficient alternative. It is the inverse of the saturation of an energy efficient measure, prior to any adjustments. In this study, two key adjustments were made to recognize that energy efficient saturation does not necessarily always fully represent the state of market transformation. First, while a percentage of installed measures may already be efficient, some customers may backslide (i.e., revert to standard technologies, or otherwise less efficient alternatives in the future, based on considerations like measure cost and availability and customer preferences). For example, customers who purchased efficient HVAC equipment in the past may not want to pay the full cost for an efficient piece of equipment again due to price increases in recent years.

For measures categorized as market opportunity (i.e., replace-on-burnout), we assumed that 50% of the instances in which an efficient measure is already installed, the burnout or failure of those measures would be eligible for inclusion in the estimate of future savings potential. This adjustment assumes that 50% of the market is transformed, and no future savings potential exists, whereas the remaining 50% of the market is not transformed and could backslide without the intervention of a program and an incentive. Similarly, for retrofit measures, we assumed that only 10% of the instances in which an efficient measure is already installed, the burnout or failure of those measures would be eligible for inclusion in the estimate of future savings potential. This recognizes the more proactive nature of retrofit measures, as the implementation of these measures are more likely to be elective in nature, compared to market opportunity measures, which are more likely to be needs-based. The uncertainty in these assumptions is appropriate, as they factor in a key component of natural customer decision making.

A second, more limited, adjustment was also made to account for future replacements for measures that are installed early on over the 20-year analysis timeframe and subsequently reach the end of their useful life. Commercial lighting measures were primarily impacted by this adjustment, assuming the 75% of commercial lighting measures would be transformed following the initial modeled installation and would no longer require program intervention after reaching the end of their useful life. All other measures assumed market transformation of 25% or less, when eligible to “re-up” over the analysis period. Note that this second adjustment only impacts the incremental annual estimates of savings potential, and the savings that result from market transformed measures remain the reported estimates of cumulative potential.

4.3 MEASURE CHARACTERIZATION

This section of the report provides an overview of the measure lists used in the study as well as the assumptions and sources used to characterize these measures.

4.3.1 Measure Lists

The study’s sector-level energy efficiency measure lists were informed by a range of sources including the numerous regional technical reference manuals (“TRMs”) including the Minnesota and Illinois TRMs, current MDU program offerings and offerings from peer utilities. The measure list development was a collaborative effort in which GDS developed draft lists that were shared with MDU staff for review and comment. The study scope includes measures and practices that are currently commercially available as well as emerging

technologies. The commercially available measures are of the most immediate interest to MDU. However, a small number of well documented emerging technologies were considered for each sector. Emerging technology research was focused on measures that are commercially available but may not be widely accepted at the current time. A complete listing of the energy efficiency measures included in this study is provided in the Appendices of this report.

In addition, this study includes measures that could be relatively easily substituted for, or applied to, existing technologies on a retrofit or replace-on-burnout basis. Replace-on-burnout applies to equipment replacements that are typically made in the market when a piece of equipment is at the end of its useful life. A retrofit measure is eligible to be replaced at any time in the life of the equipment or building. Replace-on-burnout measures are generally characterized by incremental measure costs and savings (e.g., the costs and savings of a high-efficiency versus standard efficiency air conditioner); whereas retrofit measures are generally characterized by full costs and savings (e.g., the full costs and savings associated with adding ceiling insulation into an existing attic). For new construction, energy efficiency measures can be implemented when each new home or building is constructed, thus the rate of availability is a direct function of the rate of new construction.

In total, GDS analyzed 249 electric measure types for each MDU jurisdiction. Many measures required multiple permutations for different applications, such as different building types, efficiency levels, and replacement options. GDS developed a total of 1,574 measure permutations for this study. **Table 4-2** provides a breakdown of the sector-level number of measures and permutations.

TABLE 4-2. MEASURE COUNTS BY SECTOR

Sector	# of Measures	Total Permutations
Residential	103	318
C&I	149	1256
Total	249	1,574

4.3.2 Assumptions and Sources

A significant amount of data is needed to estimate the electric savings potential for individual energy efficiency measures or programs across the residential and nonresidential customer sectors. GDS used the most recent nearby utility evaluation report findings, the Minnesota TRM, Illinois TRM, the Michigan Energy Measures Database (MEMD), and EIA data for a large amount of the data requirements. Additional source documents included American Council for an Energy-Efficient Economy (ACEEE) research reports covering topics like emerging technologies.

Measure Savings: GDS relied on existing nearby utility evaluation report findings and the Illinois TRM to inform calculations supporting estimates of annual measure savings as a percentage of base equipment usage. For custom measures and measures not included in the Illinois TRM, GDS estimated savings from a variety of sources, including:

- MN TRM, IN TRM, MEMD, and other regional/state TRMs
- Secondary sources such as the ACEEE, Department of Energy (DOE), EIA, ENERGY STAR®, and other technical potential studies

Measure Costs: Measure costs represent either incremental or full costs. These costs typically include the incremental cost of measure installation, when appropriate based on the measure definition. For purposes of this study, nominal measure costs held constant over time.

GDS obtained measure cost estimates primarily from the Illinois TRM. GDS also used the following supplementary data sources:

- MN TRM, Illinois TRM, and other regional/state TRMs
- Secondary sources such as the ACEEE, ENERGY STAR, and NREL

Costs and savings for new construction and replace on burnout measures were calculated as the incremental difference between the code minimum equipment and the energy efficiency measure. This approach was utilized because the consumer must select an efficiency level that is at least the code minimum equipment when purchasing new equipment. The incremental cost is calculated as the difference between the cost of high efficiency and standard efficiency (code compliant) equipment. However, for retrofit or direct install measures, the measure cost was the “full” cost of the measure, as the baseline scenario assumes the consumer would not make energy efficiency improvements in the absence of a program. In general, the savings for retrofit measures are calculated as the difference between the energy use of the removed equipment and the energy use of the new high efficiency equipment (until the removed equipment would have reached the end of its useful life).

Measure Life: Measure life represents the number of years that energy using equipment is expected to operate. GDS obtained measure life estimates from the Illinois TRM. GDS also used the following supplementary data sources:

- MN TRM and other regional/state TRMs
- Manufacturer data
- Savings calculators and life-cycle cost analyses

All measure savings, costs, and useful life assumptions are documented in the Appendices volume of this report.

4.4 ENERGY EFFICIENCY POTENTIAL

This section provides an overview of the types of potential and key considerations in assessing each level of energy efficiency potential.

4.4.1 Types of Potential

This section reviews the types of potential analyzed in this report, as well as some key methodological considerations in the development of technical, economic, and achievable potential. The first two types of potential, technical and economic, provide a theoretical upper bound for energy savings from energy efficiency measures. Still, even the best-designed portfolio of programs is unlikely to capture 100% of the technical or economic potential. Therefore, achievable potential attempts to estimate what savings can be realistically achieved through market interventions, when it can be captured, and how much it would cost to do so. A subset of achievable potential, program potential is an estimate of potential from a given set of programs and funding. **Figure 4-1** illustrates the types of energy efficiency potential considered in this analysis.

FIGURE 4-1. TYPES OF ENERGY EFFICIENCY POTENTIAL¹⁰

Not Technically Feasible	TECHNICAL POTENTIAL				
Not Technically Feasible	Not Cost Effective	ECONOMIC POTENTIAL			
Not Technically Feasible	Not Cost Effective	Market Barriers	MAXIMUM ACHIEVABLE POTENTIAL		
Not Technically Feasible	Not Cost Effective	Market Barriers	Partial Incentives	REALISTIC ACHIEVABLE POTENTIAL	
Not Technically Feasible	Not Cost Effective	Market Barriers	Partial Incentives	Program Constraints	PROGRAM POTENTIAL

4.4.1.1 Technical Potential

Technical potential is the theoretical maximum amount of energy use that could be displaced by efficiency, disregarding all non-engineering constraints such as cost-effectiveness and the willingness of end users to adopt the efficiency measures. Technical potential is only constrained by factors such as technical feasibility and applicability of measures. Under technical potential, GDS assumed that 100% of new construction and market opportunity measures are adopted as those opportunities become available (e.g., as new buildings are constructed, they immediately adopt efficiency measures, or as existing measures reach the end of their useful life). For retrofit measures, implementation was assumed to be resource constrained and that it was not possible to install all retrofit measures all at once. Rather, retrofit opportunities were assumed to be replaced incrementally until 100% of stock was converted to the efficient measure over a period of no more than 20 years.

The core equation used in the residential sector energy efficiency technical potential analysis for each individual efficiency measure is shown in **Equation 4-1** below. The C&I sector employs a similar analytical approach.

EQUATION 4-1 CORE EQUATION FOR RESIDENTIAL SECTOR TECHNICAL POTENTIAL



Where...

Base Case Equipment End-Use Intensity = the electricity used per customer per year by each base-case technology in each market segment. In other words, the base case equipment end-use intensity is the consumption of the electrical energy using equipment that the efficient technology replaces or affects.

¹⁰ Reproduced from "Guide to Resource Planning with Energy Efficiency." November 2007. US Environmental Protection Agency (EPA). Figure 2-1. Modified to depict the additional levels of achievable and program potential included in this study.

Saturation Share = the fraction of the end-use electrical energy that is applicable for the efficient technology in each market segment. For example, for residential water heating, the saturation share would be the fraction of all residential electric customers that have electric water heating in their household.

Remaining Factor = the fraction of equipment that is not considered to already be energy efficient. To extend the example above, the fraction of electric water heaters that is not already energy efficient.

Feasibility Factor = (also functions as the applicability factor) the fraction of the applicable units that are technically feasible for conversion to the most efficient available technology from an engineering perspective (e.g., it may not be possible to install heat pump water heaters in all homes because of space limitations).

Savings Factor = the percentage reduction in electricity consumption resulting from the application of the efficient technology.

Competing Measures & Interactive Effects Adjustments

GDS prevents double-counting of savings, and accounts for competing measures and interactive savings effects, through three primary adjustment factors:

Baseline Saturation Adjustment. Competing measure shares are factored into the baseline saturation estimates. For example, nearly all homes can receive insulation. To account for this, GDS' analysis used multiple measure permutations that account for varying impacts of different heating/cooling combinations and baseline saturations were applied to reflect the proportions of households with each heating/cooling combination.

Applicability Factor Adjustment. Combined measures into measure groups, where total applicability factor across measures is set to 100%. For example, homes cannot receive a programmable thermostat, connected thermostat, and smart thermostat. In general, the models assign the measure with the most savings the greatest applicability factor in the measure group, with competing measures picking up any remaining share.

Interactive Savings Adjustment. As savings are introduced from select measures, the per-unit savings from other measures need to be adjusted (downward) to avoid over-counting. The analysis typically prioritizes market opportunity equipment measures (versus retrofit measures that can be installed at any time). For example, the savings from a smart thermostat are adjusted down to reflect the efficiency gains of installing an efficient air source heat pump.

4.4.1.2 Economic Potential

Economic potential refers to the subset of the technical potential that is economically cost-effective (based on screening with the TRC test)¹¹ as compared to conventional supply-side energy resources.

In the TRC Test, avoided energy supply costs are used to assess the value of electric energy savings. Avoided cost values for electric energy, electric capacity, and avoided T&D were provided by MDU as part of an initial data request. Electric energy is based on an annual system marginal cost. For years outside of the avoided cost forecast timeframe, future year avoided costs are escalated by the rate of inflation.

MDU provided the GDS Team with monthly on and off-peak avoided energy costs¹². GDS used this data to create 8,760 avoided cost values for each forecast year. GDS then applied these avoided costs to the 8,760

¹¹ The TRC was used as the primary test for economic screening. Results of measure level screening under the Utility Cost Test (UCT), Participant Test, and Rate Impact Measure (RIM) Test were also provided. Current Retail rates by sector and state were estimated using EIA Form 861 data and escalated at a rate consistent with the provided electric avoided energy costs.

¹² A 15% adder was applied to the electric benefits in MT, consistent with the Administrative Rules of Montana (ARM) Statute 38.5.2001.

savings from each measure based on assigned end-use load shapes¹³ to determine the value of measures that save more energy during peak periods than those that might saving during off-peak periods. In addition, the avoided capacity and T&D avoided costs were applied to the estimated coincident peak demand savings for each measure.

Although the measures included in this study focused on those that result in primarily electric savings, any ancillary non-electric (gas and/or water) benefits were also included in the benefit-cost analysis.

4.4.1.3 Achievable Potential

Achievable potential is the amount of energy that can realistically be saved given various market barriers. Achievable potential considers real-world barriers to encouraging end users to adopt efficiency measures; the non-measure costs of delivering programs (for administration, marketing, analysis, and EM&V); and the capability of programs and administrators to boost program activity over time. Barriers include financial, customer awareness and willingness-to-participate (“WTP”) in programs, technical constraints, and other barriers the “program intervention” is modeled to overcome. Additional considerations include political and/or regulatory constraints. The potential study evaluated two achievable potential scenarios:

MAP estimates achievable potential on paying incentives equal to up to 100% of measure incremental costs and aggressive adoption rates.

RAP estimates achievable potential with MDU paying incentive levels at roughly 40% of the incremental measure costs. This level was selected to be representative of typical industry incentive levels. Note that the RAP level includes partial incentives (relative to incremental measure cost) but is not constrained by any previously determined spending levels.

4.4.1.3.1 Market Adoption Rates & Incentives

GDS assessed achievable potential on a measure-by-measure basis. In addition to accounting for the natural replacement cycle of equipment in the achievable potential scenario, GDS estimated measure specific maximum adoption rates that reflect the presence of possible market barriers and associated difficulties in achieving the 100% market adoption assumed in the technical and economic scenarios.

The initial step was to assess the long-term market adoption potential for energy efficiency technologies. Due to the wide variety of measures across multiple end-uses, GDS employed varied measure and end-use-specific ultimate adoption rates versus a singular universal market adoption curve. These long-term market adoption estimates were based on aggregated WTP market research presented in Chapter 2.4. The WTP research included questions to residential homeowners and nonresidential facility managers regarding their perceived willingness to purchase and install energy efficient technologies across various end uses and incentive/payback performance levels. One caveat to this approach is that the WTP adoption score is generally a simple function of incentive levels and/or payback performance. To recognize outside influences and barriers to adoption, select surveys also included questions to assess the impact of these barriers, or motivation factors, on the willingness to participate.

GDS utilized this primary market research data to estimate the long-term market adoption potential for both the maximum and realistic achievable scenarios. In the maximum achievable potential, incentives were assumed to represent 100% of the incremental measure cost (and 0-year payback). In the RAP scenario,

¹³ End-use load shapes were derived from the NREL ResStock and ComStock end-use libraries.

incentives were roughly 40% of the measure cost, with the payback period a function of the remaining cost relative to energy savings.

Last, for the long-term adoption rates, GDS also applied program awareness factor adjustments to the adoption rates derived from the WTP research. The WTP survey's provided information to the respondents surrounding typical program measures, savings, and costs. However, not all future eligible program participants will necessarily be aware that these programs exist. To account for this, GDS applied a modest awareness factor adjustment of 73-90% (depending on measure-type) in the calculation of the long-term RAP adoption rate, while no program awareness adjustment was made in the MAP scenario. C&I custom measures also received a "custom measure" adjustment of 75% to further reflect the difficulty in education and outreach for non-prescriptive measures.

GDS then estimated initial year adoption rates by reviewing the current saturation levels of efficient technologies and adjusting, using industry judgement, to account for the recent level of program activity (in Montana) and lack of program activity in the remaining service areas. GDS then assumed a non-linear ramp rate from the initial year market adoption rate to the various long-term market adoption rates for each specific end-use.

4.4.1.3.2 Non-Incentive Costs

Consistent with National Action Plan for Energy Efficiency (NAPEE) guidelines¹⁴, utility non-incentive costs were included in the overall assessment of cost-effectiveness at the MAP and RAP scenarios. Non-incentive costs include all non-incentive program delivery costs, including internal and external administrative and implementation costs, marketing, education and outreach, evaluation costs, or other associated program delivery costs. Program non-incentive costs were based on the median non-incentive costs from 2021 EIA Form 861 reporting data for energy efficiency. Residential non-incentive costs were assumed to be \$0.077 per first-year kWh saved, and non-residential non-incentive costs were \$0.05 per first-year kWh saved.

4.4.1.4 Program Potential

Program potential provides an estimate of the savings potential that could be achieved with potential improvements to the existing electric energy efficiency program portfolio. The scenario leverages the RAP estimates as well as additional program design considerations.¹⁵

4.4.1.5 Net To Gross

All estimates of technical, economic, and achievable potential, as well as measure level cost-effectiveness screening were conducted in terms of gross savings to reflect the absence of program design considerations in these phases of the analysis. The impacts of free-riders (participants who would have installed the high efficiency option in the absence of the program) and spillover customers (participants who install efficiency measures due to program activities, but never receive a program incentive) were considered in the development of program potential (Chapter 6).

¹⁴ National Action Plan for Energy Efficiency (2007). Guide for Conducting Energy Efficiency Potential Studies. Prepared by Optimal Energy. This study notes that economic potential only considers the cost of efficiency measures themselves, ignoring programmatic costs. Conversely, achievable potential should consider the non-measures costs of delivering programs. Pg. 2-4.

¹⁵ See Chapter 6 for more information regarding program potential.

5 ENERGY EFFICIENCY POTENTIAL

This section provides an overview of the technical, economic, and achievable electric energy efficiency potential in the residential and C&I sectors.¹⁶ **Figure 5-2** provides the technical, economic, MAP and RAP results for the 5-year, 10-year, and 20-year timeframes for all sectors combined. The respective 20-yr technical and economic potential is 35% and 30% of total sales. The MAP reaches 5.1% in five years while the RAP reaches 3.2% in five years. In 2043 (20 years), the MAP and RAP reach 20% and 12% of forecasted MWh sales, respectively. **Table 5-1** provides the estimated savings potential for the MT, ND, and SD services areas separately.

FIGURE 5-1: OVERVIEW OF ENERGY EFFICIENCY POTENTIAL – ALL SECTORS

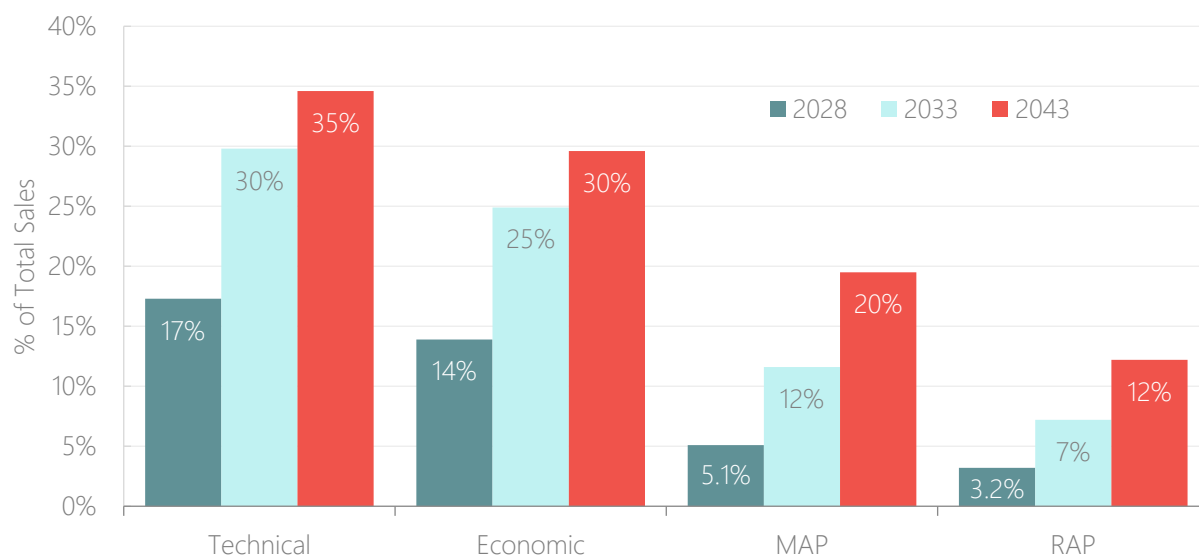


TABLE 5-1 SAVINGS AS A PERCENTAGE OF SALES BY SERVICE AREA – ALL SECTORS

	5-YR	10-YR	20-YR
Combined			
Technical	17.3%	29.8%	34.6%
Economic	13.9%	24.9%	29.6%
MAP	5.1%	11.6%	19.5%
RAP	3.2%	7.2%	12.2%
MT			
Technical	17.1%	29.3%	33.2%
Economic	14.8%	25.9%	29.6%
MAP	5.5%	12.4%	20.2%
RAP	3.3%	7.2%	12.1%
ND			
Technical	17.2%	29.7%	34.6%
Economic	13.5%	24.5%	29.3%
MAP	5.0%	11.3%	19.1%
RAP	3.2%	7.1%	12.2%

¹⁶ Program design and delivery recommendations, and estimates of program potential are included in Chapter 6.

SD			
Technical	19.1%	33.3%	39.5%
Economic	14.9%	27.2%	33.2%
MAP	5.5%	12.6%	22.1%
RAP	3.4%	7.8%	13.8%

5.1 RESIDENTIAL ENERGY EFFICIENCY POTENTIAL

There were 103 total unique residential electric measures included in the analysis. **Table 5-2** provides the number of unique measures by end-use.

TABLE 5-2. RESIDENTIAL ENERGY EFFICIENCY MEASURES BY END-USE

End-Use	Number of Unique Measures
Appliances	15
Behavior	1
HVAC	35
Lighting	12
Pool/Pump	3
New Construction	1
Plug Loads	2
Shell	27
Water Heating	7

Figure 5-2 provides the technical, economic, MAP and RAP results for the 5-year, 10-year, and 20-year timeframes. The respective 20-yr technical and economic potential is 45% and 37% of residential sector sales. The MAP reaches 4.1% in five years and grows to 11% over 10 years, while the RAP reaches 2.3% in five years and grows to 6% over ten years. The MAP and RAP reach 23% and 14% of residential sector sales, respectively, over the 20-yr timeframe of the study. **Table 5-3** Includes the summary breakdown at the state level.

FIGURE 5-2: OVERVIEW OF ENERGY EFFICIENCY POTENTIAL - RESIDENTIAL

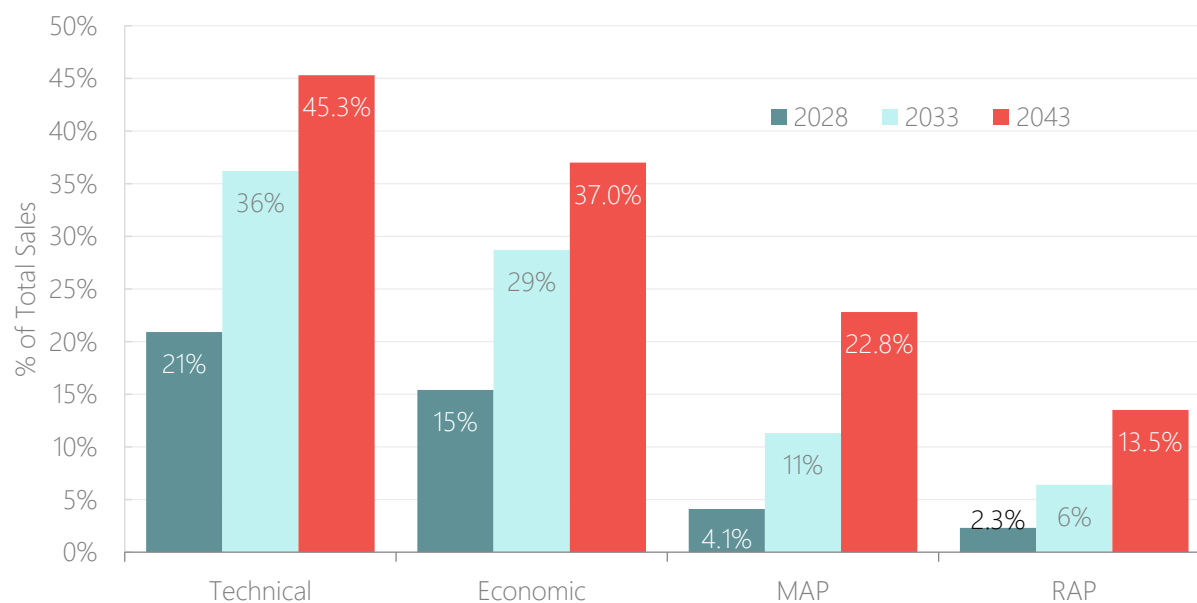


TABLE 5-3 SAVINGS AS A PERCENTAGE OF SALES BY SERVICE AREA - RESIDENTIAL

	5-YR	10-YR	20-YR
Combined			
Technical	20.9%	36.2%	45.3%
Economic	15.4%	28.7%	37.0%
MAP	4.1%	11.3%	22.8%
RAP	2.3%	6.4%	13.5%
MT			
Technical	21.1%	37.0%	46.5%
Economic	18.2%	32.8%	41.4%
MAP	4.7%	13.4%	27.0%
RAP	2.3%	6.6%	14.4%
ND			
Technical	20.8%	36.0%	44.8%
Economic	14.8%	27.8%	35.9%
MAP	4.0%	10.9%	21.7%
RAP	2.3%	6.3%	13.3%
SD			
Technical	21.2%	37.3%	47.5%
Economic	15.1%	28.7%	38.1%
MAP	3.8%	11.0%	23.8%
RAP	2.0%	5.9%	13.5%

5.1.1 Technical/Economic Potential

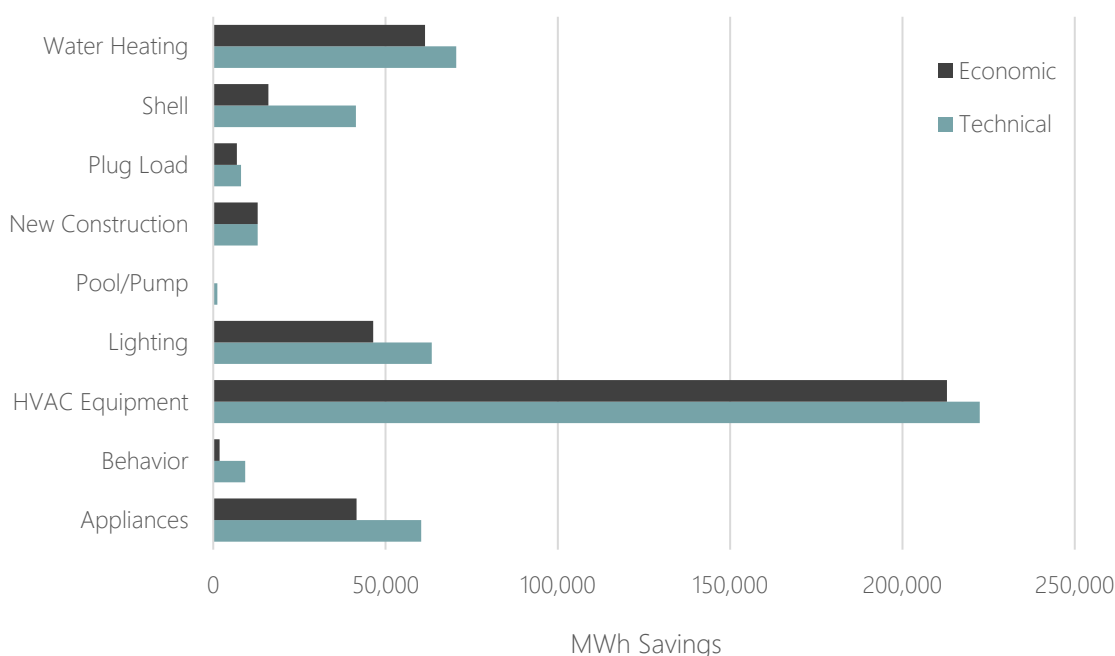
Table 5-4 provides cumulative annual technical and economic potential results by state in the MDU Integrated System for the initial five years of the analysis, as well as the 10-year, and 20-year timeframes. The combined technical potential is roughly 218,000 MWh by 2028 and rises to more than 489,000 MWh by 2043. Economic potential is slightly lower, at just under 400,000 MWh by 2043. Peak demand summer savings associated with technical potential reach 72 MW by 2028 and reach approximately 161 MW by 2043. Technical potential winter peak demand savings in the residential sector are assumed to be roughly 48 MW by 2028 and 115 MW by 2043.

TABLE 5-4 TECHNICAL & ECONOMIC RESIDENTIAL POTENTIAL – RESIDENTIAL

	2024	2025	2026	2027	2028	2033	2043
Combined							
Energy (MWh)							
Technical	46,254	91,402	134,687	176,790	217,821	383,005	489,485
Economic	33,014	65,683	97,951	129,732	161,118	303,121	399,967
Summer Peak Demand (MW)							
Technical	15.1	29.8	44.2	58.2	71.8	127.3	161.3
Economic	8.0	15.9	23.7	31.3	38.8	72.1	100.5
Winter Peak Demand (MW)							
Technical	10.0	19.8	29.3	38.5	47.5	83.6	114.9
Economic	7.5	15.0	22.3	29.5	36.7	68.8	97.4

	2024	2025	2026	2027	2028	2033	2043
Montana							
Energy (MWh)							
Technical	8,318	16,432	24,184	31,743	39,101	68,478	86,046
Economic	6,977	13,829	20,557	27,163	33,634	60,576	76,481
Summer Peak Demand (MW)							
Technical	2.7	5.4	8.0	10.6	13.1	23.2	29.2
Economic	2.2	4.3	6.4	8.5	10.5	19.4	24.7
Winter Peak Demand (MW)							
Technical	1.8	3.5	5.2	6.9	8.5	14.9	20.3
Economic	1.5	2.9	4.3	5.7	7.0	12.6	17.4
North Dakota							
Energy (MWh)							
Technical	34,902	68,978	101,685	133,474	164,467	289,490	371,582
Economic	23,982	47,761	71,280	94,453	117,385	223,295	297,914
Summer Peak Demand (MW)							
Technical	11.4	22.6	33.4	44.0	54.3	96.3	122.4
Economic	5.4	10.7	15.9	21.1	26.1	48.6	70.0
Winter Peak Demand (MW)							
Technical	7.6	15.0	22.1	29.1	35.8	63.1	87.0
Economic	5.6	11.1	16.6	21.9	27.3	51.6	73.6
South Dakota							
Energy (MWh)							
Technical	3,034	5,992	8,818	11,573	14,253	25,037	31,857
Economic	2,055	4,093	6,114	8,117	10,099	19,250	25,573
Summer Peak Demand (MW)							
Technical	0.9	1.9	2.7	3.6	4.4	7.8	9.7
Economic	0.5	0.9	1.3	1.8	2.2	4.1	5.9
Winter Peak Demand (MW)							
Technical	0.7	1.3	2.0	2.6	3.2	5.6	7.7
Economic	0.5	1.0	1.5	1.9	2.4	4.5	6.4

Figure 5-3 shows a comparison of the technical and economic potential (20-year) by end use. HVAC Equipment was the leading end-use among technical and economic potential, followed by Water Heating and Appliances. These end-uses represent roughly 72% and 79% of the technical and economic potential, respectively.

FIGURE 5-3: 20-YR RESIDENTIAL TECHNICAL & ECONOMIC POTENTIAL, BY END-USE

5.1.2 Achievable Potential

Figure 5-4 provides the MAP and RAP across the 20-yr timeframe of the study. The green and red bars provide the respective incremental annual MAP and RAP in MWh per year energy savings. The grey and orange lines provide the corresponding cumulative annual MAP and RAP as a percentage of forecasted annual residential sector sales. The MAP rises to 23% by 2043, and the RAP rises to 13%.

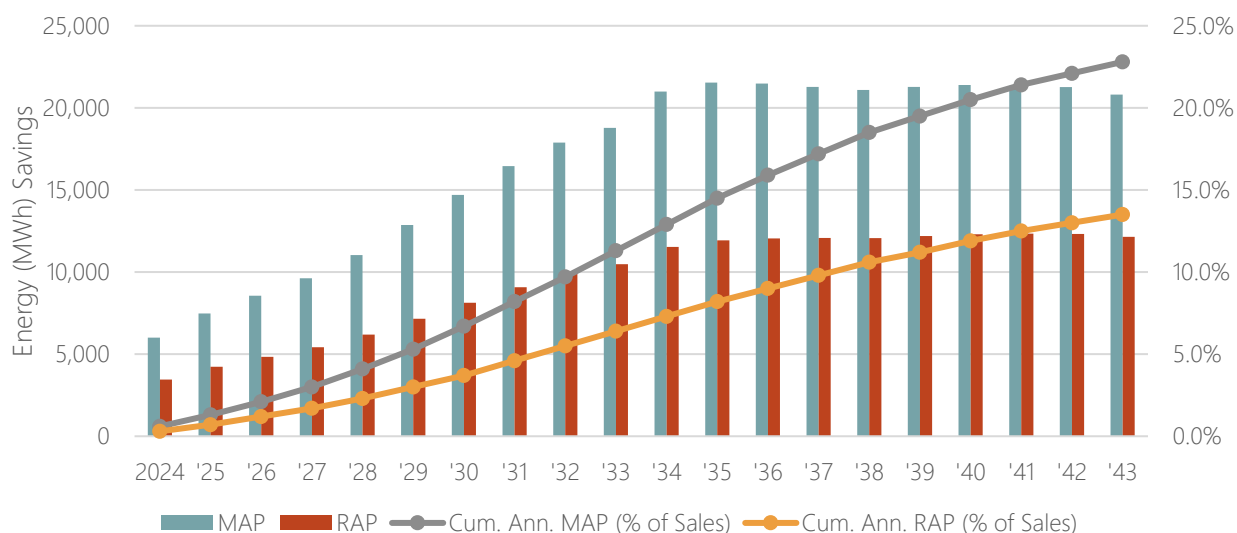
FIGURE 5-4: OVERVIEW OF RESIDENTIAL POTENTIAL – 20-YR RAP

Figure 5-5 provides a breakdown of the RAP potential in 2043 across residential end-uses and home types/vintages. In the RAP scenario, HVAC, water Heating and appliances combine to account for more than 80% of the potential. Lighting, new construction, and building shell upgrades account for an additional 17%

of the potential. Non-low-income single-family homes account for 70% of the potential, and non-low-income multifamily accounts for 7% of the potential. Low-income households account for 23% of the potential.

FIGURE 5-5: RESIDENTIAL POTENTIAL BY END-USE AND SECTOR TYPE – RAP 2043

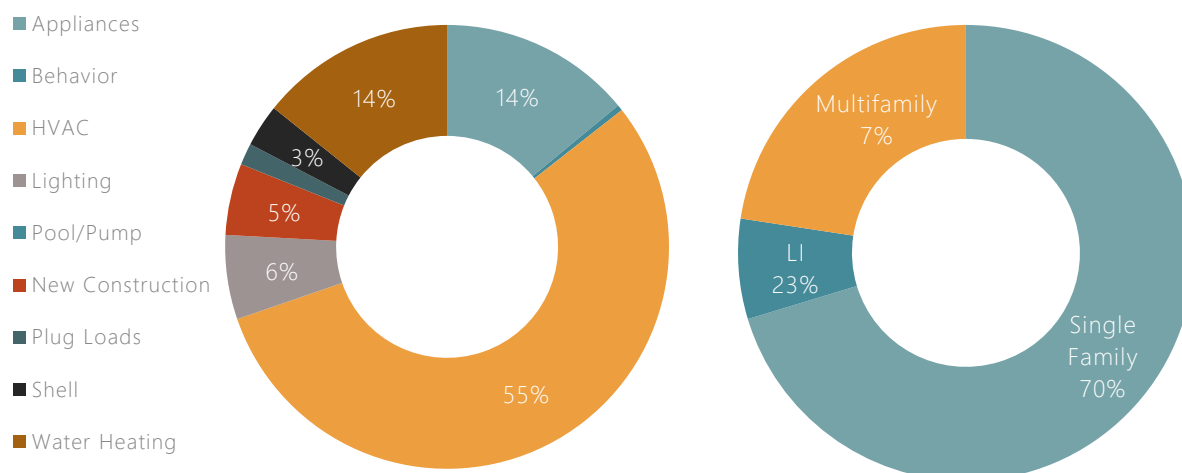


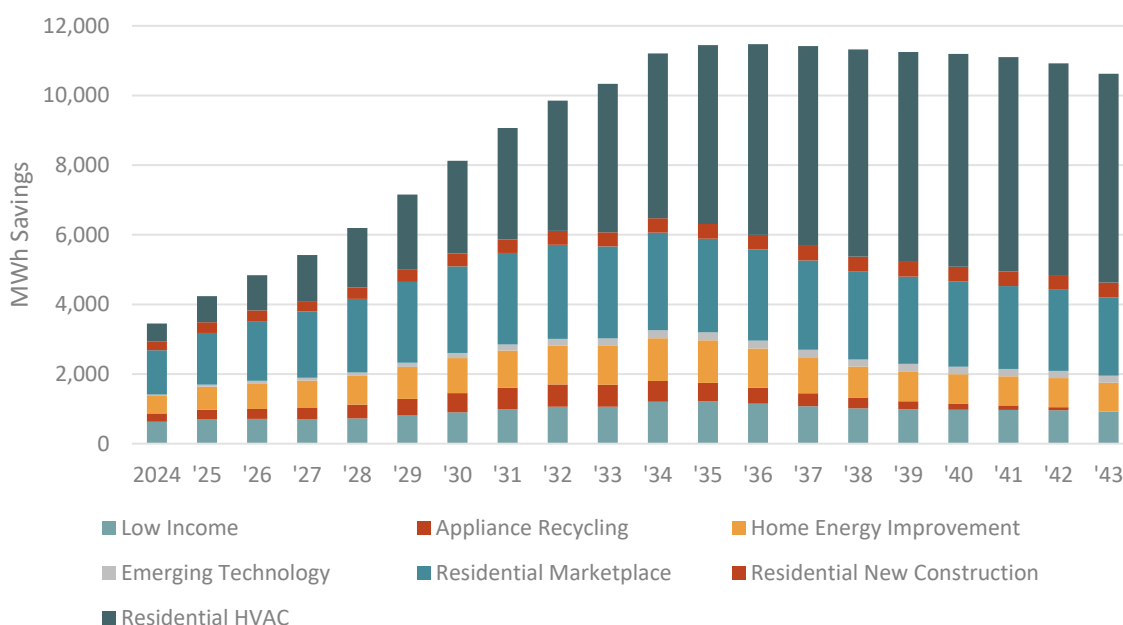
Table 5-5 provides incremental and cumulative annual residential sector energy and demand savings for MAP and RAP. Incremental annual is shown for the 2024-2028 timeframe, and cumulative annual potential is shown over the 5-yr, 10-yr and 20-yr time horizons. Incremental RAP energy savings over the initial 5 years increase from approximately 3,500MWh to 6,200 MWh. The total realistic achievable potential in 2028 (5-yr) is roughly 24,000 MWh and 145,000 MWh by 2043 (20-yr). Summer peak demand savings in the near-term average 1.2 MW per year in the RAP, with 28 MW in the summer of 2043. Incremental annual winter peak demand savings average 1.0 MW per year in the RAP scenario at the outset of the study, with winter peak demand savings of 33 MW in 2043.

TABLE 5-5 RESIDENTIAL SECTOR MAP & RAP POTENTIAL

	2024	2025	2026	2027	2028		5-YR	10-YR	20-YR
Combined									
IA & CA Energy (MWh)									
MAP	6,003	7,473	8,557	9,617	11,033		42,570	119,771	246,098
RAP	3,451	4,236	4,839	5,419	6,194		24,097	67,175	145,619
IA & CA Summer Peak Demand (MW)									
MAP	1.8	2.2	2.5	2.8	3.1		12.3	30.8	55.7
RAP	0.9	1.1	1.2	1.4	1.5		6.1	15.0	28.3
IA & CA Winter Peak Demand (MW)									
MAP	1.2	1.5	1.7	2.0	2.3		8.7	24.6	55.4
RAP	0.7	0.9	1.0	1.1	1.3		5.0	14.1	33.4
MT									
IA & CA Energy (MWh)									
MAP	1,171	1,487	1,747	2,005	2,308		8,694	24,711	49,911
RAP	585	735	857	979	1,124		4,272	12,204	26,643

	2024	2025	2026	2027	2028		5-YR	10-YR	20-YR
IA & CA Summer Peak Demand (MW)									
MAP	0.5	0.6	0.7	0.8	0.9		3.6	9.1	15.4
RAP	0.2	0.2	0.3	0.3	0.4		1.4	3.5	6.5
IA & CA Winter Peak Demand (MW)									
MAP	0.2	0.3	0.3	0.4	0.4		1.6	4.6	10.5
RAP	0.1	0.1	0.2	0.2	0.2		0.8	2.4	5.9
ND									
IA & CA Energy (MWh)									
MAP	4,483	5,540	6,293	7,026	8,054		31,314	87,653	180,241
RAP	2,680	3,266	3,709	4,129	4,714		18,467	51,035	109,892
IA & CA Summer Peak Demand (MW)									
MAP	1.2	1.4	1.6	1.8	2.0		8.0	19.8	36.8
RAP	0.7	0.8	0.9	1.0	1.1		4.3	10.5	20.1
IA & CA Winter Peak Demand (MW)									
MAP	0.9	1.1	1.3	1.5	1.7		6.6	18.4	41.0
RAP	0.6	0.7	0.8	0.9	1.0		3.9	10.8	25.3
SD									
IA & CA Energy (MWh)									
MAP	348	446	517	586	672		2,562	7,407	15,946
RAP	186	235	273	310	356		1,358	3,936	9,084
IA & CA Summer Peak Demand (MW)									
MAP	0.1	0.1	0.1	0.2	0.2		0.7	1.9	3.5
RAP	0.1	0.1	0.1	0.1	0.1		0.3	0.9	1.7
IA & CA Winter Peak Demand (MW)									
MAP	0.1	0.1	0.1	0.1	0.2		0.6	1.6	3.8
RAP	0.0	0.0	0.1	0.1	0.1		0.3	0.9	2.2

Figure 5-6 provides the incremental annual RAP MWh savings by general “program” type. This figure illustrates a diverse mix of program potential in the near term, highlighted by modest growth in the low-income sector and appliance recycling, new construction, and home energy improvement offerings. Over the 20-year study horizon, there are more significant savings opportunities from HVAC equipment measures and measures that were mapped to a “residential marketplace” offering (i.e., smart thermostats, ENERGY STAR appliances, smart strips, variable speed pool pumps and lighting controls).

FIGURE 5-6: INCREMENTAL ANNUAL RESIDENTIAL RAP – BY PROGRAM TYPE

5.1.3 Residential Benefits & Costs

This section provides benefits and costs information for the residential sector. **Table 5-6** provides the NPV benefits and costs for the MAP and RAP scenarios. In the MAP scenario, the NPV net benefits (benefits – costs) are approximately \$94 million over the study timeframe with a TRC ratio of 2.5. In the RAP scenario, the NPV net benefits are roughly \$53 million over the study timeframe with a TRC ratio of 2.6.

TABLE 5-6 NPV BENEFITS AND COSTS (IN \$MILLIONS) MAP & RAP POTENTIAL – 2043

	NPV Benefits	NPV Costs	TRC Ratio
Combined			
MAP	\$157.5	\$63.4	2.5
RAP	\$86.5	\$33.8	2.6
MT			
MAP	\$39.5	\$16.4	2.4
RAP	\$19.3	\$7.3	2.6
ND			
MAP	\$108.0	\$43.4	2.5
RAP	\$62.0	\$24.5	2.5
SD			
MAP	\$10.0	\$3.7	2.7
RAP	\$5.2	\$1.9	2.8

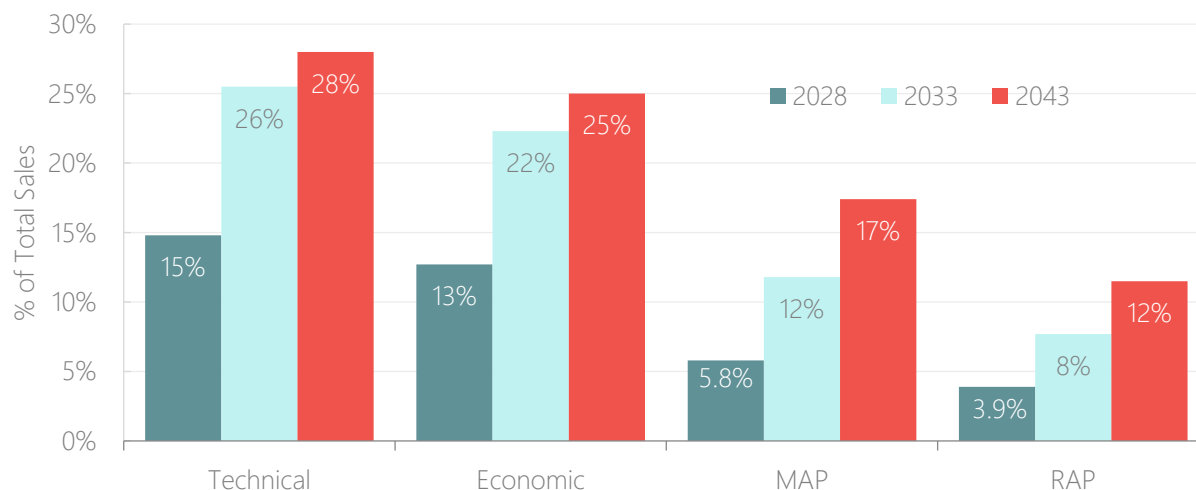
5.2 COMMERCIAL/INDUSTRIAL ENERGY EFFICIENCY POTENTIAL

This section provides the potential results for technical, economic, MAP and RAP for the commercial and industrial sector. There were 149 total unique commercial and industrial (C&I) electric measures included in the analysis. **Table 5-7** provides the number of unique measures by end-use.

TABLE 5-7. C&I ENERGY EFFICIENCY MEASURES BY END-USE

End-Use	Number of Unique Measures
Compressed Air	9
Cooking	9
HVAC	44
Lighting	21
Miscellaneous	7
Motors/Machine Drive	10
Office / Plug Load	9
Process	6
Refrigeration	24
Water Heat	5
Whole Building	5

Figure 5-7 provides the technical, economic, MAP and RAP results for the 5-year, 10-year, and 20-year timeframes. The respective 20-yr technical and economic potential is 28% and 25% of C&I sector sales. The MAP reaches 6% in five years and grows to 12% over 10 years, while the RAP reaches 4% in five years and grows to 8% over ten years. The MAP and RAP reach 17% and 12% of C&I sector sales, respectively, over the 20-yr timeframe of the study.

FIGURE 5-7: OVERVIEW OF ENERGY EFFICIENCY POTENTIAL**TABLE 5-8 SAVINGS AS A PERCENTAGE OF SALES BY SERVICE AREA – C&I**

	5-YR	10-YR	20-YR
Combined			
Technical	14.8%	25.5%	28.0%
Economic	12.7%	22.3%	25.0%
MAP	5.8%	11.8%	17.4%
RAP	3.9%	7.7%	11.5%
MT			
Technical	14.6%	24.8%	26.3%
Economic	12.8%	21.9%	23.6%
MAP	6.0%	11.9%	16.8%
RAP	4.0%	7.7%	10.9%

ND			
Technical	14.9%	25.8%	28.5%
Economic	12.8%	22.5%	25.5%
MAP	5.8%	11.8%	17.6%
RAP	3.9%	7.8%	11.7%
SD			
Technical	17.5%	30.2%	33.8%
Economic	14.9%	26.1%	29.9%
MAP	7.0%	14.1%	21.1%
RAP	4.7%	9.4%	14.2%

5.2.1 Technical/Economic Potential

Table 5-9 provides cumulative annual technical and economic potential results by state in the MDU Integrated System for the initial five years of the analysis, as well as the 10-year, and 20-year timeframes. The combined technical potential is roughly 216,000 MWh by 2028 and rises to more than 493,000 MWh by 2043. Economic potential is slightly lower, at 440,000 MWh by 2043. Peak demand summer savings associated with technical potential reach 31 MW by 2028 and reach approximately 76 MW by 2043. Technical potential winter peak demand savings in the C&I sector are assumed to be roughly 23 MW by 2028 and 54 MW by 2043.

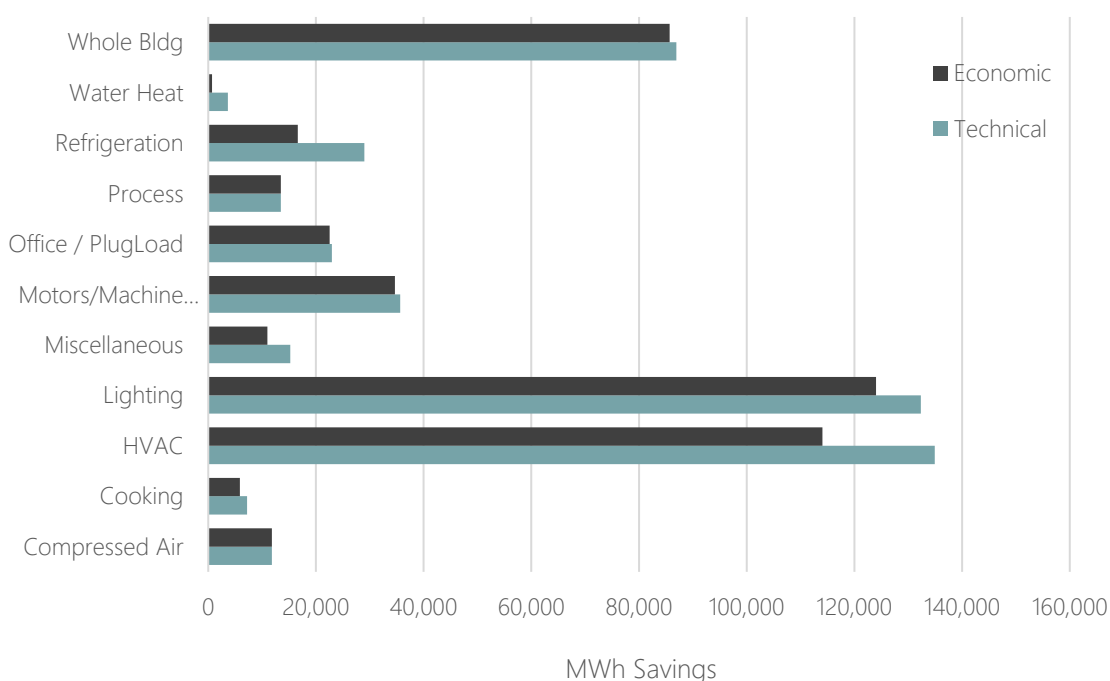
TABLE 5-9 TECHNICAL & ECONOMIC C&I POTENTIAL

	2024	2025	2026	2027	2028	2033	2043
Combined							
Energy (MWh)							
Technical	39,362	82,043	126,720	171,879	216,277	397,393	493,247
Economic	33,410	70,033	108,646	147,879	186,626	347,411	440,516
Summer Peak Demand (MW)							
Technical	5.6	11.7	18.1	24.7	31.1	58.4	76.2
Economic	4.3	9.0	14.0	19.0	23.9	44.9	59.5
Winter Peak Demand (MW)							
Technical	4.1	8.6	13.2	17.9	22.6	41.7	53.7
Economic	3.6	7.5	11.6	15.8	19.9	37.3	48.9
Montana							
Energy (MWh)							
Technical	7,482	15,537	23,910	32,330	40,550	73,529	88,556
Economic	6,502	13,547	20,898	28,308	35,557	64,936	79,492
Summer Peak Demand (MW)							
Technical	1.0	2.2	3.4	4.6	5.8	10.7	13.6
Economic	0.8	1.7	2.6	3.5	4.4	8.1	10.4
Winter Peak Demand (MW)							
Technical	0.8	1.6	2.4	3.3	4.1	7.5	9.4
Economic	0.7	1.4	2.2	2.9	3.7	6.7	8.5
North Dakota							
Energy (MWh)							

	2024	2025	2026	2027	2028	2033	2043
Technical	29,439	61,444	95,024	129,023	162,517	299,738	374,688
Economic	24,860	52,217	81,154	110,626	139,812	261,622	334,489
Summer Peak Demand (MW)							
Technical	4.2	8.8	13.6	18.6	23.5	44.4	57.9
Economic	3.2	6.8	10.5	14.3	18.1	34.2	45.5
Winter Peak Demand (MW)							
Technical	3.1	6.4	10.0	13.5	17.0	31.8	41.0
Economic	2.7	5.6	8.7	11.9	15.0	28.4	37.4
South Dakota							
Energy (MWh)							
Technical	2,441	5,062	7,786	10,527	13,210	24,127	30,003
Economic	2,048	4,270	6,594	8,945	11,257	20,853	26,536
Summer Peak Demand (MW)							
Technical	0.3	0.7	1.1	1.5	1.9	3.3	4.7
Economic	0.3	0.6	0.9	1.2	1.5	2.5	3.6
Winter Peak Demand (MW)							
Technical	0.3	0.5	0.8	1.1	1.4	2.4	3.3
Economic	0.2	0.5	0.7	1.0	1.2	2.1	3.0

Figure 5-8 shows a comparison of the technical and economic potential (20-year) by end use. Commercial lighting and commercial HVAC (heating, cooling & ventilation) were the leading end-uses for technical and economic potential followed by C&I whole building (large scale retrofits and new construction). These end-uses represent roughly 70% of the technical and economic potential.

FIGURE 5-8: 20-YR C&I TECHNICAL & ECONOMIC POTENTIAL, BY END-USE



5.2.2 Achievable Potential

Figure 5-9 provides the MAP and RAP across the 20-yr timeframe of the study. The green and red bars provide the respective incremental annual MAP and RAP in MWh per year energy savings. The grey and orange lines provide the corresponding cumulative annual MAP and RAP as a percent of forecasted annual C&I sector sales. The MAP rises to 17% by 2043, and the RAP rises to 12%.

FIGURE 5-9: OVERVIEW OF COMMERCIAL POTENTIAL – 20-YR RAP

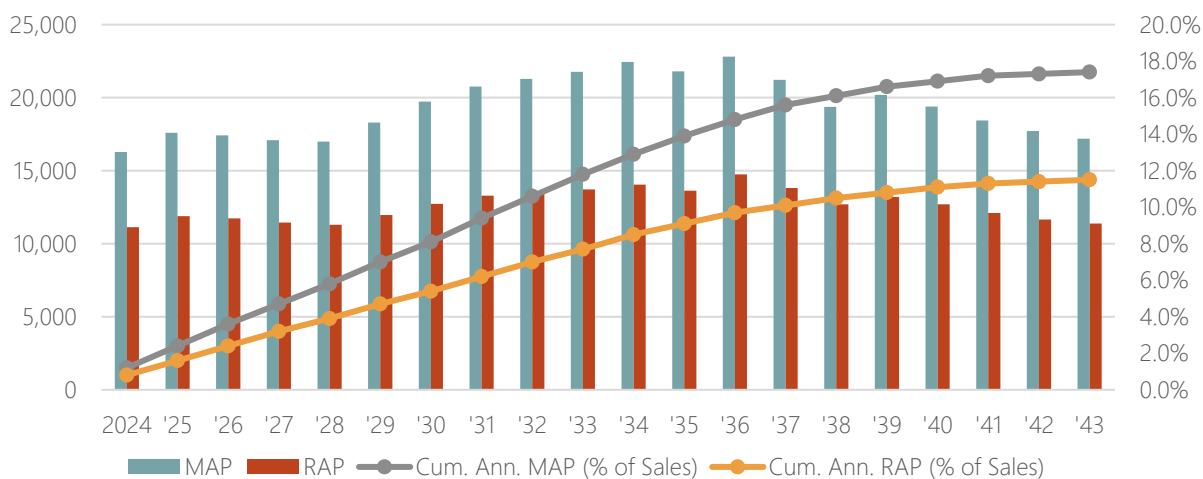
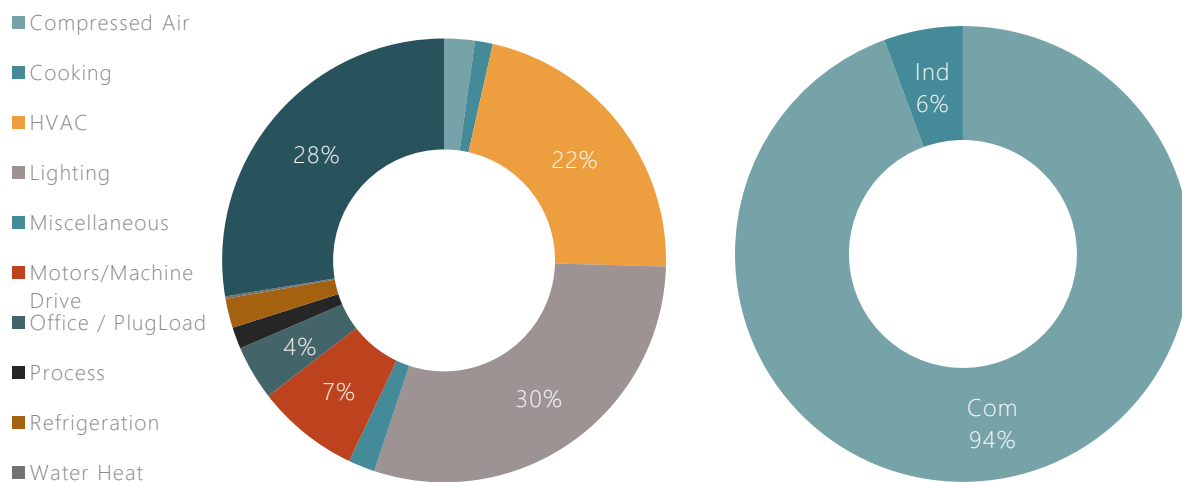


Figure 5-10 provides a breakdown of the RAP potential in 2043 across C&I end-uses and sector.¹⁷ In the RAP scenario, C&I lighting, C&I HVAC, and C&I whole building (retrofits and new construction) account for 80% of the potential. Across sector types, commercial sector potential represents 94% of the realistic achievable potential with industrial potential limited to 6% of the potential due to limited opportunities after the removal petroleum-related sales (particularly in ND and MT).

FIGURE 5-10: COMMERCIAL POTENTIAL BY END-USE AND SECTOR TYPE – RAP 2043



¹⁷ End-uses with less than 3% of total end-use or building type share do not display a data label (%) in donut-charts to improve readability of data.

Table 5-10 provides incremental and cumulative annual commercial sector energy and demand savings for MAP and RAP. Incremental annual is shown for the 2024-2028 timeframe, and cumulative annual potential is shown over the 5-yr, 10-yr and 20-yr time horizons. Incremental RAP energy savings over the initial 5 years hold relatively steady between 11,000-12,000 MWh per year. The total realistic achievable potential by 2028 (5-yr) is roughly 57,000 MWh and 202,000 MWh by 2043 (20-yr). Summer peak demand savings in the near-term are 1.6 MW per year, with 38 MW in the summer of 2043. Incremental annual winter peak demand savings are 1.3 MW per year in the RAP scenario at the outset of the study, with winter peak demand savings of 23 MW in 2043.

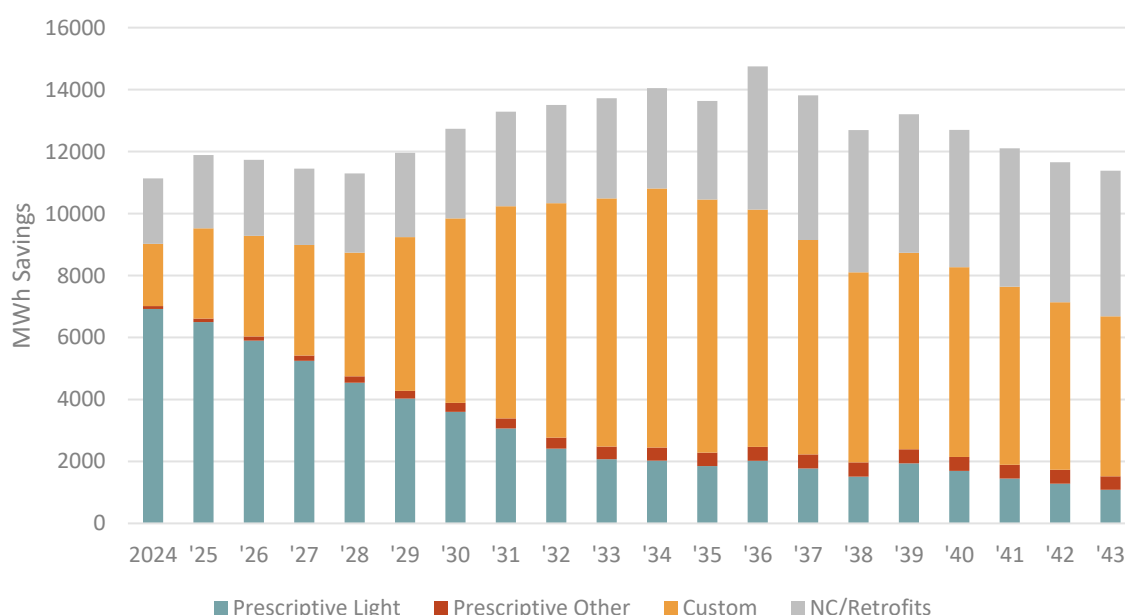
TABLE 5-10 C&I SECTOR MAP & RAP POTENTIAL

	2024	2025	2026	2027	2028		5-YR	10-YR	20-YR
Combined									
IA & CA Energy (MWh)									
MAP	16,278	17,592	17,416	17,092	16,993		85,134	183,858	306,779
RAP	11,136	11,888	11,733	11,452	11,295		57,369	120,736	202,468
IA & CA Summer Peak Demand (MW)									
MAP	2.1	2.3	2.3	2.3	2.3		11.2	24.1	55.4
RAP	1.5	1.6	1.6	1.6	1.6		7.7	16.4	38.0
IA & CA Winter Peak Demand (MW)									
MAP	1.8	1.9	1.9	1.9	1.8		9.3	19.8	33.5
RAP	1.3	1.3	1.3	1.3	1.3		6.5	13.5	22.9
MT									
IA & CA Energy (MWh)									
MAP	3,328	3,509	3,416	3,310	3,232		16,778	35,384	56,487
RAP	2,217	2,312	2,245	2,166	2,096		11,025	22,794	36,827
IA & CA Summer Peak Demand (MW)									
MAP	0.4	0.4	0.4	0.4	0.4		2.1	4.5	7.3
RAP	0.3	0.3	0.3	0.3	0.3		1.4	3.0	4.9
IA & CA Winter Peak Demand (MW)									
MAP	0.4	0.4	0.4	0.3	0.3		1.8	3.7	6.0
RAP	0.2	0.3	0.2	0.2	0.2		1.2	2.5	4.0
ND									
IA & CA Energy (MWh)									
MAP	11,924	12,991	12,926	12,729	12,715		63,083	137,206	231,568
RAP	8,217	8,834	8,760	8,573	8,495		42,763	90,431	153,029
IA & CA Summer Peak Demand (MW)									
MAP	1.6	1.7	1.7	1.7	1.7		8.4	18.2	45.5
RAP	1.1	1.2	1.2	1.2	1.2		5.8	12.4	31.3
IA & CA Winter Peak Demand (MW)									
MAP	1.3	1.4	1.4	1.4	1.4		6.9	14.9	25.5
RAP	0.9	1.0	1.0	1.0	1.0		4.9	10.2	17.4
SD									
IA & CA Energy (MWh)									
MAP	1,026	1,093	1,074	1,053	1,046		5,274	11,268	18,724

	2024	2025	2026	2027	2028		5-YR	10-YR	20-YR
RAP	703	742	729	713	704		3,580	7,510	12,611
IA & CA Summer Peak Demand (MW)									
MAP	0.1	0.1	0.1	0.1	0.1		0.7	1.5	2.5
RAP	0.1	0.1	0.1	0.1	0.1		0.5	1.0	1.8
IA & CA Winter Peak Demand (MW)									
MAP	0.1	0.1	0.1	0.1	0.1		0.6	1.2	2.1
RAP	0.1	0.1	0.1	0.1	0.1		0.4	0.8	1.4

Figure 5-11 provides the incremental annual RAP MWh savings by general “program” type. This figure illustrates that near-term savings are highlighted by prescriptive lighting measures. As the LED market transforms within the C&I space, these savings are expected to decline rapidly, with “custom” project savings increasing over time. The new construction/retrofit savings are driven by the growth in the C&I sales forecast over the 20-year study horizon, and whole building retrofit/renovation opportunities.

FIGURE 5-11: INCREMENTAL ANNUAL RAP – BY PROGRAM TYPE



5.2.3 C&I Benefits & Costs

This section provides benefits and costs information for the combined C/I sector. **Table 5-11** provides the NPV benefits and costs for the MAP and RAP scenarios. In the MAP scenario, the NPV net benefits (benefits – costs) are nearly \$48 million over the study timeframe with a TRC ratio of 1.6. In the RAP scenario, the NPV net benefits are nearly \$39 million over the study timeframe with a TRC ratio of 1.9.

TABLE 5-11 NPV BENEFITS AND COSTS (IN \$MILLIONS) MAP & RAP POTENTIAL – 2043

	NPV Benefits	NPV Costs	TRC Ratio
Combined			
MAP	\$125.2	\$77.0	1.6
RAP	\$80.8	\$42.4	1.9
MT			

	NPV Benefits	NPV Costs	TRC Ratio
MAP	\$27.7	\$16.2	1.7
RAP	\$17.5	\$8.9	2.0
ND			
MAP	\$90.1	\$56.1	1.6
RAP	\$58.4	\$30.8	1.9
SD			
MAP	\$7.4	\$4.6	1.6
RAP	\$4.9	\$2.7	1.8

6 DSM PROGRAM POTENTIAL OVERVIEW

The GDS Team conducted research and analysis to provide a recommendation for Montana-Dakota Utilities to consider as potential improvements to their electric energy efficiency program portfolio. The primary objective is to expand energy efficiency for all customers and to offer sector specific programs for residential, and commercial & industrial customers. The GDS Team combined market research of regional peer electric energy efficiency programs with the realistic potential outcomes from the market potential assessment, in addition to current industry trends and best practices. This activity was not a comprehensive portfolio optimization analysis, instead priorities focused on energy efficiency offerings for all customers. There may be additional factors beyond the scope of this analysis that would make certain considerations presented here infeasible for MDU to pursue or concepts that need to be tested with actual market conditions.

6.1 ANALYSIS APPROACH

The GDS Team sought to gather insight into the latest industry trends and best practices by reviewing literature (e.g., industry association trends report, conference papers, government agency white papers, evaluation reports, and DSM plans), as well as data associated with the program portfolios offered by peer utilities. Outcomes from the MPS market research and initial modeling outputs, as well as input from prior MDU program offerings were considered in the analysis.

Guiding principles for the analysis were to:

- Identify cost-effective program opportunities (>1.0 TRC) that can deliver electric energy efficiency savings identified in the market potential study;
- Look for opportunities to shape a portfolio that exhibits characteristics identified as optimal for advancing the long-term success of energy efficiency markets; and
- Consider objectives MDU highlighted in its most recent DSM Plan filings.

6.1.1 Market Research

As MDU's current electric energy efficiency program is only offered to Montana customers, the GDS Team established a framework for determining new programs through industry best practices and benchmarking of regional energy-efficiency programs.

ACEEE's Utility Energy Efficiency Scorecard served as a key reference for identifying DSM program characteristics that look beyond the basic components of high impact energy savings and cost-effectiveness. ACEEE's Scorecard ranks DSM programs based on a variety of characteristics, recognizing that many factors shape the context for what a utility can offer, as well as the range of benefits a program may provide. Characteristics identified as important for utility energy efficiency portfolios include:¹⁸

- **Comprehensive** – serving the full spectrum of customer needs and end uses.
- **Responsive to market changes** - including emerging program areas and strategies that address major or growing end uses.
- **Innovative and engaging** - bringing in new technologies and strategies.

¹⁸ ACEEE 2020 Utility EE Scorecard, see "Practices of Leading Energy-Saving Utilities," p. 91.

- **Simple, accessible, and hassle free** - to maximize customer participation.
- **Tailored** - to meet the unique needs of different customers and offering incentives at the most effective point in the supply chain for a given market.

The GDS Team selected several utilities for benchmarking comparison based on a combination of proximate geography and availability of granular measure-level data. For each of the comparison utilities, the GDS Team assembled data regarding program and measure offerings, incentives levels, and non-incentive program expenditures, as well as program cost-effectiveness. Data sources included DSM Plan filings, program websites, and other sources, where available. Energy-efficiency utility operated program research included:

- NorthWestern Energy (Montana, Nebraska, South Dakota)
- Black Hills Energy (Colorado, Iowa, Kansas, Montana, Nebraska, South Dakota, Wyoming)
- Rocky Mountain Power (Utah, Wyoming, Idaho)
- Ottertail Power (Minnesota, North Dakota, South Dakota)
- Regional Energy Coops (North Dakota, Montana, South Dakota, Wyoming)

The outcome of this market research was to identify candidate program archetypes with basic program go-to-market strategies and incentives, e.g. rebates, direct-install, marketplace, etc. for MDU's service territory.

6.1.2 Program Analysis

The GDS Team utilized a program planning tool to construct a bottom-up portfolio to estimate savings forecasts, budgets, and cost effectiveness for the proposed MDU energy efficiency programs. Forecasts and parameters at the individual measure level are derived from the realistic achievable scenario outcomes including forecasted participation, energy savings, incremental costs, and incentives. Measures with cost effectiveness results greater than 0.8 were identified as candidate measures for program archetype assignment. Individual measure permutations are bundled together prior to assignment to candidate program archetype. Program measure forecasts and incentives are reassessed within a program archetype. Program and portfolio cost effectiveness is assessed with final measures and expected program non-incentive costs. Budgets and participation are forecasted over five years. Additional considerations are given to non-administrative, or cross-cutting costs at the portfolio level when they cannot be attributed to a single program.

The program potential scenario simulates the expected program outcomes in forecasted years by including the following factors informed by best practice research:

- Incentive levels and structures
- Program non-incentive costs (administrative)
- Historical participation and spending in previous program cycles

The GDS Team recognizes the limitations of this secondary market research and analysis, understanding there could be factors which could limit the applicability of these considerations. The GDS Team would recommend that MDU gather program costs and measure details through detailed bottom-up labor estimates or market implementation contractors and vendors to validate these findings. Additionally, markets in the MDU service territory may not react immediately and/or the program may require time to mature operations; consequently, some of these forecasts should have cost effectiveness assessed after several years.

6.2 PROGRAM POTENTIAL RESULTS

Market research and accompanying analysis result in program potential as a subset of the cost-effective realistic achievable potential. Recommendations are based on general portfolio budget constraints, MDU applicable program concepts, and expected participation. A 5-year portfolio plan was developed with focus on the three-year period 2024 – 2026, expecting to align with a regulatory DSM program filing period.¹⁹

6.2.1 Portfolio

Figure 6-1 and Figure 6-2 summarize the proposed program potential budgets and expected energy savings.

FIGURE 6-1: FIVE-YEAR ENERGY EFFICIENCY PORTFOLIO BUDGET EXPENDITURE FORECAST

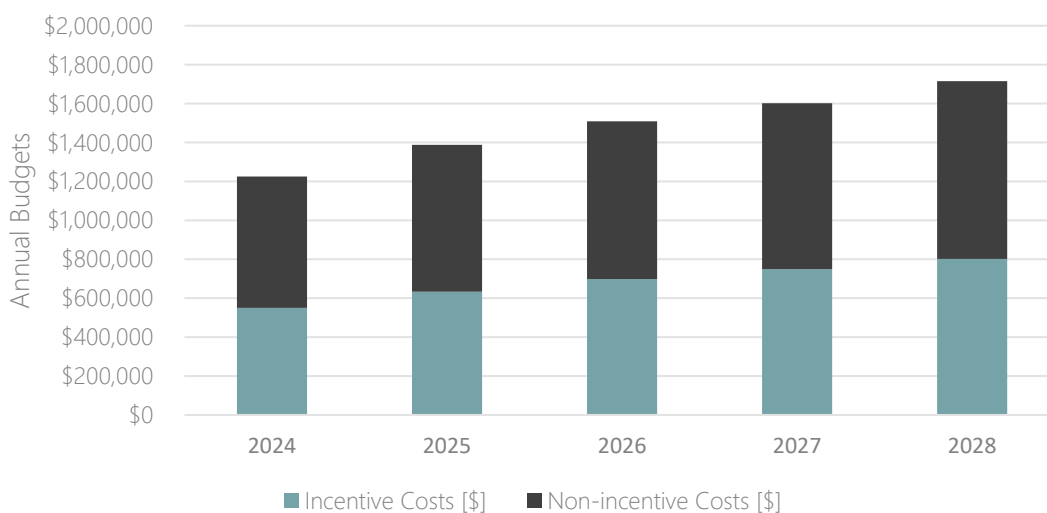
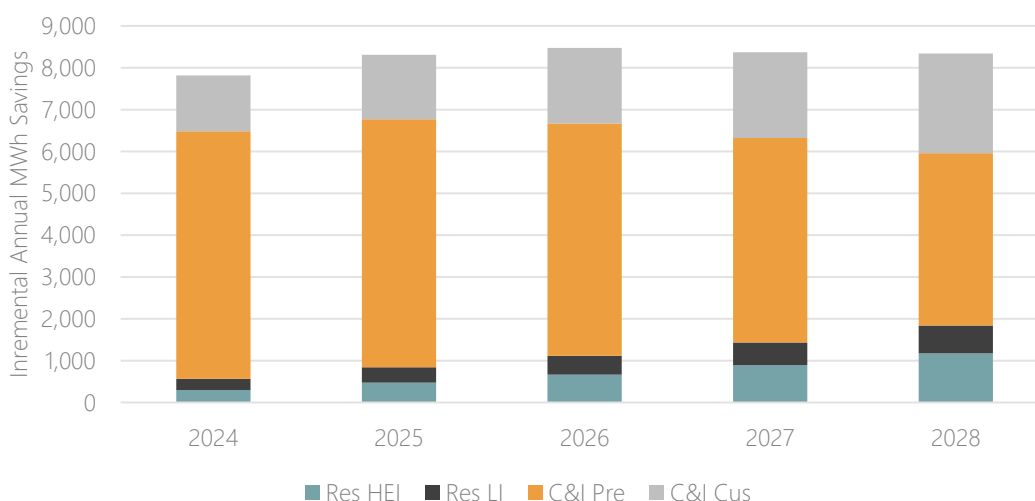


FIGURE 6-2: FIVE-YEAR ENERGY EFFICIENCY PORTFOLIO ENERGY SAVINGS FORECAST



¹⁹ See Appendix C for annual participation data for each program.

Table 6-2 summarizes the forecasted portfolio cost effectiveness outcomes for the three-year period (2024 – 2026).

TABLE 6-1: COST EFFECTIVENESS SUMMARY OF BENEFITS AND COSTS PER TEST

Component	Participant Cost Test (PCT)	Utility Cost Test (UCT)	Ratepayer Impact Measure (RIM)	Total Resource Cost (TRC)
Energy & Capacity Related Avoided Costs		Benefit	Benefit	Benefit
Incremental Equipment and O&M Costs	Cost			Cost
Program Admin Costs		Cost	Cost	Cost
Incentive Payments	Benefit	Cost	Cost	
Bill Savings/Lost Revenues	Benefit		Cost	

TABLE 6-2: THREE YEAR (2024-2026) PORTFOLIO COST EFFECTIVENESS SUMMARY

Cost-Effectiveness Results	Net Present Value (2023)
Total Resource Cost (TRC)	
TRC Costs	\$6,137,938
TRC Benefits	\$9,558,607
TRC Net Benefits (\$)	\$3,420,669
TRC Net Benefits (Ratio)	1.6
Ratepayer Impact Measure (RIM)	
RIM Costs	\$38,549,781
RIM Benefits	(\$25,164,799)
RIM Net Benefits (\$)	(\$63,714,579)
RIM Net Benefits (Ratio)	(0.7)
Utility Cost Test (UCT)	
UCT Costs	\$4,122,255
UCT Benefits	\$9,262,727
UCT Net Benefits (\$)	\$5,140,472
UCT Net Benefits (Ratio)	2.2
Participant Cost Test (PCT)	
PCT Costs	\$2,473,520
PCT Benefits	\$36,709,412
PCT Net Benefits (\$)	\$34,235,893
PCT Net Benefits (Ratio)	14.8

Where:

- **TRC Costs** = (Admin Costs) + (Incremental and O&M NPV Measure Costs)
- **TRC Benefits** = (Lifetime NPV Avoided Energy Costs) + (Tax Credits)

- **RIM Costs** = (Admin Costs) + (Incentive Payments) + (Lifetime NPV Lost Revenue)
- **RIM Benefits** = (Lifetime NPV Avoided Energy Costs)
- **UCT Costs** = (Admin Costs) + (Incentive Payments); can be considered program budget
- **UCT Benefits** = (Lifetime NPV Avoided Energy Costs)
- **PCT Costs** = (Incremental and O&M NPV Measure Costs)
- **PCT Benefits** = (Incentive Payments) + (Lifetime NPV Bill Savings)

6.2.2 Home Energy Improvement (HEI) Program

The Home Energy Improvement Program will promote energy efficiency improvements in existing homes and provide financial incentives and assessments for implementing eligible energy efficiency measures. The program provides customers, remodelers, and property owners with individual improvement options for HVAC and weatherization technologies. The program will largely offer incentives through rebates but may consider offering supplemental targeted energy audits.

Included Measures – these can go to market as individual measures, especially HVAC equipment, and/or bundled measures that would be delivered through a package in new construction or remodel:

- Air Sealing
- Air Source Heat Pump
- Attic Fan
- Basement Insulation
- Bathroom Aerator
- Central Air Conditioner
- Ductless AC
- Exterior Lighting Controls
- Ductless Heat Pump
- Duct Sealing
- Kitchen Aerator
- Light Sensor
- Pipe Wrap
- Heat Pump Water Heater
- Room Air Conditioner
- Shower Valve
- Showerhead
- Smart Thermostat

Table 6-3 summarizes the forecasted three-year portfolio cost effectiveness outcomes, with the three-year sum of annual incremental net energy savings at 1,437 MWh.

TABLE 6-3: THREE-YEAR (2024-2026) HOME ENERGY IMPROVEMENT PROGRAM COST EFFECTIVENESS SUMMARY

Cost-Effectiveness Results	Net Present Value (2023)
Total Resource Cost (TRC)	
TRC Costs	\$669,843
TRC Benefits	\$653,578
TRC Net Benefits (\$)	(\$16,266)
TRC Net Benefits (Ratio)	1.0
Ratepayer Impact Measure (RIM)	
RIM Costs	\$2,954,322
RIM Benefits	(\$1,890,010)
RIM Net Benefits (\$)	(\$4,844,333)
RIM Net Benefits (Ratio)	(0.6)
Utility Cost Test (UCT)	
UCT Costs	\$459,761.98
UCT Benefits	\$604,550
UCT Net Benefits (\$)	\$144,788
UCT Net Benefits (Ratio)	1.3
Participant Cost Test (PCT)	
PCT Costs	\$239,439
PCT Benefits	\$2,725,034
PCT Net Benefits (\$)	\$2,485,595
PCT Net Benefits (Ratio)	11.4

6.2.3 Residential Low-Income Program

The Residential Low-Income program is dedicated to MDU customers who are eligible for the Low-Income Energy Assistance Program (LIHEAP) funds. The program promotes energy efficiency improvements in existing homes and provides financial incentives and assessments for implementing eligible energy efficiency measures.

TABLE 6-4: THREE YEAR (2024-2026) RESIDENTIAL LOW INCOME COST EFFECTIVENESS SUMMARY

Cost-Effectiveness Results	Net Present Value (2023)
Total Resource Cost (TRC)	
TRC Costs	\$803,996
TRC Benefits	\$513,501
TRC Net Benefits (\$)	(\$290,495)
TRC Net Benefits (Ratio)	0.6
Ratepayer Impact Measure (RIM)	
RIM Costs	\$2,739,707

Cost-Effectiveness Results	Net Present Value (2023)
RIM Benefits	(\$1,470,471)
RIM Net Benefits (\$)	(\$4,210,179)
RIM Net Benefits (Ratio)	-0.5
Utility Cost Test (UCT)	
UCT Costs	\$798,610
UCT Benefits	\$470,626
UCT Net Benefits (\$)	(\$327,984)
UCT Net Benefits (Ratio)	0.6
Participant Cost Test (PCT)	
PCT Costs	\$296,713
PCT Benefits	\$2,268,706
PCT Net Benefits (\$)	\$1,971,994
PCT Net Benefits (Ratio)	7.6

Included Measures – these can go to market as individual measures, especially HVAC equipment, and/or bundled measures that would be delivered through a package in new construction or remodel:

- ❑ Air Sealing
- ❑ Air Source Heat Pump
- ❑ Attic Insulation
- ❑ Basement Insulation
- ❑ Bathroom Aerator
- ❑ Central Air Conditioner
- ❑ Ductless AC
- ❑ Energy Star Door
- ❑ Exterior LED Lighting
- ❑ Ductless Heat Pump
- ❑ Duct Sealing
- ❑ Kitchen Aerator
- ❑ LED Lighting
- ❑ Pipe Wrap
- ❑ Heat Pump Water Heater
- ❑ Room Air Conditioner
- ❑ Shower Valve
- ❑ Showerhead
- ❑ Smart Thermostat
- ❑ Wall Insulation

6.2.4 C&I Prescriptive Program

Incentives offered through this program serve to reduce the incremental cost to upgrade to high-efficiency cooking and lighting equipment and controls over standard efficiency options for new and existing commercial customers. The program includes equipment with easily calculated savings, provides straightforward and easy participation for customers, and allows for reduced EM&V costs. The program should consider multiple participation options with energy audits and higher incentive levels available for small hard-to reach business customers.

Measure parameters may be refined during final program development, including establishing final eligibility criteria and measure-level project caps, if necessary. The incentive amounts for individual measures may be periodically adjusted to reflect current market conditions, changes in equipment costs or program economics, or to encourage participation during certain time periods, while maintaining the overall cost-effectiveness of the program. The structure of the C&I Prescriptive Program also allows for straightforward expansion to incorporate additional cost-effective measures in the future with minimal design and implementation expenses.

Included Measures:

- ❑ Daylighting Controls
- ❑ Dishwashers
- ❑ Exterior Area Light Fixtures
- ❑ LED Downlight Fixtures
- ❑ LED High Bays
- ❑ LED Interior Directional Fixtures
- ❑ LED Low Bays
- ❑ LED T8 Tube Replacements
- ❑ LED Troffers
- ❑ LED Wallpacks
- ❑ Occupancy Sensors

Table 6-5 summarizes the forecasted three-year portfolio cost effectiveness outcomes, with the three-year sum of annual incremental net energy savings at 17,403 MWh.

TABLE 6-5: THREE-YEAR (2024-2026) C&I PRESCRIPTIVE COST EFFECTIVENESS SUMMARY

Cost-Effectiveness Results	Net Present Value (2023)
Total Resource Cost (TRC)	
TRC Costs	\$3,637,103
TRC Benefits	\$6,706,789
TRC Net Benefits (\$)	\$3,069,686
TRC Net Benefits (Ratio)	1.8
Ratepayer Impact Measure (RIM)	
RIM Costs	\$26,159,157
RIM Benefits	(\$17,428,478)
RIM Net Benefits (\$)	(\$43,587,635)
RIM Net Benefits (Ratio)	(0.7)

Cost-Effectiveness Results	Net Present Value (2023)
Utility Cost Test (UCT)	
UCT Costs	\$2,189,977
UCT Benefits	\$6,540,702
UCT Net Benefits (\$)	\$4,350,725
UCT Net Benefits (Ratio)	3.0
Participant Cost Test (PCT)	
PCT Costs	\$1,602,824
PCT Benefits	\$25,219,710
PCT Net Benefits (\$)	\$23,616,886
PCT Net Benefits (Ratio)	15.7

6.2.5 C&I Custom Program

This program provides a platform for comprehensive energy efficiency projects in existing and new facilities that go beyond discrete measures and common, measure-level efficiency practices. The C&I Custom Program provides incentives for efficiency improvements not included in the C&I Prescriptive Program.

All program incentives should be based on the calculated, verified energy savings achieved for each project. The C&I Custom Program does not define a specific list of eligible measures and bases participation on verifiable energy savings resulting from measures or system improvements implemented. Due to the complexity and variety of measures that could potentially be included, the C&I Custom Program requires the applicant to submit calculations using industry-accepted methods for determining energy savings and appropriate baselines. These savings could be derived from capital improvements in equipment or from retro-commissioning (RCx).

Expected End-Uses:

- HVAC
- Refrigeration
- Ventilation
- Compressed Air
- Whole Building New Construction

Table 6-6 summarizes the forecasted three-year portfolio cost effectiveness outcomes, with the three-year sum of annual incremental net energy savings at 4,676 MWh.

TABLE 6-6: THREE-YEAR (2024-2026) C&I CUSTOM COST EFFECTIVENESS SUMMARY

Cost-Effectiveness Results	Net Present Value (2023)
Total Resource Cost (TRC)	
TRC Costs	\$1,026,988
TRC Benefits	\$1,688,243
TRC Net Benefits (\$)	\$661,255
TRC Net Benefits (Ratio)	1.6

Cost-Effectiveness Results	Net Present Value (2023)
Ratepayer Impact Measure (RIM)	
RIM Costs	\$6,716,564
RIM Benefits	(\$4,391,173)
RIM Net Benefits (\$)	(\$11,107,736)
RIM Net Benefits (Ratio)	(0.7)
Utility Cost Test (UCT)	
UCT Costs	\$673,910
UCT Benefits	\$1,651,481
UCT Net Benefits (\$)	\$977,570
UCT Net Benefits (Ratio)	2.5
Participant Cost Test (PCT)	
PCT Costs	\$334,524
PCT Benefits	\$6,515,928
PCT Net Benefits (\$)	\$6,181,404
PCT Net Benefits (Ratio)	19.5

6.2.6 Cross-Cutting Portfolio Items

Finally, within the portfolio plan and considered within the cost-effectiveness outcomes listed above, the following cross-cutting costs should be and are included:

- Industry specific tracking, recording, and reporting information system
- A minimum of 5% for evaluation measurement and verification (EM&V) along with supporting planning activities. Within this portfolio recommendation, it is assumed that evaluation activities would occur within a three-cycle. Given the condition many programs will be new, it would be advisable to commence with process evaluation activities early in the program activity to identify improvement activities. Additionally, it would be advisable to conduct impact evaluation, including net-to-gross research, if appropriate, later in the three-year cycle to allow for program maturation.

6.3 KEY CONSIDERATIONS

The following considerations, developed with MDU, were instrumental in defining priorities for program and portfolio development and recommendations.

6.3.1 Expand Offerings for Commercial Lighting

As noted earlier in this report, the commercial lighting end-use is the largest cost-effective opportunity for energy efficiency within MDU's service territory. MDU currently implements a prescriptive commercial lighting program in Montana and the GDS team would recommend expanding that offering into other states as regulatory processes permit. A simple, easy to utilize, and cost-effective program archetype would be important to reach the largest program opportunity. Prescriptive programs have been and remain an important component of many DSM programs in North America with many of them having large shares of commercial lighting measures.

6.3.2 Include Offerings for Low- and Moderate-Income Customers

MDU does not currently have a program offering for low-income and hard to serve residential customers. It should be a priority to establish an easy-to-participate efficiency program directly supporting customers, remodelers, and property owners with individual improvement(s) options for HVAC and weatherization technologies. It is important for the program offering to address the share of moderate-income residential customers that are marginally above the economic threshold for Weatherization funds. To reduce the opportunity for competition, the Home Energy Improvement Program (HEIP), should direct customers to the low-income customers when eligible customers seek whole-home renovations.

6.3.3 Monitor Inflation Reduction Act

Within the horizon of this study, it is expected that significant additional funding marked for energy efficiency and building electrification technologies for residential and non-residential customers will come through the Inflation Reduction Act²⁰ ("IRA"). As of the date of this report, many details of the IRA implementation are uncertain and unresolved. Of specific concern is a significant portion of funds are directed toward low-income customers (over \$214 million in funds are allocated for low-income residential homes in the Integrated System).²¹ These funds are expected to be distributed through state energy offices with the intention that customers can receive point-of-sale (POS) rebates. POS rebates are convenient for customers, but often introduce complexity for back-end tracking and validation systems. Additionally, all utility sponsored programs with incentives for overlapping technologies and measures will need to decide how to proceed in order to achieve maximum outcomes. In the best-case scenario, the added funds increase benefits for customers, contractors, and MDU. In worst case conditions, dual sources of incentives (MDU and IRA POS rebates) could create confusion, high free-ridership, and even fraudulent actions. It is recommended that MDU monitor market conditions accordingly and adjust when prudent or practicable.

²⁰ <https://www.irs.gov/inflation-reduction-act-of-2022>

²¹ <https://www.energy.gov/articles/biden-harris-administration-announces-state-and-tribe-allocations-home-energy-rebate>

APPENDIX A. Residential Measure Data

Residential Measure Summary

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1001	Residential	Appliances	ENERGY STAR Air Purifier	Residential Marketplace	SF	N/A	MO	1,201.4	57%	683.0	0.078	9	\$92	100%	50%	PUR-1	12%	92%	94%	93%	3.1	3.1	1.0	5.2
1002	Residential	Appliances	ENERGY STAR Air Purifier	Residential Marketplace	MF	N/A	MO	1,201.4	57%	683.0	0.078	9	\$92	100%	50%	PUR-5	12%	92%	94%	93%	3.1	3.1	1.0	5.2
1003	Residential	Appliances	ENERGY STAR Refrigerator	Residential Marketplace	SF	N/A	MO	349.2	10%	35.0	0.005	14	\$28	100%	50%	REF-1	100%	65%	83%	72%	0.8	0.8	1.0	1.3
1004	Residential	Appliances	ENERGY STAR Refrigerator	Residential Marketplace	MF	N/A	MO	349.2	10%	35.0	0.005	14	\$28	100%	50%	REF-5	100%	65%	76%	72%	0.8	0.8	1.0	1.3
1005	Residential	Appliances	CEE Tier 2 Refrigerator	Residential Marketplace	SF	N/A	MO	349.2	15%	52.4	0.008	14	\$112	100%	50%	REF-1	100%	65%	83%	72%	0.3	0.3	1.0	0.5
1006	Residential	Appliances	CEE Tier 2 Refrigerator	Residential Marketplace	MF	N/A	MO	349.2	15%	52.4	0.008	14	\$112	100%	50%	REF-5	100%	65%	76%	72%	0.3	0.3	1.0	0.5
1007	Residential	Appliances	CEE Tier 3 Refrigerator	Residential Marketplace	SF	N/A	MO	349.2	20%	69.8	0.011	14	\$134	100%	50%	REF-1	100%	65%	83%	72%	0.3	0.3	1.0	0.5
1008	Residential	Appliances	CEE Tier 3 Refrigerator	Residential Marketplace	MF	N/A	MO	349.2	20%	69.8	0.011	14	\$134	100%	50%	REF-5	100%	65%	76%	72%	0.3	0.3	1.0	0.5
1009	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	SF	NLI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-1	36%	20%	83%	36%	3.2	3.2	1.0	5.6
1010	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	SF	LI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-2	36%	20%	75%	36%	3.2	3.2	1.0	5.6
1011	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	MF	NLI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-5	36%	20%	67%	36%	3.2	3.2	1.0	5.6
1012	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	MF	LI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-6	36%	20%	75%	36%	3.2	3.2	1.0	5.6
1013	Residential	Appliances	ENERGY STAR Clothes Washer	Residential Marketplace	SF	N/A	MO	590.0	24%	139.6	0.018	11	\$87	100%	50%	CW-1	96%	66%	83%	73%	2.4	2.4	1.0	2.7
1014	Residential	Appliances	ENERGY STAR Clothes Washer	Residential Marketplace	MF	N/A	MO	590.0	24%	139.6	0.018	11	\$87	100%	50%	CW-5	96%	66%	76%	73%	2.4	2.4	1.0	2.7
1015	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Residential Marketplace	SF	N/A	MO	590.0	43%	254.8	0.033	11	\$85	100%	50%	CW-1	96%	66%	83%	73%	4.0	4.0	1.0	4.6
1016	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Residential Marketplace	MF	N/A	MO	590.0	43%	254.8	0.033	11	\$85	100%	50%	CW-5	96%	66%	76%	73%	4.0	4.0	1.0	4.6
1017	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 3)	Residential Marketplace	SF	N/A	MO	590.0	47%	275.6	0.036	11	\$99	100%	50%	CW-1	96%	66%	83%	73%	3.7	3.7	1.0	4.3
1018	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 3)	Residential Marketplace	MF	N/A	MO	590.0	47%	275.6	0.036	11	\$99	100%	50%	CW-5	96%	66%	76%	73%	3.7	3.7	1.0	4.3
1019	Residential	Appliances	ENERGY STAR Dishwasher	Residential Marketplace	SF	N/A	MO	307.0	43%	132.1	0.045	12	\$18	100%	50%	DW-1	73%	48%	83%	59%	7.5	7.5	1.0	7.4
1020	Residential	Appliances	ENERGY STAR Dishwasher	Residential Marketplace	MF	N/A	MO	307.0	43%	132.1	0.045	12	\$18	100%	50%	DW-5	73%	48%	67%	59%	7.5	7.5	1.0	7.4
1021	Residential	Appliances	ENERGY STAR Dehumidifier	Residential Marketplace	SF	N/A	MO	1,095.0	12%	132.3	0.041	12	\$10	100%	50%	DEH-1	25%	38%	83%	50%	11.0	11.0	1.0	11.8
1022	Residential	Appliances	ENERGY STAR Dehumidifier	Residential Marketplace	MF	N/A	MO	1,095.0	12%	132.3	0.041	12	\$10	100%	50%	DEH-5	25%	18%	67%	34%	11.0	11.0	1.0	11.8
1023	Residential	Appliances	ENERGY STAR Most Efficient Dehumidifier	Residential Marketplace	SF	N/A	MO	1,095.0	17%	188.0	0.058	12	\$75	100%	50%	DEH-1	25%	38%	83%	50%	2.1	2.1	1.0	2.2
1024	Residential	Appliances	ENERGY STAR Most Efficient Dehumidifier	Residential Marketplace	MF	N/A	MO	1,095.0	17%	188.0	0.058	12	\$75	100%	50%	DEH-5	25%	18%	67%	34%	2.1	2.1	1.0	2.2
1025	Residential	Appliances	ENERGY STAR Freezer	Residential Marketplace	SF	N/A	MO	311.4	10%	31.2	0.005	11	\$5	100%	50%	FREEZER-1	92%	41%	83%	52%	3.5	3.5	1.0	5.2
1026	Residential	Appliances	ENERGY STAR Freezer	Residential Marketplace	MF	N/A	MO	311.4	10%	31.2	0.005	11	\$5	100%	50%	FREEZER-5	92%	41%	67%	52%	3.5	3.5	1.0	5.2
1027	Residential	Appliances	Freezer Recycling	Appliance Recycling	SF	NLI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-1	5%	20%	83%	36%	3.1	3.1	1.0	5.4
1028	Residential	Appliances	Freezer Recycling	Appliance Recycling	SF	LI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-2	5%	20%	75%	36%	3.1	3.1	1.0	5.4
1029	Residential	Appliances	Freezer Recycling	Appliance Recycling	MF	NLI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-5	5%	20%	67%	36%	3.1	3.1	1.0	5.4
1030	Residential	Appliances	Freezer Recycling	Appliance Recycling	MF	LI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-6	5%	20%	75%	36%	3.1	3.1	1.0	5.4
1031	Residential	Appliances	ENERGY STAR Clothes Dryer	Residential Marketplace	SF	N/A	MO	768.9	21%	160.0	0.022	14	\$152	100%	50%	DRYER-1	92%	61%	83%	69%	0.7	0.7	1.0	1.1
1032	Residential	Appliances	ENERGY STAR Clothes Dryer	Residential Marketplace	MF	N/A	MO	768.9	21%	160.0	0.022	14	\$152	100%	50%	DRYER-5	92%	61%	73%	69%	0.7	0.7	1.0	1.1

Residential Measure Summary

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1033	Residential	Appliances	Heat Pump Dryer	Residential Marketplace	SF	N/A	MO	768.9	49%	378.4	0.135	14	\$405	100%	50%	DRYER-1	92%	61%	83%	69%	0.9	0.9	1.0	0.9
1034	Residential	Appliances	Heat Pump Dryer	Residential Marketplace	MF	N/A	MO	768.9	49%	378.4	0.135	14	\$405	100%	50%	DRYER-5	92%	61%	73%	69%	0.9	0.9	1.0	0.9
2001	Residential	Behavior	Home Energy Management System	Emerging Technology	SF	N/A	MO	9,848.0	3%	316.1	0.054	5	\$90	100%	50%	HEMS-1	100%	0%	65%	23%	1.1	1.1	1.0	1.5
2002	Residential	Behavior	Home Energy Management System	Emerging Technology	MF	N/A	MO	9,848.0	3%	316.1	0.054	5	\$90	100%	50%	HEMS-5	100%	0%	65%	23%	1.1	1.1	1.0	1.5
3001	Residential	HVAC Equipment	ASHP Tune Up	Home Energy Improvement	SF	NLI	Retrofit	9,392.4	5%	469.6	0.003	2	\$175	100%	50%	HP TUNE-1	3%	49%	86%	60%	0.3	0.3	1.0	0.5
3002	Residential	HVAC Equipment	ASHP Tune Up	Low Income	SF	LI	Retrofit	9,392.4	5%	469.6	0.003	2	\$175	100%	100%	HP TUNE-2	3%	49%	82%	60%	0.3	0.3	1.0	0.5
3003	Residential	HVAC Equipment	ASHP Tune Up	Home Energy Improvement	MF	NLI	Retrofit	3,118.5	5%	155.9	0.002	2	\$175	100%	50%	HP TUNE-5	3%	49%	68%	60%	0.1	0.1	1.0	0.2
3004	Residential	HVAC Equipment	ASHP Tune Up	Low Income	MF	LI	Retrofit	3,118.5	5%	155.9	0.002	2	\$175	100%	100%	HP TUNE-6	3%	49%	82%	60%	0.1	0.1	1.0	0.2
3005	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	7%	683.6	0.132	18	\$1,233	100%	50%	HP-1	3%	56%	86%	65%	0.5	0.5	1.0	0.7
3006	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	SF	LI	MO	9,392.4	7%	683.6	0.132	18	\$1,233	100%	50%	HP-2	3%	56%	82%	65%	0.5	0.5	1.0	0.7
3007	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	MF	NLI	MO	3,118.5	7%	226.6	0.088	18	\$822	100%	50%	HP-5	3%	56%	69%	65%	0.3	0.3	1.0	0.3
3008	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	MF	LI	MO	3,118.5	7%	226.6	0.088	18	\$822	100%	50%	HP-6	3%	56%	82%	65%	0.3	0.3	1.0	0.3
3009	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	16%	1,524.3	0.352	18	\$2,055	100%	50%	HP-1	3%	56%	86%	65%	0.7	0.7	1.0	0.9
3010	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	SF	LI	MO	9,392.4	16%	1,524.3	0.352	18	\$2,055	100%	50%	HP-2	3%	56%	82%	65%	0.7	0.7	1.0	0.9
3011	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	MF	NLI	MO	3,118.5	16%	506.3	0.235	18	\$1,370	100%	50%	HP-5	3%	56%	69%	65%	0.4	0.4	1.0	0.4
3012	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	MF	LI	MO	3,118.5	16%	506.3	0.235	18	\$1,370	100%	50%	HP-6	3%	56%	82%	65%	0.4	0.4	1.0	0.4
3013	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	21%	1,943.0	0.603	18	\$2,877	100%	50%	HP-1	3%	56%	86%	65%	0.7	0.7	1.0	0.8
3014	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	SF	LI	MO	9,392.4	21%	1,943.0	0.603	18	\$2,877	100%	50%	HP-2	3%	56%	82%	65%	0.7	0.7	1.0	0.8
3015	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	MF	NLI	MO	3,118.5	21%	648.2	0.402	18	\$1,918	100%	50%	HP-5	3%	56%	69%	65%	0.5	0.5	1.0	0.4
3016	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	MF	LI	MO	3,118.5	21%	648.2	0.402	18	\$1,918	100%	50%	HP-6	3%	56%	82%	65%	0.5	0.5	1.0	0.4
3017	Residential	HVAC Equipment	Ground Source Heat Pump 20 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	13%	1,225.0	0.352	20	\$7,728	100%	50%	HP-1	3%	56%	86%	65%	0.2	0.2	1.0	0.2
3018	Residential	HVAC Equipment	Ground Source Heat Pump 23.5 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	14%	1,309.1	0.509	20	\$7,728	100%	50%	HP-1	3%	56%	86%	65%	0.2	0.2	1.0	0.2
3019	Residential	HVAC Equipment	Ground Source Heat Pump 29 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	15%	1,400.3	0.680	20	\$7,728	100%	50%	HP-1	3%	56%	86%	65%	0.2	0.2	1.0	0.2
3020	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	8%	725.2	0.248	15	\$267	100%	50%	HP-1	3%	56%	86%	65%	2.6	2.6	1.0	2.9
3021	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	9,392.4	8%	725.2	0.248	15	\$267	100%	50%	HP-2	3%	56%	82%	65%	2.6	2.6	1.0	2.9
3022	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	3,118.5	8%	242.3	0.166	15	\$267	100%	50%	HP-5	3%	56%	69%	65%	1.1	1.1	1.0	1.0
3023	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	3,118.5	8%	242.3	0.166	15	\$267	100%	50%	HP-6	3%	56%	82%	65%	1.1	1.1	1.0	1.0
3024	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	8%	795.1	0.445	15	\$267	100%	50%	HP-1	3%	56%	86%	65%	3.4	3.4	1.0	3.1
3025	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	9,392.4	8%	795.1	0.445	15	\$267	100%	50%	HP-2	3%	56%	82%	65%	3.4	3.4	1.0	3.1
3026	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	3,118.5	9%	268.8	0.296	15	\$267	100%	50%	HP-5	3%	56%	69%	65%	1.7	1.7	1.0	1.1
3027	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	3,118.5	9%	268.8	0.296	15	\$267	100%	50%	HP-6	3%	56%	82%	65%	1.7	1.7	1.0	1.1
3028	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	13%	1,251.9	0.603	15	\$533	100%	50%	HP-1	3%	56%	86%	65%	2.5	2.5	1.0	2.5

Residential Measure Summary

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
3029	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	9,392.4	13%	1,251.9	0.603	15	\$533	100%	50%	HP-2	3%	56%	82%	65%	2.5	2.5	1.0	2.5
3030	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	3,118.5	14%	421.5	0.402	15	\$533	100%	50%	HP-5	3%	56%	69%	65%	1.2	1.2	1.0	0.8
3031	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	3,118.5	14%	421.5	0.402	15	\$533	100%	50%	HP-6	3%	56%	82%	65%	1.2	1.2	1.0	0.8
3032	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	9,392.4	14%	1,298.7	0.735	15	\$820	100%	50%	HP-1	3%	56%	86%	65%	1.8	1.8	1.0	1.7
3033	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	9,392.4	14%	1,298.7	0.735	15	\$820	100%	50%	HP-2	3%	56%	82%	65%	1.8	1.8	1.0	1.7
3034	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	3,118.5	14%	439.2	0.490	15	\$820	100%	50%	HP-5	3%	56%	69%	65%	0.9	0.9	1.0	0.6
3035	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	3,118.5	14%	439.2	0.490	15	\$820	100%	50%	HP-6	3%	56%	82%	65%	0.9	0.9	1.0	0.6
3036	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	SF	NLI	MO	15,162.1	61%	9,301.0	0.132	18	\$1,233	100%	50%	HP-7	26%	56%	86%	65%	5.7	5.7	1.0	9.1
3037	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	SF	LI	MO	15,162.1	61%	9,301.0	0.132	18	\$1,233	100%	50%	HP-8	26%	56%	82%	65%	5.7	5.7	1.0	9.1
3038	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	MF	NLI	MO	4,797.2	62%	2,966.8	0.088	18	\$822	100%	50%	HP-11	3%	56%	69%	65%	2.8	2.8	1.0	4.3
3039	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	MF	LI	MO	4,797.2	62%	2,966.8	0.088	18	\$822	100%	50%	HP-12	3%	56%	82%	65%	2.8	2.8	1.0	4.3
3040	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	SF	NLI	MO	15,162.1	65%	9,869.9	0.352	18	\$2,055	100%	50%	HP-7	26%	56%	86%	65%	3.7	3.7	1.0	5.8
3041	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	SF	LI	MO	15,162.1	65%	9,869.9	0.352	18	\$2,055	100%	50%	HP-8	26%	56%	82%	65%	3.7	3.7	1.0	5.8
3042	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	MF	NLI	MO	4,797.2	66%	3,143.9	0.235	18	\$1,370	100%	50%	HP-11	3%	56%	69%	65%	1.9	1.9	1.0	2.8
3043	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	MF	LI	MO	4,797.2	66%	3,143.9	0.235	18	\$1,370	100%	50%	HP-12	3%	56%	82%	65%	1.9	1.9	1.0	2.8
3044	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	SF	NLI	MO	15,162.1	67%	10,168.8	0.603	18	\$2,877	100%	50%	HP-7	26%	56%	86%	65%	2.8	2.8	1.0	4.3
3045	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	SF	LI	MO	15,162.1	67%	10,168.8	0.603	18	\$2,877	100%	50%	HP-8	26%	56%	82%	65%	2.8	2.8	1.0	4.3
3046	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	MF	NLI	MO	4,797.2	67%	3,234.1	0.402	18	\$1,918	100%	50%	HP-11	3%	56%	69%	65%	1.5	1.5	1.0	2.0
3047	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	MF	LI	MO	4,797.2	67%	3,234.1	0.402	18	\$1,918	100%	50%	HP-12	3%	56%	82%	65%	1.5	1.5	1.0	2.0
3048	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	15,162.1	62%	9,340.6	0.248	15	\$1,004	100%	50%	HP-7	26%	56%	86%	65%	6.3	6.3	1.0	9.8
3049	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	15,162.1	62%	9,340.6	0.248	15	\$1,004	100%	50%	HP-8	26%	56%	82%	65%	6.3	6.3	1.0	9.8
3050	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	4,797.2	62%	2,977.1	0.166	15	\$1,004	100%	50%	HP-11	3%	56%	69%	65%	2.1	2.1	1.0	3.1
3051	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	4,797.2	62%	2,977.1	0.166	15	\$1,004	100%	50%	HP-12	3%	56%	82%	65%	2.1	2.1	1.0	3.1
3052	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	15,162.1	62%	9,407.3	0.445	15	\$1,004	100%	50%	HP-7	26%	56%	86%	65%	6.5	6.5	1.0	9.9
3053	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	15,162.1	62%	9,407.3	0.445	15	\$1,004	100%	50%	HP-8	26%	56%	82%	65%	6.5	6.5	1.0	9.9
3054	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	4,797.2	62%	2,994.3	0.296	15	\$1,004	100%	50%	HP-11	3%	56%	69%	65%	2.2	2.2	1.0	3.2
3055	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	4,797.2	62%	2,994.3	0.296	15	\$1,004	100%	50%	HP-12	3%	56%	82%	65%	2.2	2.2	1.0	3.2
3056	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	15,162.1	64%	9,720.7	0.603	15	\$1,070	100%	50%	HP-7	26%	56%	86%	65%	6.4	6.4	1.0	9.6
3057	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	15,162.1	64%	9,720.7	0.603	15	\$1,070	100%	50%	HP-8	26%	56%	82%	65%	6.4	6.4	1.0	9.6
3058	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	4,797.2	64%	3,091.1	0.402	15	\$1,070	100%	50%	HP-11	3%	56%	69%	65%	2.2	2.2	1.0	3.1
3059	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	4,797.2	64%	3,091.1	0.402	15	\$1,070	100%	50%	HP-12	3%	56%	82%	65%	2.2	2.2	1.0	3.1
3060	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	15,162.1	64%	9,765.4	0.735	15	\$1,557	100%	50%	HP-7	26%	56%	86%	65%	4.5	4.5	1.0	6.6

Residential Measure Summary

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Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
3061	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	15,162.1	64%	9,765.4	0.735	15	\$1,557	100%	50%	HP-8	26%	56%	82%	65%	4.5	4.5	1.0	6.6
3062	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	4,797.2	65%	3,102.6	0.490	15	\$1,557	100%	50%	HP-11	3%	56%	69%	65%	1.6	1.6	1.0	2.1
3063	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	4,797.2	65%	3,102.6	0.490	15	\$1,557	100%	50%	HP-12	3%	56%	82%	65%	1.6	1.6	1.0	2.1
3064	Residential	HVAC Equipment	AC Tune Up	Home Energy Improvement	SF	NLI	Retrofit	718.4	5%	35.9	0.003	2	\$175	100%	50%	AC TUNE-1	62%	44%	86%	55%	0.0	0.0	1.0	0.0
3065	Residential	HVAC Equipment	AC Tune Up	Low Income	SF	LI	Retrofit	718.4	5%	35.9	0.003	2	\$175	100%	100%	AC TUNE-2	62%	44%	82%	60%	0.0	0.0	1.0	0.0
3066	Residential	HVAC Equipment	AC Tune Up	Home Energy Improvement	MF	NLI	Retrofit	185.7	5%	9.3	0.003	2	\$175	100%	50%	AC TUNE-5	62%	44%	68%	55%	0.0	0.0	1.0	0.0
3067	Residential	HVAC Equipment	AC Tune Up	Low Income	MF	LI	Retrofit	185.7	5%	9.3	0.003	2	\$175	100%	100%	AC TUNE-6	62%	44%	82%	60%	0.0	0.0	1.0	0.0
3068	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	SF	NLI	MO	718.4	13%	89.8	0.283	18	\$221	100%	50%	CAC-1	62%	50%	86%	60%	1.5	1.5	1.0	0.5
3069	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	SF	LI	MO	718.4	13%	89.8	0.283	18	\$221	100%	50%	CAC-2	62%	50%	82%	60%	1.5	1.5	1.0	0.5
3070	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	MF	NLI	MO	185.7	13%	23.2	0.189	18	\$221	100%	50%	CAC-5	62%	50%	68%	60%	0.9	0.9	1.0	0.1
3071	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	MF	LI	MO	185.7	13%	23.2	0.189	18	\$221	100%	50%	CAC-6	62%	50%	82%	60%	0.9	0.9	1.0	0.1
3072	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	SF	NLI	MO	718.4	22%	159.6	0.503	18	\$620	100%	50%	CAC-1	62%	50%	86%	60%	0.9	0.9	1.0	0.3
3073	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	SF	LI	MO	718.4	22%	159.6	0.503	18	\$620	100%	50%	CAC-2	62%	50%	82%	60%	0.9	0.9	1.0	0.3
3074	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	MF	NLI	MO	185.7	22%	41.3	0.335	18	\$620	100%	50%	CAC-5	62%	50%	68%	60%	0.6	0.6	1.0	0.1
3075	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	MF	LI	MO	185.7	22%	41.3	0.335	18	\$620	100%	50%	CAC-6	62%	50%	82%	60%	0.6	0.6	1.0	0.1
3076	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	SF	NLI	MO	718.4	33%	239.5	0.754	18	\$620	100%	50%	CAC-1	62%	50%	86%	60%	1.4	1.4	1.0	0.5
3077	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	SF	LI	MO	718.4	33%	239.5	0.754	18	\$620	100%	50%	CAC-2	62%	50%	82%	60%	1.4	1.4	1.0	0.5
3078	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	MF	NLI	MO	185.7	33%	61.9	0.503	18	\$620	100%	50%	CAC-5	62%	50%	68%	60%	0.8	0.8	1.0	0.1
3079	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	MF	LI	MO	185.7	33%	61.9	0.503	18	\$620	100%	50%	CAC-6	62%	50%	82%	60%	0.8	0.8	1.0	0.1
3080	Residential	HVAC Equipment	Ductless AC	Residential HVAC	SF	NLI	MO	718.4	18%	126.8	0.399	18	\$365	100%	50%	CAC-1	62%	50%	86%	60%	1.2	1.2	1.0	0.4
3081	Residential	HVAC Equipment	Ductless AC	Residential HVAC	SF	LI	MO	718.4	18%	126.8	0.399	18	\$365	100%	50%	CAC-2	62%	50%	82%	60%	1.2	1.2	1.0	0.4
3082	Residential	HVAC Equipment	Ductless AC	Residential HVAC	MF	NLI	MO	185.7	18%	32.8	0.266	18	\$365	100%	50%	CAC-5	62%	50%	68%	60%	0.8	0.8	1.0	0.1
3083	Residential	HVAC Equipment	Ductless AC	Residential HVAC	MF	LI	MO	185.7	18%	32.8	0.266	18	\$365	100%	50%	CAC-6	62%	50%	82%	60%	0.8	0.8	1.0	0.1
3084	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Residential Marketplace	SF	NLI	Retrofit	9,392.4	6%	540.0	0.000	10	\$174	100%	50%	THERMOSTAT-1	3%	17%	86%	40%	1.5	1.5	1.0	2.4
3085	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Low Income	SF	LI	Retrofit	9,392.4	6%	540.0	0.000	10	\$174	100%	100%	THERMOSTAT-2	3%	17%	82%	60%	1.5	1.5	1.0	2.4
3086	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Residential Marketplace	MF	NLI	Retrofit	3,118.5	6%	182.1	0.000	10	\$174	100%	50%	THERMOSTAT-5	3%	17%	68%	33%	0.5	0.5	1.0	0.8
3087	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Low Income	MF	LI	Retrofit	3,118.5	6%	182.1	0.000	10	\$174	100%	100%	THERMOSTAT-6	3%	17%	82%	60%	0.5	0.5	1.0	0.8
3088	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Residential Marketplace	SF	NLI	Retrofit	15,162.1	5%	831.5	0.000	10	\$174	100%	50%	THERMOSTAT-7	26%	17%	86%	40%	2.3	2.3	1.0	3.7
3089	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Low Income	SF	LI	Retrofit	15,162.1	5%	831.5	0.000	10	\$174	100%	100%	THERMOSTAT-8	26%	17%	82%	60%	2.3	2.3	1.0	3.7
3090	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Residential Marketplace	MF	NLI	Retrofit	4,797.2	5%	259.7	0.000	10	\$174	100%	50%	THERMOSTAT-11	26%	17%	68%	33%	0.7	0.7	1.0	1.1
3091	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Low Income	MF	LI	Retrofit	4,797.2	5%	259.7	0.000	10	\$174	100%	100%	THERMOSTAT-12	26%	17%	82%	60%	0.7	0.7	1.0	1.1
3092	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Residential Marketplace	SF	NLI	Retrofit	1,214.3	10%	120.1	0.000	10	\$174	100%	50%	THERMOSTAT-13	22%	17%	86%	40%	2.2	2.2	1.0	2.6

Residential Measure Summary

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Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
3093	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Low Income	SF	LI	Retrofit	1,214.3	10%	120.1	0.000	10	\$174	100%	100%	THERMOSTAT-14	22%	17%	82%	60%	2.2	2.2	1.0	2.6
3094	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Residential Marketplace	MF	NLI	Retrofit	349.5	9%	32.9	0.000	10	\$174	100%	50%	THERMOSTAT-17	22%	17%	68%	33%	0.7	0.7	1.0	0.9
3095	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Low Income	MF	LI	Retrofit	349.5	9%	32.9	0.000	10	\$174	100%	100%	THERMOSTAT-18	22%	17%	82%	60%	0.7	0.7	1.0	0.9
3096	Residential	HVAC Equipment	ECM HVAC Motor	Residential HVAC	SF	N/A	Retrofit	9,392.4	3%	248.0	0.165	9	\$475	100%	50%	ECM-1	51%	50%	86%	60%	0.5	0.5	1.0	0.4
3097	Residential	HVAC Equipment	ECM HVAC Motor	Residential HVAC	MF	N/A	Retrofit	3,118.5	8%	248.0	0.165	9	\$475	100%	50%	ECM-5	51%	50%	68%	60%	0.5	0.5	1.0	0.4
3098	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Residential Marketplace	SF	NLI	MO	343.5	9%	31.5	0.076	9	\$43	100%	50%	RAC-1	30%	49%	86%	59%	1.3	1.3	1.0	0.5
3099	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Low Income	SF	LI	MO	343.5	9%	31.5	0.076	9	\$43	100%	100%	RAC-2	30%	49%	82%	60%	1.3	1.3	1.0	0.5
3100	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Residential Marketplace	MF	NLI	MO	343.5	9%	31.5	0.076	9	\$43	100%	50%	RAC-5	30%	49%	68%	59%	1.3	1.3	1.0	0.5
3101	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Low Income	MF	LI	MO	343.5	9%	31.5	0.076	9	\$43	100%	100%	RAC-6	30%	49%	82%	60%	1.3	1.3	1.0	0.5
3102	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	SF	NLI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-1	6%	20%	86%	40%	5.0	5.0	1.0	1.8
3103	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	SF	LI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-2	6%	20%	82%	36%	5.0	5.0	1.0	1.8
3104	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	MF	NLI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-5	6%	20%	68%	36%	5.0	5.0	1.0	1.8
3105	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	MF	LI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-6	6%	20%	82%	36%	5.0	5.0	1.0	1.8
3106	Residential	HVAC Equipment	Smart Vents/Sensors - Gas/CAC baseline	Emerging Technology	SF	N/A	Retrofit	1,214.3	5%	60.7	0.113	15	\$1,625	100%	50%	SVS-1	22%	3%	65%	23%	0.2	0.2	1.0	0.2
3107	Residential	HVAC Equipment	Smart Vents/Sensors - Gas/CAC baseline	Emerging Technology	MF	N/A	Retrofit	349.5	5%	17.5	0.075	15	\$1,040	100%	50%	SVS-5	22%	3%	65%	23%	0.2	0.2	1.0	0.1
3108	Residential	HVAC Equipment	Smart Vents/Sensors - Heat pump baseline	Emerging Technology	SF	N/A	Retrofit	9,392.4	5%	469.6	0.113	15	\$1,625	100%	50%	SVS-7	3%	3%	65%	23%	0.3	0.3	1.0	0.3
3109	Residential	HVAC Equipment	Smart Vents/Sensors - Heat pump baseline	Emerging Technology	MF	N/A	Retrofit	3,118.5	5%	155.9	0.075	15	\$1,040	100%	50%	SVS-11	3%	3%	65%	23%	0.2	0.2	1.0	0.2
3110	Residential	HVAC Equipment	Smart Vents/Sensors - Furnace baseline	Emerging Technology	SF	N/A	Retrofit	15,162.1	5%	758.1	0.113	15	\$1,625	100%	50%	SVS-13	26%	3%	65%	23%	0.4	0.4	1.0	0.5
3111	Residential	HVAC Equipment	Smart Vents/Sensors - Furnace baseline	Emerging Technology	MF	N/A	Retrofit	4,797.2	5%	239.9	0.075	15	\$1,040	100%	50%	SVS-18	26%	3%	65%	23%	0.2	0.2	1.0	0.2
3112	Residential	HVAC Equipment	Energy Recovery Ventilator	Emerging Technology	SF	N/A	Retrofit	9,392.4	40%	3,756.9	0.289	15	\$3,000	100%	50%	ERV-1	51%	0%	65%	23%	0.9	0.9	1.0	1.3
3113	Residential	HVAC Equipment	Energy Recovery Ventilator	Emerging Technology	MF	N/A	Retrofit	3,118.5	40%	1,247.4	0.096	15	\$3,000	100%	50%	ERV-5	51%	0%	65%	23%	0.3	0.3	1.0	0.4
3114	Residential	HVAC Equipment	Whole House Attic Fan	Residential HVAC	SF	N/A	Retrofit	718.4	18%	129.3	0.407	15	\$711	100%	50%	WHAF-1	62%	20%	86%	40%	0.6	0.6	1.0	0.2
3115	Residential	HVAC Equipment	Whole House Attic Fan	Residential HVAC	MF	N/A	Retrofit	185.7	18%	33.4	0.407	15	\$711	100%	50%	WHAF-5	62%	20%	68%	36%	0.5	0.5	1.0	0.0
3116	Residential	HVAC Equipment	Attic Fan	Residential HVAC	SF	N/A	Retrofit	718.4	8%	57.5	0.181	15	\$125	100%	50%	WHAF-1	62%	20%	86%	40%	1.5	1.5	1.0	0.5
3117	Residential	HVAC Equipment	Attic Fan	Residential HVAC	MF	N/A	Retrofit	185.7	8%	14.9	0.181	15	\$125	100%	50%	WHAF-6	62%	20%	68%	36%	1.3	1.3	1.0	0.1
4001	Residential	Lighting	9W LED	Residential Marketplace	SF	NLI	MO	23.5	48%	11.3	0.012	16	\$5	100%	50%	STAN-1	3003%	59%	83%	67%	5.6	5.6	1.0	2.6
4002	Residential	Lighting	9W LED	Low Income	SF	LI	MO	23.5	48%	11.3	0.012	16	\$5	100%	100%	STAN-2	3003%	59%	75%	67%	5.6	5.6	1.0	2.6
4003	Residential	Lighting	9W LED	Residential Marketplace	MF	NLI	MO	23.5	48%	11.3	0.012	16	\$5	100%	50%	STAN-5	1915%	59%	71%	67%	5.6	5.6	1.0	2.6
4004	Residential	Lighting	9W LED	Low Income	MF	LI	MO	23.5	48%	11.3	0.012	16	\$5	100%	100%	STAN-6	1915%	59%	75%	67%	5.6	5.6	1.0	2.6
4005	Residential	Lighting	13W LED	Residential Marketplace	SF	NLI	MO	16.9	50%	8.4	0.009	16	\$9	100%	50%	STAN-1	3003%	59%	83%	67%	2.4	2.4	1.0	1.1
4006	Residential	Lighting	13W LED	Low Income	SF	LI	MO	16.9	50%	8.4	0.009	16	\$9	100%	100%	STAN-2	3003%	59%	75%	67%	2.4	2.4	1.0	1.1
4007	Residential	Lighting	13W LED	Residential Marketplace	MF	NLI	MO	16.9	50%	8.4	0.009	16	\$9	100%	50%	STAN-5	1915%	59%	71%	67%	2.4	2.4	1.0	1.1

Residential Measure Summary

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Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
4008	Residential	Lighting	13W LED	Low Income	MF	LI	MO	16.9	50%	8.4	0.009	16	\$9	100%	100%	STAN-6	1915%	59%	75%	67%	2.4	2.4	1.0	1.1
4009	Residential	Lighting	LED 5W Globe	Residential Marketplace	SF	NLI	MO	15.0	56%	8.4	0.009	16	\$5	100%	50%	REFLECTOR-1	738%	59%	83%	67%	4.2	4.2	1.0	1.9
4010	Residential	Lighting	LED 5W Globe	Low Income	SF	LI	MO	15.0	56%	8.4	0.009	16	\$5	100%	100%	REFLECTOR-2	738%	59%	75%	67%	4.2	4.2	1.0	1.9
4011	Residential	Lighting	LED 5W Globe	Residential Marketplace	MF	NLI	MO	15.0	56%	8.4	0.009	16	\$5	100%	50%	REFLECTOR-5	471%	59%	71%	67%	4.2	4.2	1.0	1.9
4012	Residential	Lighting	LED 5W Globe	Low Income	MF	LI	MO	15.0	56%	8.4	0.009	16	\$5	100%	100%	REFLECTOR-6	471%	59%	75%	67%	4.2	4.2	1.0	1.9
4013	Residential	Lighting	LED R30 Dimmable	Residential Marketplace	SF	NLI	MO	11.3	58%	6.6	0.007	20	\$4	100%	50%	SPECIALTY-1	446%	59%	83%	67%	4.8	4.8	1.0	2.3
4014	Residential	Lighting	LED R30 Dimmable	Low Income	SF	LI	MO	11.3	58%	6.6	0.007	20	\$4	100%	100%	SPECIALTY-2	446%	59%	75%	67%	4.8	4.8	1.0	2.3
4015	Residential	Lighting	LED R30 Dimmable	Residential Marketplace	MF	NLI	MO	11.3	58%	6.6	0.007	20	\$4	100%	50%	SPECIALTY-5	284%	59%	71%	67%	4.8	4.8	1.0	2.3
4016	Residential	Lighting	LED R30 Dimmable	Low Income	MF	LI	MO	11.3	58%	6.6	0.007	20	\$4	100%	100%	SPECIALTY-6	284%	59%	75%	67%	4.8	4.8	1.0	2.3
4017	Residential	Lighting	LED Nightlights	Residential Marketplace	SF	NLI	MO	14.6	93%	13.6	0.000	12	\$3	100%	50%	NIGHT-1	40%	59%	83%	67%	1.6	1.6	1.0	4.0
4018	Residential	Lighting	LED Nightlights	Low Income	SF	LI	MO	14.6	93%	13.6	0.000	12	\$3	100%	100%	NIGHT-2	40%	59%	75%	67%	1.6	1.6	1.0	4.0
4019	Residential	Lighting	LED Nightlights	Residential Marketplace	MF	NLI	MO	14.6	93%	13.6	0.000	12	\$3	100%	50%	NIGHT-5	40%	59%	71%	67%	1.6	1.6	1.0	4.0
4020	Residential	Lighting	LED Nightlights	Low Income	MF	LI	MO	14.6	93%	13.6	0.000	12	\$3	100%	100%	NIGHT-6	40%	59%	75%	67%	1.6	1.6	1.0	4.0
4021	Residential	Lighting	Exterior LED Lamp	Residential Marketplace	SF	NLI	MO	205.5	72%	141.3	0.077	8	\$40	100%	50%	ELL-1	503%	59%	83%	67%	3.1	3.1	1.0	2.3
4022	Residential	Lighting	Exterior LED Lamp	Low Income	SF	LI	MO	205.5	72%	141.3	0.077	8	\$40	100%	100%	ELL-2	503%	59%	75%	67%	3.1	3.1	1.0	2.3
4023	Residential	Lighting	Exterior LED Lamp	Residential Marketplace	MF	NLI	MO	205.5	72%	141.3	0.077	8	\$40	100%	50%	ELL-5	289%	59%	71%	67%	3.1	3.1	1.0	2.3
4024	Residential	Lighting	Exterior LED Lamp	Low Income	MF	LI	MO	205.5	72%	141.3	0.077	8	\$40	100%	100%	ELL-6	289%	59%	75%	67%	3.1	3.1	1.0	2.3
4025	Residential	Lighting	Linear LED	Residential Marketplace	SF	NLI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-1	509%	59%	83%	67%	2.8	2.8	1.0	1.8
4026	Residential	Lighting	Linear LED	Residential Marketplace	SF	LI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-2	509%	59%	75%	67%	2.8	2.8	1.0	1.8
4027	Residential	Lighting	Linear LED	Residential Marketplace	MF	NLI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-5	325%	59%	71%	67%	2.8	2.8	1.0	1.8
4028	Residential	Lighting	Linear LED	Residential Marketplace	MF	LI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-6	325%	59%	75%	67%	2.8	2.8	1.0	1.8
4029	Residential	Lighting	Smart LED	Emerging Technology	SF	NLI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-1	3003%	59%	71%	67%	0.5	0.5	1.0	1.3
4030	Residential	Lighting	Smart LED	Emerging Technology	SF	LI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-2	3003%	59%	71%	67%	0.5	0.5	1.0	1.3
4031	Residential	Lighting	Smart LED	Emerging Technology	MF	NLI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-5	1915%	59%	71%	67%	0.5	0.5	1.0	1.3
4032	Residential	Lighting	Smart LED	Emerging Technology	MF	LI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-6	1915%	59%	71%	67%	0.5	0.5	1.0	1.3
4033	Residential	Lighting	LED Fixture	Residential Marketplace	SF	NLI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-1	3003%	59%	83%	67%	3.0	3.0	1.0	1.4
4034	Residential	Lighting	LED Fixture	Residential Marketplace	SF	LI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-2	3003%	59%	75%	67%	3.0	3.0	1.0	1.4
4035	Residential	Lighting	LED Fixture	Residential Marketplace	MF	NLI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-5	1915%	59%	71%	67%	3.0	3.0	1.0	1.4
4036	Residential	Lighting	LED Fixture	Residential Marketplace	MF	LI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-6	1915%	59%	75%	67%	3.0	3.0	1.0	1.4
4037	Residential	Lighting	Occupancy Sensor	Residential Marketplace	SF	N/A	Retrofit	124.4	30%	37.1	0.046	10	\$40	100%	50%	OCC-1	1047%	31%	83%	45%	1.1	1.1	1.0	0.7
4038	Residential	Lighting	Occupancy Sensor	Residential Marketplace	MF	N/A	Retrofit	124.4	30%	37.1	0.046	10	\$40	100%	50%	OCC-5	1047%	31%	67%	45%	1.1	1.1	1.0	0.7
4039	Residential	Lighting	Smart Lighting Switch	Emerging Technology	SF	N/A	Retrofit	124.4	17%	21.2	0.047	10	\$43	100%	50%	OCC-1	1047%	31%	65%	45%	0.9	0.9	1.0	0.4

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Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
4040	Residential	Lighting	Smart Lighting Switch	Emerging Technology	MF	N/A	Retrofit	124.4	17%	21.2	0.047	10	\$43	100%	50%	OCC-5	1047%	31%	65%	45%	0.9	0.9	1.0	0.4
4041	Residential	Lighting	Exterior Lighting Controls	Residential Marketplace	SF	N/A	Retrofit	146.1	44%	64.5	0.026	10	\$30	100%	50%	ELC-1	252%	31%	83%	45%	1.2	1.2	1.0	1.7
4042	Residential	Lighting	Exterior Lighting Controls	Residential Marketplace	MF	N/A	Retrofit	146.1	44%	64.5	0.026	10	\$30	100%	50%	ELC-5	252%	31%	67%	45%	1.2	1.2	1.0	1.7
5001	Residential	Pool/Pump	Heat Pump Pool Heater	Emerging Technology	SF	N/A	MO	2,364.4	52%	1,233.7	0.000	8	\$1,250	100%	50%	HPPH-1	0%	12%	65%	30%	0.2	0.2	1.0	0.6
5002	Residential	Pool/Pump	Variable Speed Pool Pump	Residential Marketplace	SF	N/A	MO	1,167.0	26%	715.0	0.190	10	\$809	100%	50%	POOL-1	1%	25%	83%	40%	0.6	0.6	1.0	0.7
5003	Residential	Pool/Pump	Well Pump	Residential Marketplace	SF	N/A	MO	411.2	33%	135.7	0.015	20	\$110	100%	50%	WELL-1	4%	25%	83%	40%	0.8	0.8	1.0	1.6
6001	Residential	New Construction	ENERGY STAR New Home	Residential New Construction	SF	N/A	NC	9,848.0	25%	2,462.0	0.281	20	\$1,216	100%	50%	NC-1	100%	60%	85%	68%	1.5	1.5	1.0	2.6
6002	Residential	New Construction	ENERGY STAR New Home	Residential New Construction	MF	N/A	NC	9,848.0	25%	2,462.0	0.281	20	\$1,216	100%	50%	NC-3	100%	60%	72%	68%	1.5	1.5	1.0	2.6
7001	Residential	Plug Load	Smart Power Strips - Tier 1	Residential Marketplace	SF	NLI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	50%	SPS-1	100%	8%	83%	35%	1.2	1.2	1.0	1.9
7002	Residential	Plug Load	Smart Power Strips - Tier 1	Low Income	SF	LI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	100%	SPS-2	100%	8%	75%	55%	1.2	1.2	1.0	1.9
7003	Residential	Plug Load	Smart Power Strips - Tier 1	Residential Marketplace	MF	NLI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	50%	SPS-5	100%	8%	67%	29%	1.2	1.2	1.0	1.9
7004	Residential	Plug Load	Smart Power Strips - Tier 1	Low Income	MF	LI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	100%	SPS-6	100%	8%	75%	55%	1.2	1.2	1.0	1.9
7005	Residential	Plug Load	Smart Power Strips - Tier 2	Residential Marketplace	SF	NLI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	50%	SPS-1	100%	8%	83%	35%	0.7	0.7	1.0	1.1
7006	Residential	Plug Load	Smart Power Strips - Tier 2	Low Income	SF	LI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	100%	SPS-2	100%	8%	75%	55%	0.7	0.7	1.0	1.1
7007	Residential	Plug Load	Smart Power Strips - Tier 2	Residential Marketplace	MF	NLI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	50%	SPS-5	100%	8%	67%	29%	0.7	0.7	1.0	1.1
7008	Residential	Plug Load	Smart Power Strips - Tier 2	Low Income	MF	LI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	100%	SPS-6	100%	8%	75%	55%	0.7	0.7	1.0	1.1
8001	Residential	Shell	Duct Sealing - Average Sealing - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	9,392.4	3%	287.7	0.156	20	\$450	100%	50%	DUCT-1	3%	76%	85%	81%	0.9	0.9	1.0	0.8
8002	Residential	Shell	Duct Sealing - Average Sealing - Heat pump	Low Income	SF	LI	Retrofit	9,392.4	3%	287.7	0.156	20	\$450	100%	100%	DUCT-2	3%	76%	83%	81%	0.9	0.9	1.0	0.8
8003	Residential	Shell	Duct Sealing - Average Sealing - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	15,162.1	3%	464.5	0.252	20	\$450	100%	50%	DUCT-13	26%	76%	85%	81%	1.4	1.4	1.0	1.3
8004	Residential	Shell	Duct Sealing - Average Sealing - Electric furnace	Low Income	SF	LI	Retrofit	15,162.1	3%	464.5	0.252	20	\$450	100%	100%	DUCT-14	26%	76%	83%	81%	1.4	1.4	1.0	1.3
8005	Residential	Shell	Duct Sealing - Average Sealing - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,214.3	5%	58.0	0.031	20	\$450	100%	50%	DUCT-25	22%	76%	85%	81%	0.7	0.7	1.0	0.8
8006	Residential	Shell	Duct Sealing - Average Sealing - Gas Heating	Low Income	SF	LI	Retrofit	1,214.3	5%	58.0	0.031	20	\$450	100%	100%	DUCT-26	22%	76%	83%	81%	0.7	0.7	1.0	0.8
8007	Residential	Shell	Wall Insulation - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	9,392.4	9%	837.8	0.454	20	\$2,254	100%	50%	WALL-1	3%	80%	86%	84%	0.5	0.5	1.0	0.5
8008	Residential	Shell	Wall Insulation - Heat pump	Low Income	SF	LI	Retrofit	9,392.4	9%	837.8	0.454	20	\$2,254	100%	100%	WALL-2	3%	80%	86%	84%	0.5	0.5	1.0	0.5
8009	Residential	Shell	Wall Insulation - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	3,118.5	9%	278.2	0.151	20	\$969	100%	50%	WALL-5	26%	80%	86%	84%	0.4	0.4	1.0	0.4
8010	Residential	Shell	Wall Insulation - Heat pump	Low Income	MF	LI	Retrofit	3,118.5	9%	278.2	0.151	20	\$969	100%	100%	WALL-6	26%	80%	86%	84%	0.4	0.4	1.0	0.4
8011	Residential	Shell	Wall Insulation - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	15,162.1	9%	1,352.4	0.733	20	\$2,254	100%	50%	WALL-7	26%	80%	86%	84%	0.8	0.8	1.0	0.8
8012	Residential	Shell	Wall Insulation - Electric furnace	Low Income	SF	LI	Retrofit	15,162.1	9%	1,352.4	0.733	20	\$2,254	100%	100%	WALL-8	26%	80%	86%	84%	0.8	0.8	1.0	0.8
8013	Residential	Shell	Wall Insulation - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	4,797.2	9%	427.9	0.232	20	\$969	100%	50%	WALL-11	26%	80%	86%	84%	0.6	0.6	1.0	0.6
8014	Residential	Shell	Wall Insulation - Electric furnace	Low Income	MF	LI	Retrofit	4,797.2	9%	427.9	0.232	20	\$969	100%	100%	WALL-12	26%	80%	86%	84%	0.6	0.6	1.0	0.6
8015	Residential	Shell	Wall Insulation - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,214.3	4%	46.9	0.025	20	\$2,254	100%	50%	WALL-13	22%	80%	86%	84%	0.1	0.1	1.0	0.1
8016	Residential	Shell	Wall Insulation - Gas Heating	Low Income	SF	LI	Retrofit	1,214.3	4%	46.9	0.025	20	\$2,254	100%	100%	WALL-14	22%	80%	86%	84%	0.1	0.1	1.0	0.1

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8017	Residential	Shell	Wall Insulation - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	349.5	4%	13.5	0.007	20	\$969	100%	50%	WALL-17	22%	80%	86%	84%	0.1	0.1	1.0	0.1
8018	Residential	Shell	Wall Insulation - Gas Heating	Low Income	MF	LI	Retrofit	349.5	4%	13.5	0.007	20	\$969	100%	100%	WALL-18	22%	80%	86%	84%	0.1	0.1	1.0	0.1
8019	Residential	Shell	Air Sealing Average Sealing - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	9,392.4	11%	1,054.3	0.571	20	\$200	100%	50%	AIR-1	3%	76%	85%	81%	7.1	7.1	1.0	6.8
8020	Residential	Shell	Air Sealing Average Sealing - Heat pump	Low Income	SF	LI	Retrofit	9,392.4	11%	1,054.3	0.571	20	\$200	100%	100%	AIR-2	3%	76%	83%	81%	7.1	7.1	1.0	6.8
8021	Residential	Shell	Air Sealing Average Sealing - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	3,118.5	11%	350.1	0.190	20	\$200	100%	50%	AIR-5	3%	76%	83%	81%	2.4	2.4	1.0	2.3
8022	Residential	Shell	Air Sealing Average Sealing - Heat pump	Low Income	MF	LI	Retrofit	3,118.5	11%	350.1	0.190	20	\$200	100%	100%	AIR-6	3%	76%	83%	81%	2.4	2.4	1.0	2.3
8023	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	15,162.1	14%	2,074.2	1.124	20	\$200	100%	50%	AIR-19	26%	76%	85%	81%	14.0	14.0	1.0	13.4
8024	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Low Income	SF	LI	Retrofit	15,162.1	14%	2,074.2	1.124	20	\$200	100%	100%	AIR-20	26%	76%	83%	81%	14.0	14.0	1.0	13.4
8025	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	4,797.2	14%	656.3	0.356	20	\$200	100%	50%	AIR-23	26%	76%	83%	81%	4.4	4.4	1.0	4.2
8026	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Low Income	MF	LI	Retrofit	4,797.2	14%	656.3	0.356	20	\$200	100%	100%	AIR-24	26%	76%	83%	81%	4.4	4.4	1.0	4.2
8027	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,214.3	7%	85.5	0.046	20	\$200	100%	50%	AIR-37	22%	76%	85%	81%	2.4	2.4	1.0	2.7
8028	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Low Income	SF	LI	Retrofit	1,214.3	7%	85.5	0.046	20	\$200	100%	100%	AIR-38	22%	76%	83%	81%	2.4	2.4	1.0	2.7
8029	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	349.5	7%	24.6	0.013	20	\$200	100%	50%	AIR-41	22%	76%	83%	81%	0.9	0.9	1.0	0.9
8030	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Low Income	MF	LI	Retrofit	349.5	7%	24.6	0.013	20	\$200	100%	100%	AIR-42	22%	76%	83%	81%	0.9	0.9	1.0	0.9
8031	Residential	Shell	Attic Insulation - Average Insulation - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	9,392.4	3%	280.8	0.152	20	\$898	100%	50%	ATTIC-1	3%	73%	85%	78%	0.4	0.4	1.0	0.4
8032	Residential	Shell	Attic Insulation - Average Insulation - Heat pump	Low Income	SF	LI	Retrofit	9,392.4	3%	280.8	0.152	20	\$898	100%	100%	ATTIC-2	3%	73%	82%	78%	0.4	0.4	1.0	0.4
8033	Residential	Shell	Attic Insulation - Average Insulation - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	15,162.1	3%	453.3	0.246	20	\$898	100%	50%	ATTIC-7	26%	73%	85%	78%	0.7	0.7	1.0	0.7
8034	Residential	Shell	Attic Insulation - Average Insulation - Electric furnace	Low Income	SF	LI	Retrofit	15,162.1	3%	453.3	0.246	20	\$898	100%	100%	ATTIC-8	26%	73%	82%	78%	0.7	0.7	1.0	0.7
8035	Residential	Shell	Attic Insulation - Average Insulation - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,214.3	2%	26.0	0.014	20	\$898	100%	50%	ATTIC-13	22%	73%	85%	78%	0.2	0.2	1.0	0.2
8036	Residential	Shell	Attic Insulation - Average Insulation - Gas Heating	Low Income	SF	LI	Retrofit	1,214.3	2%	26.0	0.014	20	\$898	100%	100%	ATTIC-14	22%	73%	82%	78%	0.2	0.2	1.0	0.2
8037	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	9,392.4	6%	579.8	0.314	20	\$11,300	100%	50%	WINDOW-1	3%	70%	85%	76%	0.1	0.1	1.0	0.1
8038	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	SF	LI	Retrofit	9,392.4	6%	579.8	0.314	20	\$11,300	100%	50%	WINDOW-2	3%	70%	82%	76%	0.1	0.1	1.0	0.1
8039	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	3,118.5	6%	192.5	0.104	20	\$7,232	100%	50%	WINDOW-5	3%	70%	79%	76%	0.0	0.0	1.0	0.0
8040	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	MF	LI	Retrofit	3,118.5	6%	192.5	0.104	20	\$7,232	100%	50%	WINDOW-6	3%	70%	82%	76%	0.0	0.0	1.0	0.0
8041	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	15,162.1	5%	778.0	0.422	20	\$11,300	100%	50%	WINDOW-7	26%	70%	85%	76%	0.1	0.1	1.0	0.1
8042	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	SF	LI	Retrofit	15,162.1	5%	778.0	0.422	20	\$11,300	100%	50%	WINDOW-8	26%	70%	82%	76%	0.1	0.1	1.0	0.1
8043	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	4,797.2	5%	246.1	0.133	20	\$7,232	100%	50%	WINDOW-11	26%	70%	79%	76%	0.0	0.0	1.0	0.0
8044	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	MF	LI	Retrofit	4,797.2	5%	246.1	0.133	20	\$7,232	100%	50%	WINDOW-12	26%	70%	82%	76%	0.0	0.0	1.0	0.0
8045	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,214.3	6%	68.4	0.037	20	\$11,300	100%	50%	WINDOW-13	22%	70%	85%	76%	0.0	0.0	1.0	0.0
8046	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	SF	LI	Retrofit	1,214.3	6%	68.4	0.037	20	\$11,300	100%	50%	WINDOW-14	22%	70%	82%	76%	0.0	0.0	1.0	0.0
8047	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	349.5	6%	19.7	0.011	20	\$7,232	100%	50%	WINDOW-17	22%	70%	79%	76%	0.0	0.0	1.0	0.0
8048	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	MF	LI	Retrofit	349.5	6%	19.7	0.011	20	\$7,232	100%	50%	WINDOW-18	22%	70%	82%	76%	0.0	0.0	1.0	0.0

Residential Measure Summary

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
8049	Residential	Shell	Basement Sidewall Insulation - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	9,392.4	6%	516.9	0.280	20	\$696	100%	50%	BASEMENT-1	3%	80%	86%	84%	1.0	1.0	1.0	1.0
8050	Residential	Shell	Basement Sidewall Insulation - Heat pump	Low Income	SF	LI	Retrofit	9,392.4	6%	516.9	0.280	20	\$696	100%	100%	BASEMENT-2	3%	80%	86%	84%	1.0	1.0	1.0	1.0
8051	Residential	Shell	Basement Sidewall Insulation - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	15,162.1	6%	834.5	0.452	20	\$696	100%	50%	BASEMENT-3	26%	80%	86%	84%	1.6	1.6	1.0	1.6
8052	Residential	Shell	Basement Sidewall Insulation - Electric furnace	Low Income	SF	LI	Retrofit	15,162.1	6%	834.5	0.452	20	\$696	100%	100%	BASEMENT-4	26%	80%	86%	84%	1.6	1.6	1.0	1.6
8053	Residential	Shell	Basement Sidewall Insulation - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,214.3	6%	66.8	0.036	20	\$696	100%	50%	BASEMENT-5	22%	80%	86%	84%	0.5	0.5	1.0	0.6
8054	Residential	Shell	Basement Sidewall Insulation - Gas Heating	Low Income	SF	LI	Retrofit	1,214.3	6%	66.8	0.036	20	\$696	100%	100%	BASEMENT-6	22%	80%	86%	84%	0.5	0.5	1.0	0.6
8055	Residential	Shell	Floor Insulation Above Crawlspace - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	9,392.4	1%	54.9	0.030	25	\$772	100%	50%	CRAWL-1	3%	80%	86%	84%	0.1	0.1	1.0	0.1
8056	Residential	Shell	Floor Insulation Above Crawlspace - Heat pump	Low Income	SF	LI	Retrofit	9,392.4	1%	54.9	0.030	25	\$476	100%	100%	CRAWL-2	3%	80%	86%	84%	0.2	0.2	1.0	0.2
8057	Residential	Shell	Floor Insulation Above Crawlspace - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	15,162.1	1%	88.6	0.048	25	\$772	100%	50%	CRAWL-5	26%	80%	86%	84%	0.2	0.2	1.0	0.2
8058	Residential	Shell	Floor Insulation Above Crawlspace - Electric furnace	Low Income	SF	LI	Retrofit	15,162.1	1%	88.6	0.048	25	\$476	100%	100%	CRAWL-6	26%	80%	86%	84%	0.3	0.3	1.0	0.3
8059	Residential	Shell	Floor Insulation Above Crawlspace - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,214.3	1%	7.1	0.004	25	\$772	100%	50%	CRAWL-9	22%	80%	86%	84%	0.1	0.1	1.0	0.1
8060	Residential	Shell	Floor Insulation Above Crawlspace - Gas Heating	Low Income	SF	LI	Retrofit	1,214.3	1%	7.1	0.004	25	\$476	100%	100%	CRAWL-10	22%	80%	86%	84%	0.1	0.1	1.0	0.1
8061	Residential	Shell	ENERGY STAR Door - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	9,392.4	5%	461.9	0.250	20	\$1,275	100%	50%	DOOR-1	3%	75%	85%	80%	0.5	0.5	1.0	0.5
8062	Residential	Shell	ENERGY STAR Door - Heat pump	Low Income	SF	LI	Retrofit	9,392.4	5%	461.9	0.250	20	\$1,275	100%	100%	DOOR-2	3%	75%	82%	80%	0.5	0.5	1.0	0.5
8063	Residential	Shell	ENERGY STAR Door - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	3,118.5	5%	153.4	0.083	20	\$1,275	100%	50%	DOOR-5	3%	75%	82%	80%	0.2	0.2	1.0	0.2
8064	Residential	Shell	ENERGY STAR Door - Heat pump	Low Income	MF	LI	Retrofit	3,118.5	5%	153.4	0.083	20	\$1,275	100%	100%	DOOR-6	3%	75%	82%	80%	0.2	0.2	1.0	0.2
8065	Residential	Shell	ENERGY STAR Door - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	15,162.1	2%	250.6	0.136	20	\$1,275	100%	50%	DOOR-7	26%	75%	85%	80%	0.3	0.3	1.0	0.3
8066	Residential	Shell	ENERGY STAR Door - Electric furnace	Low Income	SF	LI	Retrofit	15,162.1	2%	250.6	0.136	20	\$1,275	100%	100%	DOOR-8	26%	75%	82%	80%	0.3	0.3	1.0	0.3
8067	Residential	Shell	ENERGY STAR Door - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	4,797.2	2%	79.3	0.043	20	\$1,275	100%	50%	DOOR-11	26%	75%	82%	80%	0.1	0.1	1.0	0.1
8068	Residential	Shell	ENERGY STAR Door - Electric furnace	Low Income	MF	LI	Retrofit	4,797.2	2%	79.3	0.043	20	\$1,275	100%	100%	DOOR-12	26%	75%	82%	80%	0.1	0.1	1.0	0.1
8069	Residential	Shell	ENERGY STAR Door - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,214.3	1%	10.6	0.006	20	\$1,275	100%	50%	DOOR-13	22%	75%	85%	80%	0.0	0.0	1.0	0.1
8070	Residential	Shell	ENERGY STAR Door - Gas Heating	Low Income	SF	LI	Retrofit	1,214.3	1%	10.6	0.006	20	\$1,275	100%	100%	DOOR-14	22%	75%	82%	80%	0.0	0.0	1.0	0.1
8071	Residential	Shell	ENERGY STAR Door - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	349.5	1%	3.1	0.002	20	\$1,275	100%	50%	DOOR-17	22%	75%	82%	80%	0.0	0.0	1.0	0.0
8072	Residential	Shell	ENERGY STAR Door - Gas Heating	Low Income	MF	LI	Retrofit	349.5	1%	3.1	0.002	20	\$1,275	100%	100%	DOOR-18	22%	75%	82%	80%	0.0	0.0	1.0	0.0
8073	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	SF	NLI	Retrofit	9,392.4	16%	1,455.8	0.789	7	\$6,780	100%	50%	SWC-1	3%	70%	79%	76%	0.1	0.1	1.0	0.1
8074	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	SF	LI	Retrofit	9,392.4	16%	1,455.8	0.789	7	\$6,780	100%	50%	SWC-2	3%	70%	79%	76%	0.1	0.1	1.0	0.1
8075	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	MF	NLI	Retrofit	3,118.5	16%	483.4	0.262	7	\$4,339	100%	50%	SWC-5	3%	70%	79%	76%	0.1	0.1	1.0	0.1
8076	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	MF	LI	Retrofit	3,118.5	16%	483.4	0.262	7	\$4,339	100%	50%	SWC-6	3%	70%	79%	76%	0.1	0.1	1.0	0.1
8077	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	SF	NLI	Retrofit	15,162.1	16%	2,350.1	1.274	7	\$6,780	100%	50%	SWC-7	26%	70%	79%	76%	0.2	0.2	1.0	0.2
8078	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	SF	LI	Retrofit	15,162.1	16%	2,350.1	1.274	7	\$6,780	100%	50%	SWC-8	26%	70%	79%	76%	0.2	0.2	1.0	0.2
8079	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	MF	NLI	Retrofit	4,797.2	16%	743.6	0.403	7	\$4,339	100%	50%	SWC-11	26%	70%	79%	76%	0.1	0.1	1.0	0.1
8080	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	MF	LI	Retrofit	4,797.2	16%	743.6	0.403	7	\$4,339	100%	50%	SWC-12	26%	70%	79%	76%	0.1	0.1	1.0	0.1

Residential Measure Summary

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
8081	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	SF	NLI	Retrofit	1,214.3	16%	188.2	0.102	7	\$6,780	100%	50%	SWC-13	22%	70%	79%	76%	0.1	0.1	1.0	0.1
8082	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	SF	LI	Retrofit	1,214.3	16%	188.2	0.102	7	\$6,780	100%	50%	SWC-14	22%	70%	79%	76%	0.1	0.1	1.0	0.1
8083	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	MF	NLI	Retrofit	349.5	16%	54.2	0.029	7	\$4,339	100%	50%	SWC-17	22%	70%	79%	76%	0.0	0.0	1.0	0.0
8084	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	MF	LI	Retrofit	349.5	16%	54.2	0.029	7	\$4,339	100%	50%	SWC-18	22%	70%	79%	76%	0.0	0.0	1.0	0.0
9001	Residential	Water Heating	Pipe Wrap	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	50%	WRAP-1	51%	17%	86%	36%	5.5	5.5	1.0	12.0
9002	Residential	Water Heating	Pipe Wrap	Low Income	SF	LI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	100%	WRAP-2	51%	17%	81%	59%	5.5	5.5	1.0	12.0
9003	Residential	Water Heating	Pipe Wrap	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	50%	WRAP-5	51%	17%	68%	33%	5.5	5.5	1.0	12.0
9004	Residential	Water Heating	Pipe Wrap	Low Income	MF	LI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	100%	WRAP-6	51%	17%	81%	59%	5.5	5.5	1.0	12.0
9005	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	50%	BATH-1	101%	14%	86%	36%	26.6	26.6	1.0	24.5
9006	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Low Income	SF	LI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	100%	BATH-2	101%	14%	81%	59%	26.6	26.6	1.0	24.5
9007	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	50%	BATH-5	101%	14%	68%	31%	7.7	7.7	1.0	8.2
9008	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Low Income	MF	LI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	100%	BATH-6	101%	14%	81%	59%	7.7	7.7	1.0	8.2
9009	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Home Energy Improvement	SF	NLI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	50%	KITCH-1	51%	14%	86%	36%	35.6	35.6	1.0	36.7
9010	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Low Income	SF	LI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	100%	KITCH-2	51%	14%	81%	59%	35.6	35.6	1.0	36.7
9011	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Home Energy Improvement	MF	NLI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	50%	KITCH-5	51%	14%	68%	31%	16.8	16.8	1.0	20.3
9012	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Low Income	MF	LI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	100%	KITCH-6	51%	14%	81%	59%	16.8	16.8	1.0	20.3
9013	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	50%	LFSSH-1	101%	12%	86%	36%	22.1	22.1	1.0	32.4
9014	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Low Income	SF	LI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	100%	LFSSH-2	101%	12%	81%	59%	22.1	22.1	1.0	32.4
9015	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	50%	LFSSH-5	101%	12%	68%	30%	22.1	22.1	1.0	32.4
9016	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Low Income	MF	LI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	100%	LFSSH-6	101%	12%	81%	59%	22.1	22.1	1.0	32.4
9017	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-1	101%	12%	86%	36%	3.0	3.0	1.0	3.7
9018	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	SF	LI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-2	101%	12%	81%	29%	3.0	3.0	1.0	3.7
9019	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-5	101%	12%	68%	30%	3.0	3.0	1.0	3.7
9020	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	MF	LI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-6	101%	12%	81%	29%	3.0	3.0	1.0	3.7
9021	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	SF	NLI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-1	51%	37%	86%	50%	1.1	1.1	1.0	1.6
9022	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	SF	LI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-2	51%	37%	81%	50%	1.1	1.1	1.0	1.6
9023	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	MF	NLI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-5	51%	37%	68%	50%	1.1	1.1	1.0	1.6
9024	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	MF	LI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-6	51%	37%	81%	50%	1.1	1.1	1.0	1.6
9025	Residential	Water Heating	Drain water Heat Recovery	Emerging Technology	SF	N/A	Retrofit	2,942.2	30%	882.0	0.101	20	\$742	100%	50%	DWHR-1	51%	10%	65%	28%	0.9	0.9	1.0	1.5
9026	Residential	Water Heating	Drain water Heat Recovery	Emerging Technology	MF	N/A	Retrofit	2,942.2	30%	882.0	0.101	20	\$742	100%	50%	DWHR-5	51%	10%	65%	28%	0.9	0.9	1.0	1.5

Residential Measure Summary

MDU_North Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1001	Residential	Appliances	ENERGY STAR Air Purifier	Residential Marketplace	SF	N/A	MO	1,201.4	57%	683.0	0.078	9	\$92	100%	50%	PUR-1	12%	92%	94%	93%	2.6	2.6	1.0	4.9
1002	Residential	Appliances	ENERGY STAR Air Purifier	Residential Marketplace	MF	N/A	MO	1,201.4	57%	683.0	0.078	9	\$92	100%	50%	PUR-5	12%	92%	94%	93%	2.6	2.6	1.0	4.9
1003	Residential	Appliances	ENERGY STAR Refrigerator	Residential Marketplace	SF	N/A	MO	349.2	10%	35.0	0.005	14	\$28	100%	50%	REF-1	100%	65%	79%	72%	0.7	0.7	1.0	1.2
1004	Residential	Appliances	ENERGY STAR Refrigerator	Residential Marketplace	MF	N/A	MO	349.2	10%	35.0	0.005	14	\$28	100%	50%	REF-5	100%	65%	75%	72%	0.7	0.7	1.0	1.2
1005	Residential	Appliances	CEE Tier 2 Refrigerator	Residential Marketplace	SF	N/A	MO	349.2	15%	52.4	0.008	14	\$112	100%	50%	REF-1	100%	65%	79%	72%	0.3	0.3	1.0	0.4
1006	Residential	Appliances	CEE Tier 2 Refrigerator	Residential Marketplace	MF	N/A	MO	349.2	15%	52.4	0.008	14	\$112	100%	50%	REF-5	100%	65%	75%	72%	0.3	0.3	1.0	0.4
1007	Residential	Appliances	CEE Tier 3 Refrigerator	Residential Marketplace	SF	N/A	MO	349.2	20%	69.8	0.011	14	\$134	100%	50%	REF-1	100%	65%	79%	72%	0.3	0.3	1.0	0.5
1008	Residential	Appliances	CEE Tier 3 Refrigerator	Residential Marketplace	MF	N/A	MO	349.2	20%	69.8	0.011	14	\$134	100%	50%	REF-5	100%	65%	75%	72%	0.3	0.3	1.0	0.5
1009	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	SF	NLI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-1	39%	20%	79%	36%	2.7	2.7	1.0	5.2
1010	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	SF	LI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-2	39%	20%	75%	36%	2.7	2.7	1.0	5.2
1011	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	MF	NLI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-5	39%	20%	60%	36%	2.7	2.7	1.0	5.2
1012	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	MF	LI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-6	39%	20%	75%	36%	2.7	2.7	1.0	5.2
1013	Residential	Appliances	ENERGY STAR Clothes Washer	Residential Marketplace	SF	N/A	MO	590.0	24%	139.6	0.018	11	\$87	100%	50%	CW-1	94%	64%	79%	71%	2.0	2.0	1.0	2.6
1014	Residential	Appliances	ENERGY STAR Clothes Washer	Residential Marketplace	MF	N/A	MO	590.0	24%	139.6	0.018	11	\$87	100%	50%	CW-5	94%	64%	75%	71%	2.0	2.0	1.0	2.6
1015	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Residential Marketplace	SF	N/A	MO	590.0	43%	254.8	0.033	11	\$85	100%	50%	CW-1	94%	64%	79%	71%	3.4	3.4	1.0	4.4
1016	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Residential Marketplace	MF	N/A	MO	590.0	43%	254.8	0.033	11	\$85	100%	50%	CW-5	94%	64%	75%	71%	3.4	3.4	1.0	4.4
1017	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 3)	Residential Marketplace	SF	N/A	MO	590.0	47%	275.6	0.036	11	\$99	100%	50%	CW-1	94%	64%	79%	71%	3.2	3.2	1.0	4.1
1018	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 3)	Residential Marketplace	MF	N/A	MO	590.0	47%	275.6	0.036	11	\$99	100%	50%	CW-5	94%	64%	75%	71%	3.2	3.2	1.0	4.1
1019	Residential	Appliances	ENERGY STAR Dishwasher	Residential Marketplace	SF	N/A	MO	307.0	43%	132.1	0.045	12	\$18	100%	50%	DW-1	79%	49%	79%	59%	6.4	6.4	1.0	7.0
1020	Residential	Appliances	ENERGY STAR Dishwasher	Residential Marketplace	MF	N/A	MO	307.0	43%	132.1	0.045	12	\$18	100%	50%	DW-5	79%	49%	64%	59%	6.4	6.4	1.0	7.0
1021	Residential	Appliances	ENERGY STAR Dehumidifier	Residential Marketplace	SF	N/A	MO	1,095.0	12%	132.3	0.041	12	\$10	100%	50%	DEH-1	25%	38%	79%	50%	9.3	9.3	1.0	11.0
1022	Residential	Appliances	ENERGY STAR Dehumidifier	Residential Marketplace	MF	N/A	MO	1,095.0	12%	132.3	0.041	12	\$10	100%	50%	DEH-5	25%	18%	60%	34%	9.3	9.3	1.0	11.0
1023	Residential	Appliances	ENERGY STAR Most Efficient Dehumidifier	Residential Marketplace	SF	N/A	MO	1,095.0	17%	188.0	0.058	12	\$75	100%	50%	DEH-1	25%	38%	79%	50%	1.8	1.8	1.0	2.1
1024	Residential	Appliances	ENERGY STAR Most Efficient Dehumidifier	Residential Marketplace	MF	N/A	MO	1,095.0	17%	188.0	0.058	12	\$75	100%	50%	DEH-5	25%	18%	60%	34%	1.8	1.8	1.0	2.1
1025	Residential	Appliances	ENERGY STAR Freezer	Residential Marketplace	SF	N/A	MO	311.4	10%	31.2	0.005	11	\$5	100%	50%	FREEZER-1	86%	40%	79%	52%	3.0	3.0	1.0	4.8
1026	Residential	Appliances	ENERGY STAR Freezer	Residential Marketplace	MF	N/A	MO	311.4	10%	31.2	0.005	11	\$5	100%	50%	FREEZER-5	86%	41%	60%	52%	3.0	3.0	1.0	4.8
1027	Residential	Appliances	Freezer Recycling	Appliance Recycling	SF	NLI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-1	4%	20%	79%	36%	2.6	2.6	1.0	5.0
1028	Residential	Appliances	Freezer Recycling	Appliance Recycling	SF	LI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-2	4%	20%	75%	36%	2.6	2.6	1.0	5.0
1029	Residential	Appliances	Freezer Recycling	Appliance Recycling	MF	NLI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-5	4%	20%	60%	36%	2.6	2.6	1.0	5.0
1030	Residential	Appliances	Freezer Recycling	Appliance Recycling	MF	LI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-6	4%	20%	75%	36%	2.6	2.6	1.0	5.0
1031	Residential	Appliances	ENERGY STAR Clothes Dryer	Residential Marketplace	SF	N/A	MO	768.9	21%	160.0	0.022	14	\$152	100%	50%	DRYER-1	92%	60%	79%	68%	0.6	0.6	1.0	1.0
1032	Residential	Appliances	ENERGY STAR Clothes Dryer	Residential Marketplace	MF	N/A	MO	768.9	21%	160.0	0.022	14	\$152	100%	50%	DRYER-5	92%	60%	72%	68%	0.6	0.6	1.0	1.0

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1033	Residential	Appliances	Heat Pump Dryer	Residential Marketplace	SF	N/A	MO	768.9	49%	378.4	0.135	14	\$405	100%	50%	DRYER-1	92%	60%	79%	68%	0.8	0.8	1.0	0.9
1034	Residential	Appliances	Heat Pump Dryer	Residential Marketplace	MF	N/A	MO	768.9	49%	378.4	0.135	14	\$405	100%	50%	DRYER-5	92%	60%	72%	68%	0.8	0.8	1.0	0.9
2001	Residential	Behavior	Home Energy Management System	Emerging Technology	SF	N/A	MO	9,848.0	3%	316.1	0.054	5	\$90	100%	50%	HEMS-1	100%	0%	65%	23%	0.9	0.9	1.0	1.4
2002	Residential	Behavior	Home Energy Management System	Emerging Technology	MF	N/A	MO	9,848.0	3%	316.1	0.054	5	\$90	100%	50%	HEMS-5	100%	0%	65%	23%	0.9	0.9	1.0	1.4
3001	Residential	HVAC Equipment	ASHP Tune Up	Home Energy Improvement	SF	NLI	Retrofit	12,510.9	5%	625.5	0.003	2	\$175	100%	50%	HP TUNE-1	3%	49%	81%	60%	0.4	0.4	1.0	0.6
3002	Residential	HVAC Equipment	ASHP Tune Up	Low Income	SF	LI	Retrofit	12,510.9	5%	625.5	0.003	2	\$175	100%	100%	HP TUNE-2	3%	49%	82%	60%	0.4	0.4	1.0	0.6
3003	Residential	HVAC Equipment	ASHP Tune Up	Home Energy Improvement	MF	NLI	Retrofit	4,113.3	5%	205.7	0.002	2	\$175	100%	50%	HP TUNE-5	3%	49%	66%	60%	0.1	0.1	1.0	0.2
3004	Residential	HVAC Equipment	ASHP Tune Up	Low Income	MF	LI	Retrofit	4,113.3	5%	205.7	0.002	2	\$175	100%	100%	HP TUNE-6	3%	49%	82%	60%	0.1	0.1	1.0	0.2
3005	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	7%	916.9	0.132	18	\$1,233	100%	50%	HP-1	3%	56%	81%	65%	0.5	0.5	1.0	0.8
3006	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	SF	LI	MO	12,510.9	7%	916.9	0.132	18	\$1,233	100%	50%	HP-2	3%	56%	82%	65%	0.5	0.5	1.0	0.8
3007	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,113.3	7%	301.3	0.088	18	\$822	100%	50%	HP-5	3%	56%	69%	65%	0.3	0.3	1.0	0.4
3008	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	MF	LI	MO	4,113.3	7%	301.3	0.088	18	\$822	100%	50%	HP-6	3%	56%	82%	65%	0.3	0.3	1.0	0.4
3009	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	16%	2,027.7	0.352	18	\$2,055	100%	50%	HP-1	3%	56%	81%	65%	0.8	0.8	1.0	1.1
3010	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	SF	LI	MO	12,510.9	16%	2,027.7	0.352	18	\$2,055	100%	50%	HP-2	3%	56%	82%	65%	0.8	0.8	1.0	1.1
3011	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,113.3	16%	666.7	0.235	18	\$1,370	100%	50%	HP-5	3%	56%	69%	65%	0.4	0.4	1.0	0.5
3012	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	MF	LI	MO	4,113.3	16%	666.7	0.235	18	\$1,370	100%	50%	HP-6	3%	56%	82%	65%	0.4	0.4	1.0	0.5
3013	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	20%	2,540.2	0.603	18	\$2,877	100%	50%	HP-1	3%	56%	81%	65%	0.7	0.7	1.0	1.0
3014	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	SF	LI	MO	12,510.9	20%	2,540.2	0.603	18	\$2,877	100%	50%	HP-2	3%	56%	82%	65%	0.7	0.7	1.0	1.0
3015	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,113.3	20%	836.5	0.402	18	\$1,918	100%	50%	HP-5	3%	56%	69%	65%	0.4	0.4	1.0	0.5
3016	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	MF	LI	MO	4,113.3	20%	836.5	0.402	18	\$1,918	100%	50%	HP-6	3%	56%	82%	65%	0.4	0.4	1.0	0.5
3017	Residential	HVAC Equipment	Ground Source Heat Pump 20 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	12%	1,558.9	0.352	20	\$7,728	100%	50%	HP-1	3%	56%	81%	65%	0.2	0.2	1.0	0.2
3018	Residential	HVAC Equipment	Ground Source Heat Pump 23.5 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	13%	1,608.4	0.509	20	\$7,728	100%	50%	HP-1	3%	56%	81%	65%	0.2	0.2	1.0	0.2
3019	Residential	HVAC Equipment	Ground Source Heat Pump 29 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	13%	1,662.1	0.680	20	\$7,728	100%	50%	HP-1	3%	56%	81%	65%	0.2	0.2	1.0	0.3
3020	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	8%	941.3	0.248	15	\$267	100%	50%	HP-1	3%	56%	81%	65%	2.6	2.6	1.0	3.5
3021	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	12,510.9	8%	941.3	0.248	15	\$267	100%	50%	HP-2	3%	56%	82%	65%	2.6	2.6	1.0	3.5
3022	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,113.3	8%	310.2	0.166	15	\$267	100%	50%	HP-5	3%	56%	69%	65%	1.1	1.1	1.0	1.1
3023	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	4,113.3	8%	310.2	0.166	15	\$267	100%	50%	HP-6	3%	56%	82%	65%	1.1	1.1	1.0	1.1
3024	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	8%	982.5	0.445	15	\$267	100%	50%	HP-1	3%	56%	81%	65%	3.3	3.3	1.0	3.6
3025	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	12,510.9	8%	982.5	0.445	15	\$267	100%	50%	HP-2	3%	56%	82%	65%	3.3	3.3	1.0	3.6
3026	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,113.3	8%	325.1	0.296	15	\$267	100%	50%	HP-5	3%	56%	69%	65%	1.5	1.5	1.0	1.2
3027	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	4,113.3	8%	325.1	0.296	15	\$267	100%	50%	HP-6	3%	56%	82%	65%	1.5	1.5	1.0	1.2
3028	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	13%	1,574.8	0.603	15	\$533	100%	50%	HP-1	3%	56%	81%	65%	2.5	2.5	1.0	2.9

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3029	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	12,510.9	13%	1,574.8	0.603	15	\$533	100%	50%	HP-2	3%	56%	82%	65%	2.5	2.5	1.0	2.9
3030	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,113.3	13%	520.3	0.402	15	\$533	100%	50%	HP-5	3%	56%	69%	65%	1.1	1.1	1.0	1.0
3031	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	4,113.3	13%	520.3	0.402	15	\$533	100%	50%	HP-6	3%	56%	82%	65%	1.1	1.1	1.0	1.0
3032	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	12,510.9	13%	1,602.3	0.735	15	\$820	100%	50%	HP-1	3%	56%	81%	65%	1.8	1.8	1.0	1.9
3033	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	12,510.9	13%	1,602.3	0.735	15	\$820	100%	50%	HP-2	3%	56%	82%	65%	1.8	1.8	1.0	1.9
3034	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,113.3	13%	530.3	0.490	15	\$820	100%	50%	HP-5	3%	56%	69%	65%	0.8	0.8	1.0	0.6
3035	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	4,113.3	13%	530.3	0.490	15	\$820	100%	50%	HP-6	3%	56%	82%	65%	0.8	0.8	1.0	0.6
3036	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	SF	NLI	MO	18,202.5	63%	11,423.2	0.132	18	\$1,233	100%	50%	HP-7	29%	56%	81%	65%	5.8	5.8	1.0	10.3
3037	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	SF	LI	MO	18,202.5	63%	11,423.2	0.132	18	\$1,233	100%	50%	HP-8	29%	56%	82%	65%	5.8	5.8	1.0	10.3
3038	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	MF	NLI	MO	6,063.1	63%	3,836.0	0.088	18	\$822	100%	50%	HP-11	3%	56%	69%	65%	3.0	3.0	1.0	5.2
3039	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	MF	LI	MO	6,063.1	63%	3,836.0	0.088	18	\$822	100%	50%	HP-12	3%	56%	82%	65%	3.0	3.0	1.0	5.2
3040	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	SF	NLI	MO	18,202.5	66%	12,075.0	0.352	18	\$2,055	100%	50%	HP-7	29%	56%	81%	65%	3.8	3.8	1.0	6.5
3041	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	SF	LI	MO	18,202.5	66%	12,075.0	0.352	18	\$2,055	100%	50%	HP-8	29%	56%	82%	65%	3.8	3.8	1.0	6.5
3042	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	MF	NLI	MO	6,063.1	67%	4,049.4	0.235	18	\$1,370	100%	50%	HP-11	3%	56%	69%	65%	2.0	2.0	1.0	3.3
3043	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	MF	LI	MO	6,063.1	67%	4,049.4	0.235	18	\$1,370	100%	50%	HP-12	3%	56%	82%	65%	2.0	2.0	1.0	3.3
3044	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	SF	NLI	MO	18,202.5	68%	12,387.5	0.603	18	\$2,877	100%	50%	HP-7	29%	56%	81%	65%	2.8	2.8	1.0	4.8
3045	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	SF	LI	MO	18,202.5	68%	12,387.5	0.603	18	\$2,877	100%	50%	HP-8	29%	56%	82%	65%	2.8	2.8	1.0	4.8
3046	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	MF	NLI	MO	6,063.1	68%	4,147.9	0.402	18	\$1,918	100%	50%	HP-11	3%	56%	69%	65%	1.5	1.5	1.0	2.4
3047	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	MF	LI	MO	6,063.1	68%	4,147.9	0.402	18	\$1,918	100%	50%	HP-12	3%	56%	82%	65%	1.5	1.5	1.0	2.4
3048	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	18,202.5	63%	11,446.2	0.248	15	\$1,004	100%	50%	HP-7	29%	56%	81%	65%	6.4	6.4	1.0	11.2
3049	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	18,202.5	63%	11,446.2	0.248	15	\$1,004	100%	50%	HP-8	29%	56%	82%	65%	6.4	6.4	1.0	11.2
3050	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	6,063.1	63%	3,840.7	0.166	15	\$1,004	100%	50%	HP-11	3%	56%	69%	65%	2.2	2.2	1.0	3.8
3051	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	6,063.1	63%	3,840.7	0.166	15	\$1,004	100%	50%	HP-12	3%	56%	82%	65%	2.2	2.2	1.0	3.8
3052	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	18,202.5	63%	11,485.1	0.445	15	\$1,004	100%	50%	HP-7	29%	56%	81%	65%	6.6	6.6	1.0	11.2
3053	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	18,202.5	63%	11,485.1	0.445	15	\$1,004	100%	50%	HP-8	29%	56%	82%	65%	6.6	6.6	1.0	11.2
3054	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	6,063.1	63%	3,848.7	0.296	15	\$1,004	100%	50%	HP-11	3%	56%	69%	65%	2.3	2.3	1.0	3.8
3055	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	6,063.1	63%	3,848.7	0.296	15	\$1,004	100%	50%	HP-12	3%	56%	82%	65%	2.3	2.3	1.0	3.8
3056	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	18,202.5	65%	11,835.9	0.603	15	\$1,070	100%	50%	HP-7	29%	56%	81%	65%	6.5	6.5	1.0	10.8
3057	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	18,202.5	65%	11,835.9	0.603	15	\$1,070	100%	50%	HP-8	29%	56%	82%	65%	6.5	6.5	1.0	10.8
3058	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	6,063.1	65%	3,962.5	0.402	15	\$1,070	100%	50%	HP-11	3%	56%	69%	65%	2.3	2.3	1.0	3.6
3059	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	6,063.1	65%	3,962.5	0.402	15	\$1,070	100%	50%	HP-12	3%	56%	82%	65%	2.3	2.3	1.0	3.6
3060	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	18,202.5	65%	11,861.8	0.735	15	\$1,557	100%	50%	HP-7	29%	56%	81%	65%	4.5	4.5	1.0	7.5

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3061	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	18,202.5	65%	11,861.8	0.735	15	\$1,557	100%	50%	HP-8	29%	56%	82%	65%	4.5	4.5	1.0	7.5
3062	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	6,063.1	65%	3,967.8	0.490	15	\$1,557	100%	50%	HP-11	3%	56%	69%	65%	1.6	1.6	1.0	2.5
3063	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	6,063.1	65%	3,967.8	0.490	15	\$1,557	100%	50%	HP-12	3%	56%	82%	65%	1.6	1.6	1.0	2.5
3064	Residential	HVAC Equipment	AC Tune Up	Home Energy Improvement	SF	NLI	Retrofit	418.0	5%	20.9	0.003	2	\$175	100%	50%	AC TUNE-1	66%	44%	81%	55%	0.0	0.0	1.0	0.0
3065	Residential	HVAC Equipment	AC Tune Up	Low Income	SF	LI	Retrofit	418.0	5%	20.9	0.003	2	\$175	100%	100%	AC TUNE-2	66%	44%	82%	60%	0.0	0.0	1.0	0.0
3066	Residential	HVAC Equipment	AC Tune Up	Home Energy Improvement	MF	NLI	Retrofit	85.6	5%	4.3	0.003	2	\$175	100%	50%	AC TUNE-5	66%	44%	66%	55%	0.0	0.0	1.0	0.0
3067	Residential	HVAC Equipment	AC Tune Up	Low Income	MF	LI	Retrofit	85.6	5%	4.3	0.003	2	\$175	100%	100%	AC TUNE-6	66%	44%	82%	60%	0.0	0.0	1.0	0.0
3068	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	SF	NLI	MO	418.0	13%	52.2	0.283	18	\$221	100%	50%	CAC-1	66%	50%	81%	60%	1.2	1.2	1.0	0.3
3069	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	SF	LI	MO	418.0	13%	52.2	0.283	18	\$221	100%	50%	CAC-2	66%	50%	82%	60%	1.2	1.2	1.0	0.3
3070	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	MF	NLI	MO	85.6	13%	10.7	0.189	18	\$221	100%	50%	CAC-5	66%	50%	66%	60%	0.7	0.7	1.0	0.1
3071	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	MF	LI	MO	85.6	13%	10.7	0.189	18	\$221	100%	50%	CAC-6	66%	50%	82%	60%	0.7	0.7	1.0	0.1
3072	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	SF	NLI	MO	418.0	22%	92.9	0.503	18	\$620	100%	50%	CAC-1	66%	50%	81%	60%	0.7	0.7	1.0	0.2
3073	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	SF	LI	MO	418.0	22%	92.9	0.503	18	\$620	100%	50%	CAC-2	66%	50%	82%	60%	0.7	0.7	1.0	0.2
3074	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	MF	NLI	MO	85.6	22%	19.0	0.335	18	\$620	100%	50%	CAC-5	66%	50%	66%	60%	0.5	0.5	1.0	0.0
3075	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	MF	LI	MO	85.6	22%	19.0	0.335	18	\$620	100%	50%	CAC-6	66%	50%	82%	60%	0.5	0.5	1.0	0.0
3076	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	SF	NLI	MO	418.0	33%	139.3	0.754	18	\$620	100%	50%	CAC-1	66%	50%	81%	60%	1.1	1.1	1.0	0.3
3077	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	SF	LI	MO	418.0	33%	139.3	0.754	18	\$620	100%	50%	CAC-2	66%	50%	82%	60%	1.1	1.1	1.0	0.3
3078	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	MF	NLI	MO	85.6	33%	28.5	0.503	18	\$620	100%	50%	CAC-5	66%	50%	66%	60%	0.7	0.7	1.0	0.1
3079	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	MF	LI	MO	85.6	33%	28.5	0.503	18	\$620	100%	50%	CAC-6	66%	50%	82%	60%	0.7	0.7	1.0	0.1
3080	Residential	HVAC Equipment	Ductless AC	Residential HVAC	SF	NLI	MO	418.0	18%	73.8	0.399	18	\$365	100%	50%	CAC-1	66%	50%	81%	60%	1.0	1.0	1.0	0.2
3081	Residential	HVAC Equipment	Ductless AC	Residential HVAC	SF	LI	MO	418.0	18%	73.8	0.399	18	\$365	100%	50%	CAC-2	66%	50%	82%	60%	1.0	1.0	1.0	0.2
3082	Residential	HVAC Equipment	Ductless AC	Residential HVAC	MF	NLI	MO	85.6	18%	15.1	0.266	18	\$365	100%	50%	CAC-5	66%	50%	66%	60%	0.6	0.6	1.0	0.0
3083	Residential	HVAC Equipment	Ductless AC	Residential HVAC	MF	LI	MO	85.6	18%	15.1	0.266	18	\$365	100%	50%	CAC-6	66%	50%	82%	60%	0.6	0.6	1.0	0.0
3084	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Residential Marketplace	SF	NLI	Retrofit	12,510.9	5%	674.0	0.000	10	\$174	100%	50%	THERMOSTAT-1	3%	22%	81%	38%	1.6	1.6	1.0	2.8
3085	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Low Income	SF	LI	Retrofit	12,510.9	5%	674.0	0.000	10	\$174	100%	100%	THERMOSTAT-2	3%	22%	82%	60%	1.6	1.6	1.0	2.8
3086	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Residential Marketplace	MF	NLI	Retrofit	4,113.3	5%	222.8	0.000	10	\$174	100%	50%	THERMOSTAT-5	3%	22%	66%	38%	0.5	0.5	1.0	0.9
3087	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Low Income	MF	LI	Retrofit	4,113.3	5%	222.8	0.000	10	\$174	100%	100%	THERMOSTAT-6	3%	22%	82%	60%	0.5	0.5	1.0	0.9
3088	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Residential Marketplace	SF	NLI	Retrofit	18,202.5	5%	962.2	0.000	10	\$174	100%	50%	THERMOSTAT-7	29%	22%	81%	38%	2.3	2.3	1.0	4.0
3089	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Low Income	SF	LI	Retrofit	18,202.5	5%	962.2	0.000	10	\$174	100%	100%	THERMOSTAT-8	29%	22%	82%	60%	2.3	2.3	1.0	4.0
3090	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Residential Marketplace	MF	NLI	Retrofit	6,063.1	5%	316.2	0.000	10	\$174	100%	50%	THERMOSTAT-11	29%	22%	66%	38%	0.7	0.7	1.0	1.3
3091	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Low Income	MF	LI	Retrofit	6,063.1	5%	316.2	0.000	10	\$174	100%	100%	THERMOSTAT-12	29%	22%	82%	60%	0.7	0.7	1.0	1.3
3092	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Residential Marketplace	SF	NLI	Retrofit	1,027.0	8%	86.2	0.000	10	\$174	100%	50%	THERMOSTAT-13	20%	22%	81%	38%	1.6	1.6	1.0	2.9

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3093	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Low Income	SF	LI	Retrofit	1,027.0	8%	86.2	0.000	10	\$174	100%	100%	THERMOSTAT-14	20%	22%	82%	60%	1.6	1.6	1.0	2.9
3094	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Residential Marketplace	MF	NLI	Retrofit	299.5	7%	22.2	0.000	10	\$174	100%	50%	THERMOSTAT-17	20%	22%	66%	38%	0.6	0.6	1.0	1.0
3095	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Low Income	MF	LI	Retrofit	299.5	7%	22.2	0.000	10	\$174	100%	100%	THERMOSTAT-18	20%	22%	82%	60%	0.6	0.6	1.0	1.0
3096	Residential	HVAC Equipment	ECM HVAC Motor	Residential HVAC	SF	N/A	Retrofit	12,510.9	2%	248.0	0.165	9	\$475	100%	50%	ECM-1	52%	50%	81%	60%	0.4	0.4	1.0	0.3
3097	Residential	HVAC Equipment	ECM HVAC Motor	Residential HVAC	MF	N/A	Retrofit	4,113.3	6%	248.0	0.165	9	\$475	100%	50%	ECM-5	52%	50%	66%	60%	0.4	0.4	1.0	0.3
3098	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Residential Marketplace	SF	NLI	MO	343.5	9%	31.5	0.076	9	\$43	100%	50%	RAC-1	25%	49%	81%	59%	1.1	1.1	1.0	0.5
3099	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Low Income	SF	LI	MO	343.5	9%	31.5	0.076	9	\$43	100%	100%	RAC-2	25%	49%	82%	60%	1.1	1.1	1.0	0.5
3100	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Residential Marketplace	MF	NLI	MO	343.5	9%	31.5	0.076	9	\$43	100%	50%	RAC-5	25%	49%	66%	59%	1.1	1.1	1.0	0.5
3101	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Low Income	MF	LI	MO	343.5	9%	31.5	0.076	9	\$43	100%	100%	RAC-6	25%	49%	82%	60%	1.1	1.1	1.0	0.5
3102	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	SF	NLI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-1	6%	20%	81%	37%	4.3	4.3	1.0	1.7
3103	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	SF	LI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-2	6%	20%	82%	36%	4.3	4.3	1.0	1.7
3104	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	MF	NLI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-5	6%	20%	66%	36%	4.3	4.3	1.0	1.7
3105	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	MF	LI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-6	6%	20%	82%	36%	4.3	4.3	1.0	1.7
3106	Residential	HVAC Equipment	Smart Vents/Sensors - Gas/CAC baseline	Emerging Technology	SF	N/A	Retrofit	1,027.0	5%	51.3	0.113	15	\$1,625	100%	50%	SVS-1	20%	3%	65%	23%	0.2	0.2	1.0	0.2
3107	Residential	HVAC Equipment	Smart Vents/Sensors - Gas/CAC baseline	Emerging Technology	MF	N/A	Retrofit	299.5	5%	15.0	0.075	15	\$1,040	100%	50%	SVS-5	20%	3%	65%	23%	0.1	0.1	1.0	0.2
3108	Residential	HVAC Equipment	Smart Vents/Sensors - Heat pump baseline	Emerging Technology	SF	N/A	Retrofit	12,510.9	5%	625.5	0.113	15	\$1,625	100%	50%	SVS-7	3%	3%	65%	23%	0.3	0.3	1.0	0.4
3109	Residential	HVAC Equipment	Smart Vents/Sensors - Heat pump baseline	Emerging Technology	MF	N/A	Retrofit	4,113.3	5%	205.7	0.075	15	\$1,040	100%	50%	SVS-11	3%	3%	65%	23%	0.2	0.2	1.0	0.2
3110	Residential	HVAC Equipment	Smart Vents/Sensors - Furnace baseline	Emerging Technology	SF	N/A	Retrofit	18,202.5	5%	910.1	0.113	15	\$1,625	100%	50%	SVS-13	29%	3%	65%	23%	0.4	0.4	1.0	0.5
3111	Residential	HVAC Equipment	Smart Vents/Sensors - Furnace baseline	Emerging Technology	MF	N/A	Retrofit	6,063.1	5%	303.2	0.075	15	\$1,040	100%	50%	SVS-18	29%	3%	65%	23%	0.2	0.2	1.0	0.3
3112	Residential	HVAC Equipment	Energy Recovery Ventilator	Emerging Technology	SF	N/A	Retrofit	12,510.9	40%	5,004.4	0.385	15	\$3,000	100%	50%	ERV-1	52%	0%	65%	23%	1.0	1.0	1.0	1.6
3113	Residential	HVAC Equipment	Energy Recovery Ventilator	Emerging Technology	MF	N/A	Retrofit	4,113.3	40%	1,645.3	0.127	15	\$3,000	100%	50%	ERV-5	52%	0%	65%	23%	0.3	0.3	1.0	0.5
3114	Residential	HVAC Equipment	Whole House Attic Fan	Residential HVAC	SF	N/A	Retrofit	418.0	18%	75.2	0.407	15	\$711	100%	50%	WHAF-1	66%	24%	81%	40%	0.5	0.5	1.0	0.1
3115	Residential	HVAC Equipment	Whole House Attic Fan	Residential HVAC	MF	N/A	Retrofit	85.6	18%	15.4	0.407	15	\$711	100%	50%	WHAF-5	66%	24%	66%	40%	0.4	0.4	1.0	0.0
3116	Residential	HVAC Equipment	Attic Fan	Residential HVAC	SF	N/A	Retrofit	418.0	8%	33.4	0.181	15	\$125	100%	50%	WHAF-1	66%	24%	81%	40%	1.2	1.2	1.0	0.3
3117	Residential	HVAC Equipment	Attic Fan	Residential HVAC	MF	N/A	Retrofit	85.6	8%	6.8	0.181	15	\$125	100%	50%	WHAF-6	66%	24%	66%	40%	1.1	1.1	1.0	0.1
4001	Residential	Lighting	9W LED	Residential Marketplace	SF	NLI	MO	23.5	48%	11.3	0.012	16	\$5	100%	50%	STAN-1	3003%	59%	79%	67%	4.8	4.8	1.0	2.4
4002	Residential	Lighting	9W LED	Low Income	SF	LI	MO	23.5	48%	11.3	0.012	16	\$5	100%	100%	STAN-2	3003%	59%	75%	67%	4.8	4.8	1.0	2.4
4003	Residential	Lighting	9W LED	Residential Marketplace	MF	NLI	MO	23.5	48%	11.3	0.012	16	\$5	100%	50%	STAN-5	1915%	59%	71%	67%	4.8	4.8	1.0	2.4
4004	Residential	Lighting	9W LED	Low Income	MF	LI	MO	23.5	48%	11.3	0.012	16	\$5	100%	100%	STAN-6	1915%	59%	75%	67%	4.8	4.8	1.0	2.4
4005	Residential	Lighting	13W LED	Residential Marketplace	SF	NLI	MO	16.9	50%	8.4	0.009	16	\$9	100%	50%	STAN-1	3003%	59%	79%	67%	2.0	2.0	1.0	1.0
4006	Residential	Lighting	13W LED	Low Income	SF	LI	MO	16.9	50%	8.4	0.009	16	\$9	100%	100%	STAN-2	3003%	59%	75%	67%	2.0	2.0	1.0	1.0
4007	Residential	Lighting	13W LED	Residential Marketplace	MF	NLI	MO	16.9	50%	8.4	0.009	16	\$9	100%	50%	STAN-5	1915%	59%	71%	67%	2.0	2.0	1.0	1.0

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4008	Residential	Lighting	13W LED	Low Income	MF	LI	MO	16.9	50%	8.4	0.009	16	\$9	100%	100%	STAN-6	1915%	59%	75%	67%	2.0	2.0	1.0	1.0
4009	Residential	Lighting	LED 5W Globe	Residential Marketplace	SF	NLI	MO	15.0	56%	8.4	0.009	16	\$5	100%	50%	REFLECTOR-1	738%	59%	79%	67%	3.6	3.6	1.0	1.8
4010	Residential	Lighting	LED 5W Globe	Low Income	SF	LI	MO	15.0	56%	8.4	0.009	16	\$5	100%	100%	REFLECTOR-2	738%	59%	75%	67%	3.6	3.6	1.0	1.8
4011	Residential	Lighting	LED 5W Globe	Residential Marketplace	MF	NLI	MO	15.0	56%	8.4	0.009	16	\$5	100%	50%	REFLECTOR-5	471%	59%	71%	67%	3.6	3.6	1.0	1.8
4012	Residential	Lighting	LED 5W Globe	Low Income	MF	LI	MO	15.0	56%	8.4	0.009	16	\$5	100%	100%	REFLECTOR-6	471%	59%	75%	67%	3.6	3.6	1.0	1.8
4013	Residential	Lighting	LED R30 Dimmable	Residential Marketplace	SF	NLI	MO	11.3	58%	6.6	0.007	20	\$4	100%	50%	SPECIALTY-1	446%	59%	79%	67%	4.1	4.1	1.0	2.1
4014	Residential	Lighting	LED R30 Dimmable	Low Income	SF	LI	MO	11.3	58%	6.6	0.007	20	\$4	100%	100%	SPECIALTY-2	446%	59%	75%	67%	4.1	4.1	1.0	2.1
4015	Residential	Lighting	LED R30 Dimmable	Residential Marketplace	MF	NLI	MO	11.3	58%	6.6	0.007	20	\$4	100%	50%	SPECIALTY-5	284%	59%	71%	67%	4.1	4.1	1.0	2.1
4016	Residential	Lighting	LED R30 Dimmable	Low Income	MF	LI	MO	11.3	58%	6.6	0.007	20	\$4	100%	100%	SPECIALTY-6	284%	59%	75%	67%	4.1	4.1	1.0	2.1
4017	Residential	Lighting	LED Nightlights	Residential Marketplace	SF	NLI	MO	14.6	93%	13.6	0.000	12	\$3	100%	50%	NIGHT-1	40%	59%	79%	67%	1.3	1.3	1.0	3.8
4018	Residential	Lighting	LED Nightlights	Low Income	SF	LI	MO	14.6	93%	13.6	0.000	12	\$3	100%	100%	NIGHT-2	40%	59%	75%	67%	1.3	1.3	1.0	3.8
4019	Residential	Lighting	LED Nightlights	Residential Marketplace	MF	NLI	MO	14.6	93%	13.6	0.000	12	\$3	100%	50%	NIGHT-5	40%	59%	71%	67%	1.3	1.3	1.0	3.8
4020	Residential	Lighting	LED Nightlights	Low Income	MF	LI	MO	14.6	93%	13.6	0.000	12	\$3	100%	100%	NIGHT-6	40%	59%	75%	67%	1.3	1.3	1.0	3.8
4021	Residential	Lighting	Exterior LED Lamp	Residential Marketplace	SF	NLI	MO	205.5	72%	141.3	0.077	8	\$40	100%	50%	ELL-1	503%	59%	79%	67%	2.7	2.7	1.0	2.1
4022	Residential	Lighting	Exterior LED Lamp	Low Income	SF	LI	MO	205.5	72%	141.3	0.077	8	\$40	100%	100%	ELL-2	503%	59%	75%	67%	2.7	2.7	1.0	2.1
4023	Residential	Lighting	Exterior LED Lamp	Residential Marketplace	MF	NLI	MO	205.5	72%	141.3	0.077	8	\$40	100%	50%	ELL-5	289%	59%	71%	67%	2.7	2.7	1.0	2.1
4024	Residential	Lighting	Exterior LED Lamp	Low Income	MF	LI	MO	205.5	72%	141.3	0.077	8	\$40	100%	100%	ELL-6	289%	59%	75%	67%	2.7	2.7	1.0	2.1
4025	Residential	Lighting	Linear LED	Residential Marketplace	SF	NLI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-1	509%	59%	79%	67%	2.3	2.3	1.0	1.7
4026	Residential	Lighting	Linear LED	Residential Marketplace	SF	LI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-2	509%	59%	75%	67%	2.3	2.3	1.0	1.7
4027	Residential	Lighting	Linear LED	Residential Marketplace	MF	NLI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-5	325%	59%	71%	67%	2.3	2.3	1.0	1.7
4028	Residential	Lighting	Linear LED	Residential Marketplace	MF	LI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-6	325%	59%	75%	67%	2.3	2.3	1.0	1.7
4029	Residential	Lighting	Smart LED	Emerging Technology	SF	NLI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-1	3003%	59%	71%	67%	0.4	0.4	1.0	1.2
4030	Residential	Lighting	Smart LED	Emerging Technology	SF	LI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-2	3003%	59%	71%	67%	0.4	0.4	1.0	1.2
4031	Residential	Lighting	Smart LED	Emerging Technology	MF	NLI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-5	1915%	59%	71%	67%	0.4	0.4	1.0	1.2
4032	Residential	Lighting	Smart LED	Emerging Technology	MF	LI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-6	1915%	59%	71%	67%	0.4	0.4	1.0	1.2
4033	Residential	Lighting	LED Fixture	Residential Marketplace	SF	NLI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-1	3003%	59%	79%	67%	2.6	2.6	1.0	1.3
4034	Residential	Lighting	LED Fixture	Residential Marketplace	SF	LI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-2	3003%	59%	75%	67%	2.6	2.6	1.0	1.3
4035	Residential	Lighting	LED Fixture	Residential Marketplace	MF	NLI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-5	1915%	59%	71%	67%	2.6	2.6	1.0	1.3
4036	Residential	Lighting	LED Fixture	Residential Marketplace	MF	LI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-6	1915%	59%	75%	67%	2.6	2.6	1.0	1.3
4037	Residential	Lighting	Occupancy Sensor	Residential Marketplace	SF	N/A	Retrofit	124.4	30%	37.1	0.046	10	\$40	100%	50%	OCC-1	1047%	31%	79%	45%	0.9	0.9	1.0	0.7
4038	Residential	Lighting	Occupancy Sensor	Residential Marketplace	MF	N/A	Retrofit	124.4	30%	37.1	0.046	10	\$40	100%	50%	OCC-5	1047%	31%	60%	45%	0.9	0.9	1.0	0.7
4039	Residential	Lighting	Smart Lighting Switch	Emerging Technology	SF	N/A	Retrofit	124.4	17%	21.2	0.047	10	\$43	100%	50%	OCC-1	1047%	31%	65%	45%	0.8	0.8	1.0	0.4

Residential Measure Summary

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Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
4040	Residential	Lighting	Smart Lighting Switch	Emerging Technology	MF	N/A	Retrofit	124.4	17%	21.2	0.047	10	\$43	100%	50%	OCC-5	1047%	31%	65%	45%	0.8	0.8	1.0	0.4
4041	Residential	Lighting	Exterior Lighting Controls	Residential Marketplace	SF	N/A	Retrofit	146.1	44%	64.5	0.026	10	\$30	100%	50%	ELC-1	252%	31%	79%	45%	1.1	1.1	1.0	1.5
4042	Residential	Lighting	Exterior Lighting Controls	Residential Marketplace	MF	N/A	Retrofit	146.1	44%	64.5	0.026	10	\$30	100%	50%	ELC-5	252%	31%	60%	45%	1.1	1.1	1.0	1.5
5001	Residential	Pool/Pump	Heat Pump Pool Heater	Emerging Technology	SF	N/A	MO	2,364.4	52%	1,233.7	0.000	8	\$1,250	100%	50%	HPPH-1	0%	12%	65%	30%	0.2	0.2	1.0	0.6
5002	Residential	Pool/Pump	Variable Speed Pool Pump	Residential Marketplace	SF	N/A	MO	1,167.0	26%	715.0	0.190	10	\$809	100%	50%	POOL-1	1%	25%	79%	40%	0.5	0.5	1.0	0.6
5003	Residential	Pool/Pump	Well Pump	Residential Marketplace	SF	N/A	MO	411.2	33%	135.7	0.015	20	\$110	100%	50%	WELL-1	4%	25%	79%	40%	0.6	0.6	1.0	1.5
6001	Residential	New Construction	ENERGY STAR New Home	Residential New Construction	SF	N/A	NC	9,848.0	25%	2,462.0	0.281	20	\$1,216	100%	50%	NC-1	100%	60%	79%	68%	1.3	1.3	1.0	2.4
6002	Residential	New Construction	ENERGY STAR New Home	Residential New Construction	MF	N/A	NC	9,848.0	25%	2,462.0	0.281	20	\$1,216	100%	50%	NC-3	100%	60%	72%	68%	1.3	1.3	1.0	2.4
7001	Residential	Plug Load	Smart Power Strips - Tier 1	Residential Marketplace	SF	NLI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	50%	SPS-1	100%	11%	79%	34%	1.0	1.0	1.0	1.8
7002	Residential	Plug Load	Smart Power Strips - Tier 1	Low Income	SF	LI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	100%	SPS-2	100%	11%	75%	55%	1.0	1.0	1.0	1.8
7003	Residential	Plug Load	Smart Power Strips - Tier 1	Residential Marketplace	MF	NLI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	50%	SPS-5	100%	11%	60%	29%	1.0	1.0	1.0	1.8
7004	Residential	Plug Load	Smart Power Strips - Tier 1	Low Income	MF	LI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	100%	SPS-6	100%	11%	75%	55%	1.0	1.0	1.0	1.8
7005	Residential	Plug Load	Smart Power Strips - Tier 2	Residential Marketplace	SF	NLI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	50%	SPS-1	100%	11%	79%	34%	0.6	0.6	1.0	1.0
7006	Residential	Plug Load	Smart Power Strips - Tier 2	Low Income	SF	LI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	100%	SPS-2	100%	11%	75%	55%	0.6	0.6	1.0	1.0
7007	Residential	Plug Load	Smart Power Strips - Tier 2	Residential Marketplace	MF	NLI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	50%	SPS-5	100%	11%	60%	29%	0.6	0.6	1.0	1.0
7008	Residential	Plug Load	Smart Power Strips - Tier 2	Low Income	MF	LI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	100%	SPS-6	100%	11%	75%	55%	0.6	0.6	1.0	1.0
8001	Residential	Shell	Duct Sealing - Average Sealing - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	12,510.9	3%	383.3	0.208	20	\$450	100%	50%	DUCT-1	3%	76%	83%	81%	1.0	1.0	1.0	1.0
8002	Residential	Shell	Duct Sealing - Average Sealing - Heat pump	Low Income	SF	LI	Retrofit	12,510.9	3%	383.3	0.208	20	\$450	100%	100%	DUCT-2	3%	76%	83%	81%	1.0	1.0	1.0	1.0
8003	Residential	Shell	Duct Sealing - Average Sealing - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,202.5	3%	557.6	0.302	20	\$450	100%	50%	DUCT-13	29%	76%	83%	81%	1.4	1.4	1.0	1.5
8004	Residential	Shell	Duct Sealing - Average Sealing - Electric furnace	Low Income	SF	LI	Retrofit	18,202.5	3%	557.6	0.302	20	\$450	100%	100%	DUCT-14	29%	76%	83%	81%	1.4	1.4	1.0	1.5
8005	Residential	Shell	Duct Sealing - Average Sealing - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,027.0	5%	49.1	0.027	20	\$450	100%	50%	DUCT-25	20%	76%	83%	81%	0.6	0.6	1.0	1.0
8006	Residential	Shell	Duct Sealing - Average Sealing - Gas Heating	Low Income	SF	LI	Retrofit	1,027.0	5%	49.1	0.027	20	\$450	100%	100%	DUCT-26	20%	76%	83%	81%	0.6	0.6	1.0	1.0
8007	Residential	Shell	Wall Insulation - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	12,510.9	9%	1,116.0	0.605	20	\$2,254	100%	50%	WALL-1	3%	80%	86%	84%	0.6	0.6	1.0	0.6
8008	Residential	Shell	Wall Insulation - Heat pump	Low Income	SF	LI	Retrofit	12,510.9	9%	1,116.0	0.605	20	\$2,254	100%	100%	WALL-2	3%	80%	86%	84%	0.6	0.6	1.0	0.6
8009	Residential	Shell	Wall Insulation - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	4,113.3	9%	366.9	0.199	20	\$969	100%	50%	WALL-5	29%	80%	86%	84%	0.4	0.4	1.0	0.5
8010	Residential	Shell	Wall Insulation - Heat pump	Low Income	MF	LI	Retrofit	4,113.3	9%	366.9	0.199	20	\$969	100%	100%	WALL-6	29%	80%	86%	84%	0.4	0.4	1.0	0.5
8011	Residential	Shell	Wall Insulation - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,202.5	9%	1,623.6	0.880	20	\$2,254	100%	50%	WALL-7	29%	80%	86%	84%	0.8	0.8	1.0	0.9
8012	Residential	Shell	Wall Insulation - Electric furnace	Low Income	SF	LI	Retrofit	18,202.5	9%	1,623.6	0.880	20	\$2,254	100%	100%	WALL-8	29%	80%	86%	84%	0.8	0.8	1.0	0.9
8013	Residential	Shell	Wall Insulation - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	6,063.1	9%	540.8	0.293	20	\$969	100%	50%	WALL-11	29%	80%	86%	84%	0.6	0.6	1.0	0.7
8014	Residential	Shell	Wall Insulation - Electric furnace	Low Income	MF	LI	Retrofit	6,063.1	9%	540.8	0.293	20	\$969	100%	100%	WALL-12	29%	80%	86%	84%	0.6	0.6	1.0	0.7
8015	Residential	Shell	Wall Insulation - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,027.0	4%	39.7	0.022	20	\$2,254	100%	50%	WALL-13	20%	80%	86%	84%	0.1	0.1	1.0	0.2
8016	Residential	Shell	Wall Insulation - Gas Heating	Low Income	SF	LI	Retrofit	1,027.0	4%	39.7	0.022	20	\$2,254	100%	100%	WALL-14	20%	80%	86%	84%	0.1	0.1	1.0	0.2

Residential Measure Summary

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Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
8017	Residential	Shell	Wall Insulation - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	299.5	4%	11.6	0.006	20	\$969	100%	50%	WALL-17	20%	80%	86%	84%	0.1	0.1	1.0	0.2
8018	Residential	Shell	Wall Insulation - Gas Heating	Low Income	MF	LI	Retrofit	299.5	4%	11.6	0.006	20	\$969	100%	100%	WALL-18	20%	80%	86%	84%	0.1	0.1	1.0	0.2
8019	Residential	Shell	Air Sealing Average Sealing - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	12,510.9	11%	1,404.4	0.761	20	\$200	100%	50%	AIR-1	3%	76%	83%	81%	8.0	8.0	1.0	8.4
8020	Residential	Shell	Air Sealing Average Sealing - Heat pump	Low Income	SF	LI	Retrofit	12,510.9	11%	1,404.4	0.761	20	\$200	100%	100%	AIR-2	3%	76%	83%	81%	8.0	8.0	1.0	8.4
8021	Residential	Shell	Air Sealing Average Sealing - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	4,113.3	11%	461.7	0.250	20	\$200	100%	50%	AIR-5	3%	76%	83%	81%	2.6	2.6	1.0	2.8
8022	Residential	Shell	Air Sealing Average Sealing - Heat pump	Low Income	MF	LI	Retrofit	4,113.3	11%	461.7	0.250	20	\$200	100%	100%	AIR-6	3%	76%	83%	81%	2.6	2.6	1.0	2.8
8023	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,202.5	14%	2,490.2	1.350	20	\$200	100%	50%	AIR-19	29%	76%	83%	81%	14.2	14.2	1.0	14.9
8024	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Low Income	SF	LI	Retrofit	18,202.5	14%	2,490.2	1.350	20	\$200	100%	100%	AIR-20	29%	76%	83%	81%	14.2	14.2	1.0	14.9
8025	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	6,063.1	14%	829.5	0.450	20	\$200	100%	50%	AIR-23	29%	76%	83%	81%	4.7	4.7	1.0	4.9
8026	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Low Income	MF	LI	Retrofit	6,063.1	14%	829.5	0.450	20	\$200	100%	100%	AIR-24	29%	76%	83%	81%	4.7	4.7	1.0	4.9
8027	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,027.0	7%	72.3	0.039	20	\$200	100%	50%	AIR-37	20%	76%	83%	81%	2.0	2.0	1.0	3.5
8028	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Low Income	SF	LI	Retrofit	1,027.0	7%	72.3	0.039	20	\$200	100%	100%	AIR-38	20%	76%	83%	81%	2.0	2.0	1.0	3.5
8029	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	299.5	7%	21.1	0.011	20	\$200	100%	50%	AIR-41	20%	76%	83%	81%	0.8	0.8	1.0	1.4
8030	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Low Income	MF	LI	Retrofit	299.5	7%	21.1	0.011	20	\$200	100%	100%	AIR-42	20%	76%	83%	81%	0.8	0.8	1.0	1.4
8031	Residential	Shell	Attic Insulation - Average Insulation - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	12,510.9	3%	374.0	0.203	20	\$898	100%	50%	ATTIC-1	3%	73%	81%	78%	0.5	0.5	1.0	0.5
8032	Residential	Shell	Attic Insulation - Average Insulation - Heat pump	Low Income	SF	LI	Retrofit	12,510.9	3%	374.0	0.203	20	\$898	100%	100%	ATTIC-2	3%	73%	82%	78%	0.5	0.5	1.0	0.5
8033	Residential	Shell	Attic Insulation - Average Insulation - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,202.5	3%	544.1	0.295	20	\$898	100%	50%	ATTIC-7	29%	73%	81%	78%	0.7	0.7	1.0	0.7
8034	Residential	Shell	Attic Insulation - Average Insulation - Electric furnace	Low Income	SF	LI	Retrofit	18,202.5	3%	544.1	0.295	20	\$898	100%	100%	ATTIC-8	29%	73%	82%	78%	0.7	0.7	1.0	0.7
8035	Residential	Shell	Attic Insulation - Average Insulation - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,027.0	2%	22.0	0.012	20	\$898	100%	50%	ATTIC-13	20%	73%	81%	78%	0.1	0.1	1.0	0.2
8036	Residential	Shell	Attic Insulation - Average Insulation - Gas Heating	Low Income	SF	LI	Retrofit	1,027.0	2%	22.0	0.012	20	\$898	100%	100%	ATTIC-14	20%	73%	82%	78%	0.1	0.1	1.0	0.2
8037	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	12,510.9	6%	772.3	0.419	20	\$11,300	100%	50%	WINDOW-1	3%	70%	79%	76%	0.1	0.1	1.0	0.1
8038	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	SF	LI	Retrofit	12,510.9	6%	772.3	0.419	20	\$11,300	100%	50%	WINDOW-2	3%	70%	82%	76%	0.1	0.1	1.0	0.1
8039	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	4,113.3	6%	253.9	0.138	20	\$7,232	100%	50%	WINDOW-5	3%	70%	79%	76%	0.0	0.0	1.0	0.0
8040	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	MF	LI	Retrofit	4,113.3	6%	253.9	0.138	20	\$7,232	100%	50%	WINDOW-6	3%	70%	82%	76%	0.0	0.0	1.0	0.0
8041	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,202.5	5%	934.0	0.506	20	\$11,300	100%	50%	WINDOW-7	29%	70%	79%	76%	0.1	0.1	1.0	0.1
8042	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	SF	LI	Retrofit	18,202.5	5%	934.0	0.506	20	\$11,300	100%	50%	WINDOW-8	29%	70%	82%	76%	0.1	0.1	1.0	0.1
8043	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	6,063.1	5%	311.1	0.169	20	\$7,232	100%	50%	WINDOW-11	29%	70%	79%	76%	0.0	0.0	1.0	0.1
8044	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	MF	LI	Retrofit	6,063.1	5%	311.1	0.169	20	\$7,232	100%	50%	WINDOW-12	29%	70%	82%	76%	0.0	0.0	1.0	0.1
8045	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,027.0	6%	57.8	0.031	20	\$11,300	100%	50%	WINDOW-13	20%	70%	79%	76%	0.0	0.0	1.0	0.0
8046	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	SF	LI	Retrofit	1,027.0	6%	57.8	0.031	20	\$11,300	100%	50%	WINDOW-14	20%	70%	82%	76%	0.0	0.0	1.0	0.0
8047	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	299.5	6%	16.9	0.009	20	\$7,232	100%	50%	WINDOW-17	20%	70%	79%	76%	0.0	0.0	1.0	0.0
8048	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	MF	LI	Retrofit	299.5	6%	16.9	0.009	20	\$7,232	100%	50%	WINDOW-18	20%	70%	82%	76%	0.0	0.0	1.0	0.0

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8049	Residential	Shell	Basement Sidewall Insulation - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	12,510.9	6%	688.5	0.373	20	\$696	100%	50%	BASEMENT-1	3%	80%	86%	84%	1.1	1.1	1.0	1.2
8050	Residential	Shell	Basement Sidewall Insulation - Heat pump	Low Income	SF	LI	Retrofit	12,510.9	6%	688.5	0.373	20	\$696	100%	100%	BASEMENT-2	3%	80%	86%	84%	1.1	1.1	1.0	1.2
8051	Residential	Shell	Basement Sidewall Insulation - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,202.5	6%	1,001.8	0.543	20	\$696	100%	50%	BASEMENT-3	29%	80%	86%	84%	1.6	1.6	1.0	1.7
8052	Residential	Shell	Basement Sidewall Insulation - Electric furnace	Low Income	SF	LI	Retrofit	18,202.5	6%	1,001.8	0.543	20	\$696	100%	100%	BASEMENT-4	29%	80%	86%	84%	1.6	1.6	1.0	1.7
8053	Residential	Shell	Basement Sidewall Insulation - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,027.0	6%	56.5	0.031	20	\$696	100%	50%	BASEMENT-5	20%	80%	86%	84%	0.5	0.5	1.0	0.8
8054	Residential	Shell	Basement Sidewall Insulation - Gas Heating	Low Income	SF	LI	Retrofit	1,027.0	6%	56.5	0.031	20	\$696	100%	100%	BASEMENT-6	20%	80%	86%	84%	0.5	0.5	1.0	0.8
8055	Residential	Shell	Floor Insulation Above Crawlspce - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	12,510.9	1%	73.1	0.040	25	\$772	100%	50%	CRAWL-1	3%	80%	86%	84%	0.1	0.1	1.0	0.1
8056	Residential	Shell	Floor Insulation Above Crawlspce - Heat pump	Low Income	SF	LI	Retrofit	12,510.9	1%	73.1	0.040	25	\$476	100%	100%	CRAWL-2	3%	80%	86%	84%	0.2	0.2	1.0	0.2
8057	Residential	Shell	Floor Insulation Above Crawlspce - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,202.5	1%	106.4	0.058	25	\$772	100%	50%	CRAWL-5	29%	80%	86%	84%	0.2	0.2	1.0	0.2
8058	Residential	Shell	Floor Insulation Above Crawlspce - Electric furnace	Low Income	SF	LI	Retrofit	18,202.5	1%	106.4	0.058	25	\$476	100%	100%	CRAWL-6	29%	80%	86%	84%	0.3	0.3	1.0	0.3
8059	Residential	Shell	Floor Insulation Above Crawlspce - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,027.0	1%	6.0	0.003	25	\$772	100%	50%	CRAWL-9	20%	80%	86%	84%	0.0	0.0	1.0	0.1
8060	Residential	Shell	Floor Insulation Above Crawlspce - Gas Heating	Low Income	SF	LI	Retrofit	1,027.0	1%	6.0	0.003	25	\$476	100%	100%	CRAWL-10	20%	80%	86%	84%	0.1	0.1	1.0	0.1
8061	Residential	Shell	ENERGY STAR Door - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	12,510.9	5%	615.2	0.333	20	\$1,275	100%	50%	DOOR-1	3%	75%	82%	80%	0.5	0.5	1.0	0.6
8062	Residential	Shell	ENERGY STAR Door - Heat pump	Low Income	SF	LI	Retrofit	12,510.9	5%	615.2	0.333	20	\$1,275	100%	100%	DOOR-2	3%	75%	82%	80%	0.5	0.5	1.0	0.6
8063	Residential	Shell	ENERGY STAR Door - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	4,113.3	5%	202.3	0.110	20	\$1,275	100%	50%	DOOR-5	3%	75%	82%	80%	0.2	0.2	1.0	0.2
8064	Residential	Shell	ENERGY STAR Door - Heat pump	Low Income	MF	LI	Retrofit	4,113.3	5%	202.3	0.110	20	\$1,275	100%	100%	DOOR-6	3%	75%	82%	80%	0.2	0.2	1.0	0.2
8065	Residential	Shell	ENERGY STAR Door - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,202.5	2%	300.9	0.163	20	\$1,275	100%	50%	DOOR-7	29%	75%	82%	80%	0.3	0.3	1.0	0.3
8066	Residential	Shell	ENERGY STAR Door - Electric furnace	Low Income	SF	LI	Retrofit	18,202.5	2%	300.9	0.163	20	\$1,275	100%	100%	DOOR-8	29%	75%	82%	80%	0.3	0.3	1.0	0.3
8067	Residential	Shell	ENERGY STAR Door - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	6,063.1	2%	100.2	0.054	20	\$1,275	100%	50%	DOOR-11	29%	75%	82%	80%	0.1	0.1	1.0	0.1
8068	Residential	Shell	ENERGY STAR Door - Electric furnace	Low Income	MF	LI	Retrofit	6,063.1	2%	100.2	0.054	20	\$1,275	100%	100%	DOOR-12	29%	75%	82%	80%	0.1	0.1	1.0	0.1
8069	Residential	Shell	ENERGY STAR Door - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,027.0	1%	9.0	0.005	20	\$1,275	100%	50%	DOOR-13	20%	75%	82%	80%	0.0	0.0	1.0	0.1
8070	Residential	Shell	ENERGY STAR Door - Gas Heating	Low Income	SF	LI	Retrofit	1,027.0	1%	9.0	0.005	20	\$1,275	100%	100%	DOOR-14	20%	75%	82%	80%	0.0	0.0	1.0	0.1
8071	Residential	Shell	ENERGY STAR Door - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	299.5	1%	2.6	0.001	20	\$1,275	100%	50%	DOOR-17	20%	75%	82%	80%	0.0	0.0	1.0	0.0
8072	Residential	Shell	ENERGY STAR Door - Gas Heating	Low Income	MF	LI	Retrofit	299.5	1%	2.6	0.001	20	\$1,275	100%	100%	DOOR-18	20%	75%	82%	80%	0.0	0.0	1.0	0.0
8073	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	SF	NLI	Retrofit	12,510.9	16%	1,939.2	1.051	7	\$6,780	100%	50%	SWC-1	3%	70%	79%	76%	0.2	0.2	1.0	0.2
8074	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	SF	LI	Retrofit	12,510.9	16%	1,939.2	1.051	7	\$6,780	100%	50%	SWC-2	3%	70%	79%	76%	0.2	0.2	1.0	0.2
8075	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	MF	NLI	Retrofit	4,113.3	16%	637.6	0.346	7	\$4,339	100%	50%	SWC-5	3%	70%	79%	76%	0.1	0.1	1.0	0.1
8076	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	MF	LI	Retrofit	4,113.3	16%	637.6	0.346	7	\$4,339	100%	50%	SWC-6	3%	70%	79%	76%	0.1	0.1	1.0	0.1
8077	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	SF	NLI	Retrofit	18,202.5	16%	2,821.4	1.529	7	\$6,780	100%	50%	SWC-7	29%	70%	79%	76%	0.2	0.2	1.0	0.2
8078	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	SF	LI	Retrofit	18,202.5	16%	2,821.4	1.529	7	\$6,780	100%	50%	SWC-8	29%	70%	79%	76%	0.2	0.2	1.0	0.2
8079	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	MF	NLI	Retrofit	6,063.1	16%	939.8	0.509	7	\$4,339	100%	50%	SWC-11	29%	70%	79%	76%	0.1	0.1	1.0	0.1
8080	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	MF	LI	Retrofit	6,063.1	16%	939.8	0.509	7	\$4,339	100%	50%	SWC-12	29%	70%	79%	76%	0.1	0.1	1.0	0.1

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Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
8081	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	SF	NLI	Retrofit	1,027.0	16%	159.2	0.086	7	\$6,780	100%	50%	SWC-13	20%	70%	79%	76%	0.1	0.1	1.0	0.1
8082	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	SF	LI	Retrofit	1,027.0	16%	159.2	0.086	7	\$6,780	100%	50%	SWC-14	20%	70%	79%	76%	0.1	0.1	1.0	0.1
8083	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	MF	NLI	Retrofit	299.5	16%	46.4	0.025	7	\$4,339	100%	50%	SWC-17	20%	70%	79%	76%	0.0	0.0	1.0	0.1
8084	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	MF	LI	Retrofit	299.5	16%	46.4	0.025	7	\$4,339	100%	50%	SWC-18	20%	70%	79%	76%	0.0	0.0	1.0	0.1
9001	Residential	Water Heating	Pipe Wrap	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	50%	WRAP-1	50%	14%	82%	35%	4.6	4.6	1.0	11.2
9002	Residential	Water Heating	Pipe Wrap	Low Income	SF	LI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	100%	WRAP-2	50%	14%	81%	59%	4.6	4.6	1.0	11.2
9003	Residential	Water Heating	Pipe Wrap	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	50%	WRAP-5	50%	14%	67%	32%	4.6	4.6	1.0	11.2
9004	Residential	Water Heating	Pipe Wrap	Low Income	MF	LI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	100%	WRAP-6	50%	14%	81%	59%	4.6	4.6	1.0	11.2
9005	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	50%	BATH-1	99%	11%	82%	35%	22.8	22.8	1.0	24.0
9006	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Low Income	SF	LI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	100%	BATH-2	99%	11%	81%	59%	22.8	22.8	1.0	24.0
9007	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	50%	BATH-5	99%	11%	67%	32%	6.6	6.6	1.0	7.8
9008	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Low Income	MF	LI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	100%	BATH-6	99%	11%	81%	59%	6.6	6.6	1.0	7.8
9009	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Home Energy Improvement	SF	NLI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	50%	KITCH-1	50%	11%	82%	35%	30.4	30.4	1.0	35.4
9010	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Low Income	SF	LI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	100%	KITCH-2	50%	11%	81%	59%	30.4	30.4	1.0	35.4
9011	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Home Energy Improvement	MF	NLI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	50%	KITCH-5	50%	11%	67%	32%	14.3	14.3	1.0	19.2
9012	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Low Income	MF	LI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	100%	KITCH-6	50%	11%	81%	59%	14.3	14.3	1.0	19.2
9013	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	50%	LFSSH-1	99%	12%	82%	35%	18.8	18.8	1.0	30.8
9014	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Low Income	SF	LI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	100%	LFSSH-2	99%	12%	81%	59%	18.8	18.8	1.0	30.8
9015	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	50%	LFSSH-5	99%	12%	67%	32%	18.8	18.8	1.0	30.8
9016	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Low Income	MF	LI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	100%	LFSSH-6	99%	12%	81%	59%	18.8	18.8	1.0	30.8
9017	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-1	99%	12%	82%	35%	2.6	2.6	1.0	3.5
9018	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	SF	LI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-2	99%	12%	81%	30%	2.6	2.6	1.0	3.5
9019	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-5	99%	12%	67%	32%	2.6	2.6	1.0	3.5
9020	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	MF	LI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-6	99%	12%	81%	30%	2.6	2.6	1.0	3.5
9021	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	SF	NLI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-1	50%	31%	82%	45%	0.9	0.9	1.0	1.5
9022	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	SF	LI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-2	50%	31%	81%	45%	0.9	0.9	1.0	1.5
9023	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	MF	NLI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-5	50%	31%	67%	45%	0.9	0.9	1.0	1.5
9024	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	MF	LI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-6	50%	31%	81%	45%	0.9	0.9	1.0	1.5
9025	Residential	Water Heating	Drain water Heat Recovery	Emerging Technology	SF	N/A	Retrofit	2,942.2	30%	882.0	0.101	20	\$742	100%	50%	DWHR-1	50%	10%	65%	28%	0.7	0.7	1.0	1.4
9026	Residential	Water Heating	Drain water Heat Recovery	Emerging Technology	MF	N/A	Retrofit	2,942.2	30%	882.0	0.101	20	\$742	100%	50%	DWHR-5	50%	10%	65%	28%	0.7	0.7	1.0	1.4

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1001	Residential	Appliances	ENERGY STAR Air Purifier	Residential Marketplace	SF	N/A	MO	1,201.4	57%	683.0	0.078	9	\$92	100%	50%	PUR-1	12%	92%	94%	93%	2.7	2.7	1.0	5.9
1002	Residential	Appliances	ENERGY STAR Air Purifier	Residential Marketplace	MF	N/A	MO	1,201.4	57%	683.0	0.078	9	\$92	100%	50%	PUR-5	12%	92%	94%	93%	2.7	2.7	1.0	5.9
1003	Residential	Appliances	ENERGY STAR Refrigerator	Residential Marketplace	SF	N/A	MO	349.2	10%	35.0	0.005	14	\$28	100%	50%	REF-1	100%	65%	86%	72%	0.7	0.7	1.0	1.4
1004	Residential	Appliances	ENERGY STAR Refrigerator	Residential Marketplace	MF	N/A	MO	349.2	10%	35.0	0.005	14	\$28	100%	50%	REF-5	100%	65%	76%	72%	0.7	0.7	1.0	1.4
1005	Residential	Appliances	CEE Tier 2 Refrigerator	Residential Marketplace	SF	N/A	MO	349.2	15%	52.4	0.008	14	\$112	100%	50%	REF-1	100%	65%	86%	72%	0.3	0.3	1.0	0.5
1006	Residential	Appliances	CEE Tier 2 Refrigerator	Residential Marketplace	MF	N/A	MO	349.2	15%	52.4	0.008	14	\$112	100%	50%	REF-5	100%	65%	76%	72%	0.3	0.3	1.0	0.5
1007	Residential	Appliances	CEE Tier 3 Refrigerator	Residential Marketplace	SF	N/A	MO	349.2	20%	69.8	0.011	14	\$134	100%	50%	REF-1	100%	65%	86%	72%	0.3	0.3	1.0	0.6
1008	Residential	Appliances	CEE Tier 3 Refrigerator	Residential Marketplace	MF	N/A	MO	349.2	20%	69.8	0.011	14	\$134	100%	50%	REF-5	100%	65%	76%	72%	0.3	0.3	1.0	0.6
1009	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	SF	NLI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-1	36%	20%	86%	37%	2.7	2.7	1.0	6.3
1010	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	SF	LI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-2	36%	20%	75%	36%	2.7	2.7	1.0	6.3
1011	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	MF	NLI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-5	36%	20%	67%	36%	2.7	2.7	1.0	6.3
1012	Residential	Appliances	Refrigerator Recycling	Appliance Recycling	MF	LI	Recycle	962.0	100%	962.0	0.095	8	\$110	100%	50%	RR-6	36%	20%	75%	36%	2.7	2.7	1.0	6.3
1013	Residential	Appliances	ENERGY STAR Clothes Washer	Residential Marketplace	SF	N/A	MO	590.0	24%	139.6	0.018	11	\$87	100%	50%	CW-1	96%	66%	86%	73%	2.0	2.0	1.0	2.8
1014	Residential	Appliances	ENERGY STAR Clothes Washer	Residential Marketplace	MF	N/A	MO	590.0	24%	139.6	0.018	11	\$87	100%	50%	CW-5	96%	66%	76%	73%	2.0	2.0	1.0	2.8
1015	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Residential Marketplace	SF	N/A	MO	590.0	43%	254.8	0.033	11	\$85	100%	50%	CW-1	96%	66%	86%	73%	3.5	3.5	1.0	5.0
1016	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Residential Marketplace	MF	N/A	MO	590.0	43%	254.8	0.033	11	\$85	100%	50%	CW-5	96%	66%	76%	73%	3.5	3.5	1.0	5.0
1017	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 3)	Residential Marketplace	SF	N/A	MO	590.0	47%	275.6	0.036	11	\$99	100%	50%	CW-1	96%	66%	86%	73%	3.2	3.2	1.0	4.6
1018	Residential	Appliances	ENERGY STAR Clothes Washer (CEE Tier 3)	Residential Marketplace	MF	N/A	MO	590.0	47%	275.6	0.036	11	\$99	100%	50%	CW-5	96%	66%	76%	73%	3.2	3.2	1.0	4.6
1019	Residential	Appliances	ENERGY STAR Dishwasher	Residential Marketplace	SF	N/A	MO	307.0	43%	132.1	0.045	12	\$18	100%	50%	DW-1	73%	48%	86%	59%	6.4	6.4	1.0	8.3
1020	Residential	Appliances	ENERGY STAR Dishwasher	Residential Marketplace	MF	N/A	MO	307.0	43%	132.1	0.045	12	\$18	100%	50%	DW-5	73%	48%	67%	59%	6.4	6.4	1.0	8.3
1021	Residential	Appliances	ENERGY STAR Dehumidifier	Residential Marketplace	SF	N/A	MO	1,095.0	12%	132.3	0.041	12	\$10	100%	50%	DEH-1	25%	38%	86%	50%	9.4	9.4	1.0	13.4
1022	Residential	Appliances	ENERGY STAR Dehumidifier	Residential Marketplace	MF	N/A	MO	1,095.0	12%	132.3	0.041	12	\$10	100%	50%	DEH-5	25%	18%	67%	34%	9.4	9.4	1.0	13.4
1023	Residential	Appliances	ENERGY STAR Most Efficient Dehumidifier	Residential Marketplace	SF	N/A	MO	1,095.0	17%	188.0	0.058	12	\$75	100%	50%	DEH-1	25%	38%	86%	50%	1.8	1.8	1.0	2.5
1024	Residential	Appliances	ENERGY STAR Most Efficient Dehumidifier	Residential Marketplace	MF	N/A	MO	1,095.0	17%	188.0	0.058	12	\$75	100%	50%	DEH-5	25%	18%	67%	34%	1.8	1.8	1.0	2.5
1025	Residential	Appliances	ENERGY STAR Freezer	Residential Marketplace	SF	N/A	MO	311.4	10%	31.2	0.005	11	\$5	100%	50%	FREEZER-1	92%	41%	86%	52%	3.0	3.0	1.0	5.9
1026	Residential	Appliances	ENERGY STAR Freezer	Residential Marketplace	MF	N/A	MO	311.4	10%	31.2	0.005	11	\$5	100%	50%	FREEZER-5	92%	41%	67%	52%	3.0	3.0	1.0	5.9
1027	Residential	Appliances	Freezer Recycling	Appliance Recycling	SF	NLI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-1	5%	20%	86%	37%	2.6	2.6	1.0	6.1
1028	Residential	Appliances	Freezer Recycling	Appliance Recycling	SF	LI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-2	5%	20%	75%	36%	2.6	2.6	1.0	6.1
1029	Residential	Appliances	Freezer Recycling	Appliance Recycling	MF	NLI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-5	5%	20%	67%	36%	2.6	2.6	1.0	6.1
1030	Residential	Appliances	Freezer Recycling	Appliance Recycling	MF	LI	Recycle	926.0	100%	926.0	0.092	8	\$110	100%	50%	FR-6	5%	20%	75%	36%	2.6	2.6	1.0	6.1
1031	Residential	Appliances	ENERGY STAR Clothes Dryer	Residential Marketplace	SF	N/A	MO	768.9	21%	160.0	0.022	14	\$152	100%	50%	DRYER-1	92%	61%	86%	69%	0.6	0.6	1.0	1.2

Residential Measure Summary

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1032	Residential	Appliances	ENERGY STAR Clothes Dryer	Residential Marketplace	MF	N/A	MO	768.9	21%	160.0	0.022	14	\$152	100%	50%	DRYER-5	92%	61%	73%	69%	0.6	0.6	1.0	1.2
1033	Residential	Appliances	Heat Pump Dryer	Residential Marketplace	SF	N/A	MO	768.9	49%	378.4	0.135	14	\$405	100%	50%	DRYER-1	92%	61%	86%	69%	0.8	0.8	1.0	1.1
1034	Residential	Appliances	Heat Pump Dryer	Residential Marketplace	MF	N/A	MO	768.9	49%	378.4	0.135	14	\$405	100%	50%	DRYER-5	92%	61%	73%	69%	0.8	0.8	1.0	1.1
2001	Residential	Behavior	Home Energy Management System	Emerging Technology	SF	N/A	MO	9,848.0	3%	316.1	0.054	5	\$90	100%	50%	HEMS-1	100%	0%	65%	23%	0.9	0.9	1.0	1.7
2002	Residential	Behavior	Home Energy Management System	Emerging Technology	MF	N/A	MO	9,848.0	3%	316.1	0.054	5	\$90	100%	50%	HEMS-5	100%	0%	65%	23%	0.9	0.9	1.0	1.7
3001	Residential	HVAC Equipment	ASHP Tune Up	Home Energy Improvement	SF	NLI	Retrofit	11,289.3	5%	564.5	0.003	2	\$175	100%	50%	HP TUNE-1	3%	49%	82%	60%	0.3	0.3	1.0	0.7
3002	Residential	HVAC Equipment	ASHP Tune Up	Low Income	SF	LI	Retrofit	11,289.3	5%	564.5	0.003	2	\$175	100%	100%	HP TUNE-2	3%	49%	82%	60%	0.3	0.3	1.0	0.7
3003	Residential	HVAC Equipment	ASHP Tune Up	Home Energy Improvement	MF	NLI	Retrofit	4,496.3	5%	224.8	0.002	2	\$175	100%	50%	HP TUNE-5	3%	49%	68%	60%	0.1	0.1	1.0	0.3
3004	Residential	HVAC Equipment	ASHP Tune Up	Low Income	MF	LI	Retrofit	4,496.3	5%	224.8	0.002	2	\$175	100%	100%	HP TUNE-6	3%	49%	82%	60%	0.1	0.1	1.0	0.3
3005	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	7%	824.4	0.132	18	\$1,233	100%	50%	HP-1	3%	56%	82%	65%	0.5	0.5	1.0	0.9
3006	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	SF	LI	MO	11,289.3	7%	824.4	0.132	18	\$1,233	100%	50%	HP-2	3%	56%	82%	65%	0.5	0.5	1.0	0.9
3007	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,496.3	7%	328.9	0.088	18	\$822	100%	50%	HP-5	3%	56%	69%	65%	0.3	0.3	1.0	0.5
3008	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Heat pump baseline	Residential HVAC	MF	LI	MO	4,496.3	7%	328.9	0.088	18	\$822	100%	50%	HP-6	3%	56%	82%	65%	0.3	0.3	1.0	0.5
3009	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	16%	1,830.9	0.352	18	\$2,055	100%	50%	HP-1	3%	56%	82%	65%	0.7	0.7	1.0	1.2
3010	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	SF	LI	MO	11,289.3	16%	1,830.9	0.352	18	\$2,055	100%	50%	HP-2	3%	56%	82%	65%	0.7	0.7	1.0	1.2
3011	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,496.3	16%	729.0	0.235	18	\$1,370	100%	50%	HP-5	3%	56%	69%	65%	0.5	0.5	1.0	0.7
3012	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Heat pump baseline	Residential HVAC	MF	LI	MO	4,496.3	16%	729.0	0.235	18	\$1,370	100%	50%	HP-6	3%	56%	82%	65%	0.5	0.5	1.0	0.7
3013	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	21%	2,314.7	0.603	18	\$2,877	100%	50%	HP-1	3%	56%	82%	65%	0.7	0.7	1.0	1.1
3014	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	SF	LI	MO	11,289.3	21%	2,314.7	0.603	18	\$2,877	100%	50%	HP-2	3%	56%	82%	65%	0.7	0.7	1.0	1.1
3015	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,496.3	20%	917.7	0.402	18	\$1,918	100%	50%	HP-5	3%	56%	69%	65%	0.5	0.5	1.0	0.7
3016	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Heat pump baseline	Residential HVAC	MF	LI	MO	4,496.3	20%	917.7	0.402	18	\$1,918	100%	50%	HP-6	3%	56%	82%	65%	0.5	0.5	1.0	0.7
3017	Residential	HVAC Equipment	Ground Source Heat Pump 20 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	13%	1,440.9	0.352	20	\$7,728	100%	50%	HP-1	3%	56%	82%	65%	0.2	0.2	1.0	0.3
3018	Residential	HVAC Equipment	Ground Source Heat Pump 23.5 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	13%	1,515.0	0.509	20	\$7,728	100%	50%	HP-1	3%	56%	82%	65%	0.2	0.2	1.0	0.3
3019	Residential	HVAC Equipment	Ground Source Heat Pump 29 SEER - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	14%	1,595.3	0.680	20	\$7,728	100%	50%	HP-1	3%	56%	82%	65%	0.2	0.2	1.0	0.3
3020	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	8%	861.0	0.248	15	\$267	100%	50%	HP-1	3%	56%	82%	65%	2.5	2.5	1.0	3.9
3021	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	11,289.3	8%	861.0	0.248	15	\$267	100%	50%	HP-2	3%	56%	82%	65%	2.5	2.5	1.0	3.9
3022	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,496.3	8%	340.8	0.166	15	\$267	100%	50%	HP-5	3%	56%	69%	65%	1.2	1.2	1.0	1.5
3023	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	4,496.3	8%	340.8	0.166	15	\$267	100%	50%	HP-6	3%	56%	82%	65%	1.2	1.2	1.0	1.5
3024	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	8%	922.6	0.445	15	\$267	100%	50%	HP-1	3%	56%	82%	65%	3.2	3.2	1.0	4.1
3025	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	11,289.3	8%	922.6	0.445	15	\$267	100%	50%	HP-2	3%	56%	82%	65%	3.2	3.2	1.0	4.1
3026	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,496.3	8%	360.7	0.296	15	\$267	100%	50%	HP-5	3%	56%	69%	65%	1.6	1.6	1.0	1.6

Residential Measure Summary

MDU_South Dakota																									
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
3027	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	4,496.3	8%	360.7	0.296	15	\$267	100%	50%	HP-6	3%	56%	82%	65%	1.6	1.6	1.0	1.6	
3028	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	13%	1,464.6	0.603	15	\$533	100%	50%	HP-1	3%	56%	82%	65%	2.4	2.4	1.0	3.3	
3029	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	11,289.3	13%	1,464.6	0.603	15	\$533	100%	50%	HP-2	3%	56%	82%	65%	2.4	2.4	1.0	3.3	
3030	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,496.3	13%	575.2	0.402	15	\$533	100%	50%	HP-5	3%	56%	69%	65%	1.2	1.2	1.0	1.3	
3031	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	4,496.3	13%	575.2	0.402	15	\$533	100%	50%	HP-6	3%	56%	82%	65%	1.2	1.2	1.0	1.3	
3032	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	NLI	MO	11,289.3	13%	1,505.8	0.735	15	\$820	100%	50%	HP-1	3%	56%	82%	65%	1.7	1.7	1.0	2.2	
3033	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	SF	LI	MO	11,289.3	13%	1,505.8	0.735	15	\$820	100%	50%	HP-2	3%	56%	82%	65%	1.7	1.7	1.0	2.2	
3034	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	NLI	MO	4,496.3	13%	588.5	0.490	15	\$820	100%	50%	HP-5	3%	56%	69%	65%	0.9	0.9	1.0	0.9	
3035	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Heat pump baseline	Residential HVAC	MF	LI	MO	4,496.3	13%	588.5	0.490	15	\$820	100%	50%	HP-6	3%	56%	82%	65%	0.9	0.9	1.0	0.9	
3036	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	SF	NLI	MO	18,430.7	62%	11,427.6	0.132	18	\$1,233	100%	50%	HP-7	26%	56%	82%	65%	5.9	5.9	1.0	12.6	
3037	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	SF	LI	MO	18,430.7	62%	11,427.6	0.132	18	\$1,233	100%	50%	HP-8	26%	56%	82%	65%	5.9	5.9	1.0	12.6	
3038	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	MF	NLI	MO	6,458.9	63%	4,051.2	0.088	18	\$822	100%	50%	HP-11	3%	56%	69%	65%	3.2	3.2	1.0	6.7	
3039	Residential	HVAC Equipment	Air Source Heat Pump 16 SEER - Furnace baseline	Residential HVAC	MF	LI	MO	6,458.9	63%	4,051.2	0.088	18	\$822	100%	50%	HP-12	3%	56%	82%	65%	3.2	3.2	1.0	6.7	
3040	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	SF	NLI	MO	18,430.7	66%	12,104.4	0.352	18	\$2,055	100%	50%	HP-7	26%	56%	82%	65%	3.8	3.8	1.0	8.0	
3041	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	SF	LI	MO	18,430.7	66%	12,104.4	0.352	18	\$2,055	100%	50%	HP-8	26%	56%	82%	65%	3.8	3.8	1.0	8.0	
3042	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	MF	NLI	MO	6,458.9	66%	4,282.8	0.235	18	\$1,370	100%	50%	HP-11	3%	56%	69%	65%	2.1	2.1	1.0	4.3	
3043	Residential	HVAC Equipment	Air Source Heat Pump 18 SEER - Furnace baseline	Residential HVAC	MF	LI	MO	6,458.9	66%	4,282.8	0.235	18	\$1,370	100%	50%	HP-12	3%	56%	82%	65%	2.1	2.1	1.0	4.3	
3044	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	SF	NLI	MO	18,430.7	68%	12,445.8	0.603	18	\$2,877	100%	50%	HP-7	26%	56%	82%	65%	2.9	2.9	1.0	5.9	
3045	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	SF	LI	MO	18,430.7	68%	12,445.8	0.603	18	\$2,877	100%	50%	HP-8	26%	56%	82%	65%	2.9	2.9	1.0	5.9	
3046	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	MF	NLI	MO	6,458.9	68%	4,394.0	0.402	18	\$1,918	100%	50%	HP-11	3%	56%	69%	65%	1.6	1.6	1.0	3.1	
3047	Residential	HVAC Equipment	Air Source Heat Pump 21 SEER - Furnace baseline	Residential HVAC	MF	LI	MO	6,458.9	68%	4,394.0	0.402	18	\$1,918	100%	50%	HP-12	3%	56%	82%	65%	1.6	1.6	1.0	3.1	
3048	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	18,430.7	62%	11,464.1	0.248	15	\$1,004	100%	50%	HP-7	26%	56%	82%	65%	6.5	6.5	1.0	13.7	
3049	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	18,430.7	62%	11,464.1	0.248	15	\$1,004	100%	50%	HP-8	26%	56%	82%	65%	6.5	6.5	1.0	13.7	
3050	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	6,458.9	63%	4,059.6	0.166	15	\$1,004	100%	50%	HP-11	3%	56%	69%	65%	2.4	2.4	1.0	4.8	
3051	Residential	HVAC Equipment	Ductless Heat Pump 17 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	6,458.9	63%	4,059.6	0.166	15	\$1,004	100%	50%	HP-12	3%	56%	82%	65%	2.4	2.4	1.0	4.8	
3052	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	18,430.7	63%	11,525.8	0.445	15	\$1,004	100%	50%	HP-7	26%	56%	82%	65%	6.7	6.7	1.0	13.7	
3053	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	18,430.7	63%	11,525.8	0.445	15	\$1,004	100%	50%	HP-8	26%	56%	82%	65%	6.7	6.7	1.0	13.7	
3054	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	6,458.9	63%	4,073.7	0.296	15	\$1,004	100%	50%	HP-11	3%	56%	69%	65%	2.5	2.5	1.0	4.9	
3055	Residential	HVAC Equipment	Ductless Heat Pump 19 SEER 9.5 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	6,458.9	63%	4,073.7	0.296	15	\$1,004	100%	50%	HP-12	3%	56%	82%	65%	2.5	2.5	1.0	4.9	
3056	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	18,430.7	65%	11,894.7	0.603	15	\$1,070	100%	50%	HP-7	26%	56%	82%	65%	6.6	6.6	1.0	13.3	
3057	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	18,430.7	65%	11,894.7	0.603	15	\$1,070	100%	50%	HP-8	26%	56%	82%	65%	6.6	6.6	1.0	13.3	

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3058	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	6,458.9	65%	4,198.4	0.402	15	\$1,070	100%	50%	HP-11	3%	56%	69%	65%	2.5	2.5	1.0	4.7
3059	Residential	HVAC Equipment	Ductless Heat Pump 21 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	6,458.9	65%	4,198.4	0.402	15	\$1,070	100%	50%	HP-12	3%	56%	82%	65%	2.5	2.5	1.0	4.7
3060	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	NLI	MO	18,430.7	65%	11,935.9	0.735	15	\$1,557	100%	50%	HP-7	26%	56%	82%	65%	4.6	4.6	1.0	9.2
3061	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	SF	LI	MO	18,430.7	65%	11,935.9	0.735	15	\$1,557	100%	50%	HP-8	26%	56%	82%	65%	4.6	4.6	1.0	9.2
3062	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	NLI	MO	6,458.9	65%	4,207.8	0.490	15	\$1,557	100%	50%	HP-11	3%	56%	69%	65%	1.7	1.7	1.0	3.2
3063	Residential	HVAC Equipment	Ductless Heat Pump 23 SEER 10.0 HSPF - Electric resistance baseline	Residential HVAC	MF	LI	MO	6,458.9	65%	4,207.8	0.490	15	\$1,557	100%	50%	HP-12	3%	56%	82%	65%	1.7	1.7	1.0	3.2
3064	Residential	HVAC Equipment	AC Tune Up	Home Energy Improvement	SF	NLI	Retrofit	663.3	5%	33.2	0.003	2	\$175	100%	50%	AC TUNE-1	62%	44%	82%	55%	0.0	0.0	1.0	0.0
3065	Residential	HVAC Equipment	AC Tune Up	Low Income	SF	LI	Retrofit	663.3	5%	33.2	0.003	2	\$175	100%	100%	AC TUNE-2	62%	44%	82%	60%	0.0	0.0	1.0	0.0
3066	Residential	HVAC Equipment	AC Tune Up	Home Energy Improvement	MF	NLI	Retrofit	152.0	5%	7.6	0.003	2	\$175	100%	50%	AC TUNE-5	62%	44%	68%	55%	0.0	0.0	1.0	0.0
3067	Residential	HVAC Equipment	AC Tune Up	Low Income	MF	LI	Retrofit	152.0	5%	7.6	0.003	2	\$175	100%	100%	AC TUNE-6	62%	44%	82%	60%	0.0	0.0	1.0	0.0
3068	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	SF	NLI	MO	663.3	13%	82.9	0.283	18	\$221	100%	50%	CAC-1	62%	50%	82%	60%	1.2	1.2	1.0	0.5
3069	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	SF	LI	MO	663.3	13%	82.9	0.283	18	\$221	100%	50%	CAC-2	62%	50%	82%	60%	1.2	1.2	1.0	0.5
3070	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	MF	NLI	MO	152.0	13%	19.0	0.189	18	\$221	100%	50%	CAC-5	62%	50%	68%	60%	0.8	0.8	1.0	0.1
3071	Residential	HVAC Equipment	Central Air Conditioner 16 SEER	Residential HVAC	MF	LI	MO	152.0	13%	19.0	0.189	18	\$221	100%	50%	CAC-6	62%	50%	82%	60%	0.8	0.8	1.0	0.1
3072	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	SF	NLI	MO	663.3	22%	147.4	0.503	18	\$620	100%	50%	CAC-1	62%	50%	82%	60%	0.8	0.8	1.0	0.3
3073	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	SF	LI	MO	663.3	22%	147.4	0.503	18	\$620	100%	50%	CAC-2	62%	50%	82%	60%	0.8	0.8	1.0	0.3
3074	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	MF	NLI	MO	152.0	22%	33.8	0.335	18	\$620	100%	50%	CAC-5	62%	50%	68%	60%	0.5	0.5	1.0	0.1
3075	Residential	HVAC Equipment	Central Air Conditioner 18 SEER	Residential HVAC	MF	LI	MO	152.0	22%	33.8	0.335	18	\$620	100%	50%	CAC-6	62%	50%	82%	60%	0.5	0.5	1.0	0.1
3076	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	SF	NLI	MO	663.3	33%	221.1	0.754	18	\$620	100%	50%	CAC-1	62%	50%	82%	60%	1.2	1.2	1.0	0.5
3077	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	SF	LI	MO	663.3	33%	221.1	0.754	18	\$620	100%	50%	CAC-2	62%	50%	82%	60%	1.2	1.2	1.0	0.5
3078	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	MF	NLI	MO	152.0	33%	50.7	0.503	18	\$620	100%	50%	CAC-5	62%	50%	68%	60%	0.7	0.7	1.0	0.1
3079	Residential	HVAC Equipment	Central Air Conditioner 21 SEER	Residential HVAC	MF	LI	MO	152.0	33%	50.7	0.503	18	\$620	100%	50%	CAC-6	62%	50%	82%	60%	0.7	0.7	1.0	0.1
3080	Residential	HVAC Equipment	Ductless AC	Residential HVAC	SF	NLI	MO	663.3	18%	117.0	0.399	18	\$365	100%	50%	CAC-1	62%	50%	82%	60%	1.1	1.1	1.0	0.4
3081	Residential	HVAC Equipment	Ductless AC	Residential HVAC	SF	LI	MO	663.3	18%	117.0	0.399	18	\$365	100%	50%	CAC-2	62%	50%	82%	60%	1.1	1.1	1.0	0.4
3082	Residential	HVAC Equipment	Ductless AC	Residential HVAC	MF	NLI	MO	152.0	18%	26.8	0.266	18	\$365	100%	50%	CAC-5	62%	50%	68%	60%	0.7	0.7	1.0	0.1
3083	Residential	HVAC Equipment	Ductless AC	Residential HVAC	MF	LI	MO	152.0	18%	26.8	0.266	18	\$365	100%	50%	CAC-6	62%	50%	82%	60%	0.7	0.7	1.0	0.1
3084	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Residential Marketplace	SF	NLI	Retrofit	11,289.3	6%	629.5	0.000	10	\$174	100%	50%	THERMOSTAT-1	3%	17%	82%	39%	1.5	1.5	1.0	3.2
3085	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Low Income	SF	LI	Retrofit	11,289.3	6%	629.5	0.000	10	\$174	100%	100%	THERMOSTAT-2	3%	17%	82%	60%	1.5	1.5	1.0	3.2
3086	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Residential Marketplace	MF	NLI	Retrofit	4,496.3	5%	246.7	0.000	10	\$174	100%	50%	THERMOSTAT-5	3%	17%	68%	33%	0.6	0.6	1.0	1.2
3087	Residential	HVAC Equipment	Smart Thermostat - Heat pump baseline	Low Income	MF	LI	Retrofit	4,496.3	5%	246.7	0.000	10	\$174	100%	100%	THERMOSTAT-6	3%	17%	82%	60%	0.6	0.6	1.0	1.2
3088	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Residential Marketplace	SF	NLI	Retrofit	18,430.7	5%	993.7	0.000	10	\$174	100%	50%	THERMOSTAT-7	26%	17%	82%	39%	2.4	2.4	1.0	5.0

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3089	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Low Income	SF	LI	Retrofit	18,430.7	5%	993.7	0.000	10	\$174	100%	100%	THERMOSTAT-8	26%	17%	82%	60%	2.4	2.4	1.0	5.0
3090	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Residential Marketplace	MF	NLI	Retrofit	6,458.9	5%	341.7	0.000	10	\$174	100%	50%	THERMOSTAT-11	26%	17%	68%	33%	0.8	0.8	1.0	1.7
3091	Residential	HVAC Equipment	Smart Thermostat - Furnace baseline	Low Income	MF	LI	Retrofit	6,458.9	5%	341.7	0.000	10	\$174	100%	100%	THERMOSTAT-12	26%	17%	82%	60%	0.8	0.8	1.0	1.7
3092	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Residential Marketplace	SF	NLI	Retrofit	1,247.3	9%	117.3	0.000	10	\$174	100%	50%	THERMOSTAT-13	22%	17%	82%	39%	1.7	1.7	1.0	4.1
3093	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Low Income	SF	LI	Retrofit	1,247.3	9%	117.3	0.000	10	\$174	100%	100%	THERMOSTAT-14	22%	17%	82%	60%	1.7	1.7	1.0	4.1
3094	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Residential Marketplace	MF	NLI	Retrofit	366.8	8%	31.0	0.000	10	\$174	100%	50%	THERMOSTAT-17	22%	17%	68%	33%	0.6	0.6	1.0	1.4
3095	Residential	HVAC Equipment	Smart Thermostat - Gas/CAC baseline	Low Income	MF	LI	Retrofit	366.8	8%	31.0	0.000	10	\$174	100%	100%	THERMOSTAT-18	22%	17%	82%	60%	0.6	0.6	1.0	1.4
3096	Residential	HVAC Equipment	ECM HVAC Motor	Residential HVAC	SF	N/A	Retrofit	11,289.3	2%	248.0	0.165	9	\$475	100%	50%	ECM-1	51%	50%	82%	60%	0.4	0.4	1.0	0.4
3097	Residential	HVAC Equipment	ECM HVAC Motor	Residential HVAC	MF	N/A	Retrofit	4,496.3	6%	248.0	0.165	9	\$475	100%	50%	ECM-5	51%	50%	68%	60%	0.4	0.4	1.0	0.4
3098	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Residential Marketplace	SF	NLI	MO	343.5	9%	31.5	0.076	9	\$43	100%	50%	RAC-1	30%	49%	82%	59%	1.2	1.2	1.0	0.6
3099	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Low Income	SF	LI	MO	343.5	9%	31.5	0.076	9	\$43	100%	100%	RAC-2	30%	49%	82%	60%	1.2	1.2	1.0	0.6
3100	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Residential Marketplace	MF	NLI	MO	343.5	9%	31.5	0.076	9	\$43	100%	50%	RAC-5	30%	49%	68%	59%	1.2	1.2	1.0	0.6
3101	Residential	HVAC Equipment	ENERGY STAR Room Air Conditioner	Low Income	MF	LI	MO	343.5	9%	31.5	0.076	9	\$43	100%	100%	RAC-6	30%	49%	82%	60%	1.2	1.2	1.0	0.6
3102	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	SF	NLI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-1	6%	20%	82%	39%	4.3	4.3	1.0	2.1
3103	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	SF	LI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-2	6%	20%	82%	36%	4.3	4.3	1.0	2.1
3104	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	MF	NLI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-5	6%	20%	68%	36%	4.3	4.3	1.0	2.1
3105	Residential	HVAC Equipment	Room Air Conditioner Recycling	Appliance Recycling	MF	LI	Recycle	343.5	100%	343.5	0.826	4	\$65	100%	50%	RR-6	6%	20%	82%	36%	4.3	4.3	1.0	2.1
3106	Residential	HVAC Equipment	Smart Vents/Sensors - Gas/CAC baseline	Emerging Technology	SF	N/A	Retrofit	1,247.3	5%	62.4	0.113	15	\$1,625	100%	50%	SVS-1	22%	3%	65%	23%	0.2	0.2	1.0	0.3
3107	Residential	HVAC Equipment	Smart Vents/Sensors - Gas/CAC baseline	Emerging Technology	MF	N/A	Retrofit	366.8	5%	18.3	0.075	15	\$1,040	100%	50%	SVS-5	22%	3%	65%	23%	0.1	0.1	1.0	0.2
3108	Residential	HVAC Equipment	Smart Vents/Sensors - Heat pump baseline	Emerging Technology	SF	N/A	Retrofit	11,289.3	5%	564.5	0.113	15	\$1,625	100%	50%	SVS-7	3%	3%	65%	23%	0.2	0.2	1.0	0.4
3109	Residential	HVAC Equipment	Smart Vents/Sensors - Heat pump baseline	Emerging Technology	MF	N/A	Retrofit	4,496.3	5%	224.8	0.075	15	\$1,040	100%	50%	SVS-11	3%	3%	65%	23%	0.2	0.2	1.0	0.3
3110	Residential	HVAC Equipment	Smart Vents/Sensors - Furnace baseline	Emerging Technology	SF	N/A	Retrofit	18,430.7	5%	921.5	0.113	15	\$1,625	100%	50%	SVS-13	26%	3%	65%	23%	0.4	0.4	1.0	0.7
3111	Residential	HVAC Equipment	Smart Vents/Sensors - Furnace baseline	Emerging Technology	MF	N/A	Retrofit	6,458.9	5%	322.9	0.075	15	\$1,040	100%	50%	SVS-18	26%	3%	65%	23%	0.2	0.2	1.0	0.4
3112	Residential	HVAC Equipment	Energy Recovery Ventilator	Emerging Technology	SF	N/A	Retrofit	11,289.3	40%	4,515.7	0.348	15	\$3,000	100%	50%	ERV-1	51%	0%	65%	23%	0.9	0.9	1.0	1.8
3113	Residential	HVAC Equipment	Energy Recovery Ventilator	Emerging Technology	MF	N/A	Retrofit	4,496.3	40%	1,798.5	0.138	15	\$3,000	100%	50%	ERV-5	51%	0%	65%	23%	0.4	0.4	1.0	0.7
3114	Residential	HVAC Equipment	Whole House Attic Fan	Residential HVAC	SF	N/A	Retrofit	663.3	18%	119.4	0.407	15	\$711	100%	50%	WHAF-1	62%	20%	82%	39%	0.5	0.5	1.0	0.2
3115	Residential	HVAC Equipment	Whole House Attic Fan	Residential HVAC	MF	N/A	Retrofit	152.0	18%	27.4	0.407	15	\$711	100%	50%	WHAF-5	62%	20%	68%	36%	0.5	0.5	1.0	0.0
3116	Residential	HVAC Equipment	Attic Fan	Residential HVAC	SF	N/A	Retrofit	663.3	8%	53.1	0.181	15	\$125	100%	50%	WHAF-1	62%	20%	82%	39%	1.3	1.3	1.0	0.5
3117	Residential	HVAC Equipment	Attic Fan	Residential HVAC	MF	N/A	Retrofit	152.0	8%	12.2	0.181	15	\$125	100%	50%	WHAF-6	62%	20%	68%	36%	1.2	1.2	1.0	0.1
4001	Residential	Lighting	9W LED	Residential Marketplace	SF	NLI	MO	23.5	48%	11.3	0.012	16	\$5	100%	50%	STAN-1	3003%	59%	86%	67%	4.8	4.8	1.0	2.9
4002	Residential	Lighting	9W LED	Low Income	SF	LI	MO	23.5	48%	11.3	0.012	16	\$5	100%	100%	STAN-2	3003%	59%	75%	67%	4.8	4.8	1.0	2.9

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4003	Residential	Lighting	9W LED	Residential Marketplace	MF	NLI	MO	23.5	48%	11.3	0.012	16	\$5	100%	50%	STAN-5	1915%	59%	71%	67%	4.8	4.8	1.0	2.9	
4004	Residential	Lighting	9W LED	Low Income	MF	LI	MO	23.5	48%	11.3	0.012	16	\$5	100%	100%	STAN-6	1915%	59%	75%	67%	4.8	4.8	1.0	2.9	
4005	Residential	Lighting	13W LED	Residential Marketplace	SF	NLI	MO	16.9	50%	8.4	0.009	16	\$9	100%	50%	STAN-1	3003%	59%	86%	67%	2.0	2.0	1.0	1.2	
4006	Residential	Lighting	13W LED	Low Income	SF	LI	MO	16.9	50%	8.4	0.009	16	\$9	100%	100%	STAN-2	3003%	59%	75%	67%	2.0	2.0	1.0	1.2	
4007	Residential	Lighting	13W LED	Residential Marketplace	MF	NLI	MO	16.9	50%	8.4	0.009	16	\$9	100%	50%	STAN-5	1915%	59%	71%	67%	2.0	2.0	1.0	1.2	
4008	Residential	Lighting	13W LED	Low Income	MF	LI	MO	16.9	50%	8.4	0.009	16	\$9	100%	100%	STAN-6	1915%	59%	75%	67%	2.0	2.0	1.0	1.2	
4009	Residential	Lighting	LED 5W Globe	Residential Marketplace	SF	NLI	MO	15.0	56%	8.4	0.009	16	\$5	100%	50%	REFLECTOR-1	738%	59%	86%	67%	3.6	3.6	1.0	2.2	
4010	Residential	Lighting	LED 5W Globe	Low Income	SF	LI	MO	15.0	56%	8.4	0.009	16	\$5	100%	100%	REFLECTOR-2	738%	59%	75%	67%	3.6	3.6	1.0	2.2	
4011	Residential	Lighting	LED 5W Globe	Residential Marketplace	MF	NLI	MO	15.0	56%	8.4	0.009	16	\$5	100%	50%	REFLECTOR-5	471%	59%	71%	67%	3.6	3.6	1.0	2.2	
4012	Residential	Lighting	LED 5W Globe	Low Income	MF	LI	MO	15.0	56%	8.4	0.009	16	\$5	100%	100%	REFLECTOR-6	471%	59%	75%	67%	3.6	3.6	1.0	2.2	
4013	Residential	Lighting	LED R30 Dimmable	Residential Marketplace	SF	NLI	MO	11.3	58%	6.6	0.007	20	\$4	100%	50%	SPECIALTY-1	446%	59%	86%	67%	4.1	4.1	1.0	2.6	
4014	Residential	Lighting	LED R30 Dimmable	Low Income	SF	LI	MO	11.3	58%	6.6	0.007	20	\$4	100%	100%	SPECIALTY-2	446%	59%	75%	67%	4.1	4.1	1.0	2.6	
4015	Residential	Lighting	LED R30 Dimmable	Residential Marketplace	MF	NLI	MO	11.3	58%	6.6	0.007	20	\$4	100%	50%	SPECIALTY-5	284%	59%	71%	67%	4.1	4.1	1.0	2.6	
4016	Residential	Lighting	LED R30 Dimmable	Low Income	MF	LI	MO	11.3	58%	6.6	0.007	20	\$4	100%	100%	SPECIALTY-6	284%	59%	75%	67%	4.1	4.1	1.0	2.6	
4017	Residential	Lighting	LED Nightlights	Residential Marketplace	SF	NLI	MO	14.6	93%	13.6	0.000	12	\$3	100%	50%	NIGHT-1	40%	59%	86%	67%	1.3	1.3	1.0	4.6	
4018	Residential	Lighting	LED Nightlights	Low Income	SF	LI	MO	14.6	93%	13.6	0.000	12	\$3	100%	100%	NIGHT-2	40%	59%	75%	67%	1.3	1.3	1.0	4.6	
4019	Residential	Lighting	LED Nightlights	Residential Marketplace	MF	NLI	MO	14.6	93%	13.6	0.000	12	\$3	100%	50%	NIGHT-5	40%	59%	71%	67%	1.3	1.3	1.0	4.6	
4020	Residential	Lighting	LED Nightlights	Low Income	MF	LI	MO	14.6	93%	13.6	0.000	12	\$3	100%	100%	NIGHT-6	40%	59%	75%	67%	1.3	1.3	1.0	4.6	
4021	Residential	Lighting	Exterior LED Lamp	Residential Marketplace	SF	NLI	MO	205.5	72%	141.3	0.077	8	\$40	100%	50%	ELL-1	503%	59%	86%	67%	2.7	2.7	1.0	2.6	
4022	Residential	Lighting	Exterior LED Lamp	Low Income	SF	LI	MO	205.5	72%	141.3	0.077	8	\$40	100%	100%	ELL-2	503%	59%	75%	67%	2.7	2.7	1.0	2.6	
4023	Residential	Lighting	Exterior LED Lamp	Residential Marketplace	MF	NLI	MO	205.5	72%	141.3	0.077	8	\$40	100%	50%	ELL-5	289%	59%	71%	67%	2.7	2.7	1.0	2.6	
4024	Residential	Lighting	Exterior LED Lamp	Low Income	MF	LI	MO	205.5	72%	141.3	0.077	8	\$40	100%	100%	ELL-6	289%	59%	75%	67%	2.7	2.7	1.0	2.6	
4025	Residential	Lighting	Linear LED	Residential Marketplace	SF	NLI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-1	509%	59%	86%	67%	2.3	2.3	1.0	2.1	
4026	Residential	Lighting	Linear LED	Residential Marketplace	SF	LI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-2	509%	59%	75%	67%	2.3	2.3	1.0	2.1	
4027	Residential	Lighting	Linear LED	Residential Marketplace	MF	NLI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-5	325%	59%	71%	67%	2.3	2.3	1.0	2.1	
4028	Residential	Lighting	Linear LED	Residential Marketplace	MF	LI	MO	23.5	44%	10.3	0.014	19	\$7	100%	50%	LINEAR-6	325%	59%	75%	67%	2.3	2.3	1.0	2.1	
4029	Residential	Lighting	Smart LED	Emerging Technology	SF	NLI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-1	3003%	59%	71%	67%	0.4	0.4	1.0	1.4	
4030	Residential	Lighting	Smart LED	Emerging Technology	SF	LI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-2	3003%	59%	71%	67%	0.4	0.4	1.0	1.4	
4031	Residential	Lighting	Smart LED	Emerging Technology	MF	NLI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-5	1915%	59%	71%	67%	0.4	0.4	1.0	1.4	
4032	Residential	Lighting	Smart LED	Emerging Technology	MF	LI	MO	19.1	10%	2.0	0.000	19	\$2	100%	50%	STAN-6	1915%	59%	71%	67%	0.4	0.4	1.0	1.4	
4033	Residential	Lighting	LED Fixture	Residential Marketplace	SF	NLI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-1	3003%	59%	86%	67%	2.6	2.6	1.0	1.6	

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Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
4034	Residential	Lighting	LED Fixture	Residential Marketplace	SF	LI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-2	3003%	59%	75%	67%	2.6	2.6	1.0	1.6
4035	Residential	Lighting	LED Fixture	Residential Marketplace	MF	NLI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-5	1915%	59%	71%	67%	2.6	2.6	1.0	1.6
4036	Residential	Lighting	LED Fixture	Residential Marketplace	MF	LI	MO	31.9	56%	17.8	0.019	20	\$16	100%	50%	STAN-6	1915%	59%	75%	67%	2.6	2.6	1.0	1.6
4037	Residential	Lighting	Occupancy Sensor	Residential Marketplace	SF	N/A	Retrofit	124.4	30%	37.1	0.046	10	\$40	100%	50%	OCC-1	1047%	31%	86%	45%	0.9	0.9	1.0	0.8
4038	Residential	Lighting	Occupancy Sensor	Residential Marketplace	MF	N/A	Retrofit	124.4	30%	37.1	0.046	10	\$40	100%	50%	OCC-5	1047%	31%	67%	45%	0.9	0.9	1.0	0.8
4039	Residential	Lighting	Smart Lighting Switch	Emerging Technology	SF	N/A	Retrofit	124.4	17%	21.2	0.047	10	\$43	100%	50%	OCC-1	1047%	31%	65%	45%	0.8	0.8	1.0	0.4
4040	Residential	Lighting	Smart Lighting Switch	Emerging Technology	MF	N/A	Retrofit	124.4	17%	21.2	0.047	10	\$43	100%	50%	OCC-5	1047%	31%	65%	45%	0.8	0.8	1.0	0.4
4041	Residential	Lighting	Exterior Lighting Controls	Residential Marketplace	SF	N/A	Retrofit	146.1	44%	64.5	0.026	10	\$30	100%	50%	ELC-1	252%	31%	86%	45%	1.1	1.1	1.0	1.9
4042	Residential	Lighting	Exterior Lighting Controls	Residential Marketplace	MF	N/A	Retrofit	146.1	44%	64.5	0.026	10	\$30	100%	50%	ELC-5	252%	31%	67%	45%	1.1	1.1	1.0	1.9
5001	Residential	Pool/Pump	Heat Pump Pool Heater	Emerging Technology	SF	N/A	MO	2,364.4	52%	1,233.7	0.000	8	\$1,250	100%	50%	HPPH-1	0%	12%	65%	30%	0.2	0.2	1.0	0.7
5002	Residential	Pool/Pump	Variable Speed Pool Pump	Residential Marketplace	SF	N/A	MO	1,167.0	26%	715.0	0.190	10	\$809	100%	50%	POOL-1	1%	25%	86%	40%	0.5	0.5	1.0	0.8
5003	Residential	Pool/Pump	Well Pump	Residential Marketplace	SF	N/A	MO	411.2	33%	135.7	0.015	20	\$110	100%	50%	WELL-1	4%	25%	86%	40%	0.6	0.6	1.0	1.8
6001	Residential	New Construction	ENERGY STAR New Home	Residential New Construction	SF	N/A	NC	9,848.0	25%	2,462.0	0.281	20	\$1,216	100%	50%	NC-1	100%	60%	84%	68%	1.3	1.3	1.0	3.0
6002	Residential	New Construction	ENERGY STAR New Home	Residential New Construction	MF	N/A	NC	9,848.0	25%	2,462.0	0.281	20	\$1,216	100%	50%	NC-3	100%	60%	72%	68%	1.3	1.3	1.0	3.0
7001	Residential	Plug Load	Smart Power Strips - Tier 1	Residential Marketplace	SF	NLI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	50%	SPS-1	100%	8%	86%	37%	1.0	1.0	1.0	2.2
7002	Residential	Plug Load	Smart Power Strips - Tier 1	Low Income	SF	LI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	100%	SPS-2	100%	8%	75%	55%	1.0	1.0	1.0	2.2
7003	Residential	Plug Load	Smart Power Strips - Tier 1	Residential Marketplace	MF	NLI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	50%	SPS-5	100%	8%	67%	29%	1.0	1.0	1.0	2.2
7004	Residential	Plug Load	Smart Power Strips - Tier 1	Low Income	MF	LI	Retrofit	466.0	15%	67.6	0.009	7	\$20	100%	100%	SPS-6	100%	8%	75%	55%	1.0	1.0	1.0	2.2
7005	Residential	Plug Load	Smart Power Strips - Tier 2	Residential Marketplace	SF	NLI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	50%	SPS-1	100%	8%	86%	37%	0.6	0.6	1.0	1.2
7006	Residential	Plug Load	Smart Power Strips - Tier 2	Low Income	SF	LI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	100%	SPS-2	100%	8%	75%	55%	0.6	0.6	1.0	1.2
7007	Residential	Plug Load	Smart Power Strips - Tier 2	Residential Marketplace	MF	NLI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	50%	SPS-5	100%	8%	67%	29%	0.6	0.6	1.0	1.2
7008	Residential	Plug Load	Smart Power Strips - Tier 2	Low Income	MF	LI	Retrofit	466.0	25%	117.5	0.015	8	\$70	100%	100%	SPS-6	100%	8%	75%	55%	0.6	0.6	1.0	1.2
8001	Residential	Shell	Duct Sealing - Average Sealing - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	11,289.3	3%	345.8	0.187	20	\$450	100%	50%	DUCT-1	3%	76%	84%	81%	0.9	0.9	1.0	1.1
8002	Residential	Shell	Duct Sealing - Average Sealing - Heat pump	Low Income	SF	LI	Retrofit	11,289.3	3%	345.8	0.187	20	\$450	100%	100%	DUCT-2	3%	76%	83%	81%	0.9	0.9	1.0	1.1
8003	Residential	Shell	Duct Sealing - Average Sealing - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,430.7	3%	564.6	0.306	20	\$450	100%	50%	DUCT-13	26%	76%	84%	81%	1.4	1.4	1.0	1.8
8004	Residential	Shell	Duct Sealing - Average Sealing - Electric furnace	Low Income	SF	LI	Retrofit	18,430.7	3%	564.6	0.306	20	\$450	100%	100%	DUCT-14	26%	76%	83%	81%	1.4	1.4	1.0	1.8
8005	Residential	Shell	Duct Sealing - Average Sealing - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,247.3	5%	59.6	0.032	20	\$450	100%	50%	DUCT-25	22%	76%	84%	81%	0.6	0.6	1.0	1.3
8006	Residential	Shell	Duct Sealing - Average Sealing - Gas Heating	Low Income	SF	LI	Retrofit	1,247.3	5%	59.6	0.032	20	\$450	100%	100%	DUCT-26	22%	76%	83%	81%	0.6	0.6	1.0	1.3
8007	Residential	Shell	Wall Insulation - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	11,289.3	9%	1,007.0	0.546	20	\$2,254	100%	50%	WALL-1	3%	80%	86%	84%	0.5	0.5	1.0	0.7
8008	Residential	Shell	Wall Insulation - Heat pump	Low Income	SF	LI	Retrofit	11,289.3	9%	1,007.0	0.546	20	\$2,254	100%	100%	WALL-2	3%	80%	86%	84%	0.5	0.5	1.0	0.7
8009	Residential	Shell	Wall Insulation - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	4,496.3	9%	401.1	0.217	20	\$969	100%	50%	WALL-5	26%	80%	86%	84%	0.5	0.5	1.0	0.6

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8010	Residential	Shell	Wall Insulation - Heat pump	Low Income Home Energy Improvement	MF	LI	Retrofit	4,496.3	9%	401.1	0.217	20	\$969	100%	100%	WALL-6	26%	80%	86%	84%	0.5	0.5	1.0	0.6
8011	Residential	Shell	Wall Insulation - Electric furnace		SF	NLI	Retrofit	18,430.7	9%	1,644.0	0.891	20	\$2,254	100%	50%	WALL-7	26%	80%	86%	84%	0.8	0.8	1.0	1.1
8012	Residential	Shell	Wall Insulation - Electric furnace	Low Income Home Energy Improvement	SF	LI	Retrofit	18,430.7	9%	1,644.0	0.891	20	\$2,254	100%	100%	WALL-8	26%	80%	86%	84%	0.8	0.8	1.0	1.1
8013	Residential	Shell	Wall Insulation - Electric furnace		MF	NLI	Retrofit	6,458.9	9%	576.1	0.312	20	\$969	100%	50%	WALL-11	26%	80%	86%	84%	0.7	0.7	1.0	0.9
8014	Residential	Shell	Wall Insulation - Electric furnace	Low Income Home Energy Improvement	MF	LI	Retrofit	6,458.9	9%	576.1	0.312	20	\$969	100%	100%	WALL-12	26%	80%	86%	84%	0.7	0.7	1.0	0.9
8015	Residential	Shell	Wall Insulation - Gas Heating		SF	NLI	Retrofit	1,247.3	4%	48.2	0.026	20	\$2,254	100%	50%	WALL-13	22%	80%	86%	84%	0.1	0.1	1.0	0.2
8016	Residential	Shell	Wall Insulation - Gas Heating	Low Income Home Energy Improvement	SF	LI	Retrofit	1,247.3	4%	48.2	0.026	20	\$2,254	100%	100%	WALL-14	22%	80%	86%	84%	0.1	0.1	1.0	0.2
8017	Residential	Shell	Wall Insulation - Gas Heating		MF	NLI	Retrofit	366.8	4%	14.2	0.008	20	\$969	100%	50%	WALL-17	22%	80%	86%	84%	0.1	0.1	1.0	0.2
8018	Residential	Shell	Wall Insulation - Gas Heating	Low Income Home Energy Improvement	MF	LI	Retrofit	366.8	4%	14.2	0.008	20	\$969	100%	100%	WALL-18	22%	80%	86%	84%	0.1	0.1	1.0	0.2
8019	Residential	Shell	Air Sealing Average Sealing - Heat pump		SF	NLI	Retrofit	11,289.3	11%	1,267.3	0.687	20	\$200	100%	50%	AIR-1	3%	76%	84%	81%	7.3	7.3	1.0	9.2
8020	Residential	Shell	Air Sealing Average Sealing - Heat pump	Low Income Home Energy Improvement	SF	LI	Retrofit	11,289.3	11%	1,267.3	0.687	20	\$200	100%	100%	AIR-2	3%	76%	83%	81%	7.3	7.3	1.0	9.2
8021	Residential	Shell	Air Sealing Average Sealing - Heat pump		MF	NLI	Retrofit	4,496.3	11%	504.7	0.274	20	\$200	100%	50%	AIR-5	3%	76%	83%	81%	2.9	2.9	1.0	3.7
8022	Residential	Shell	Air Sealing Average Sealing - Heat pump	Low Income Home Energy Improvement	MF	LI	Retrofit	4,496.3	11%	504.7	0.274	20	\$200	100%	100%	AIR-6	3%	76%	83%	81%	2.9	2.9	1.0	3.7
8023	Residential	Shell	Air Sealing Average Sealing - Electric furnace		SF	NLI	Retrofit	18,430.7	14%	2,521.4	1.366	20	\$200	100%	50%	AIR-19	26%	76%	84%	81%	14.5	14.5	1.0	18.4
8024	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Low Income Home Energy Improvement	SF	LI	Retrofit	18,430.7	14%	2,521.4	1.366	20	\$200	100%	100%	AIR-20	26%	76%	83%	81%	14.5	14.5	1.0	18.4
8025	Residential	Shell	Air Sealing Average Sealing - Electric furnace		MF	NLI	Retrofit	6,458.9	14%	883.6	0.479	20	\$200	100%	50%	AIR-23	26%	76%	83%	81%	5.1	5.1	1.0	6.4
8026	Residential	Shell	Air Sealing Average Sealing - Electric furnace	Low Income Home Energy Improvement	MF	LI	Retrofit	6,458.9	14%	883.6	0.479	20	\$200	100%	100%	AIR-24	26%	76%	83%	81%	5.1	5.1	1.0	6.4
8027	Residential	Shell	Air Sealing - Average Sealing - Gas Heating		SF	NLI	Retrofit	1,247.3	7%	87.8	0.048	20	\$200	100%	50%	AIR-37	22%	76%	84%	81%	2.0	2.0	1.0	4.4
8028	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Low Income Home Energy Improvement	SF	LI	Retrofit	1,247.3	7%	87.8	0.048	20	\$200	100%	100%	AIR-38	22%	76%	83%	81%	2.0	2.0	1.0	4.4
8029	Residential	Shell	Air Sealing - Average Sealing - Gas Heating		MF	NLI	Retrofit	366.8	7%	25.8	0.014	20	\$200	100%	50%	AIR-41	22%	76%	83%	81%	0.8	0.8	1.0	1.8
8030	Residential	Shell	Air Sealing - Average Sealing - Gas Heating	Low Income Home Energy Improvement	MF	LI	Retrofit	366.8	7%	25.8	0.014	20	\$200	100%	100%	AIR-42	22%	76%	83%	81%	0.8	0.8	1.0	1.8
8031	Residential	Shell	Attic Insulation - Average Insulation - Heat pump		SF	NLI	Retrofit	11,289.3	3%	337.5	0.183	20	\$898	100%	50%	ATTIC-1	3%	73%	84%	78%	0.4	0.4	1.0	0.5
8032	Residential	Shell	Attic Insulation - Average Insulation - Heat pump	Low Income Home Energy Improvement	SF	LI	Retrofit	11,289.3	3%	337.5	0.183	20	\$898	100%	100%	ATTIC-2	3%	73%	82%	78%	0.4	0.4	1.0	0.5
8033	Residential	Shell	Attic Insulation - Average Insulation - Electric furnace		SF	NLI	Retrofit	18,430.7	3%	551.0	0.299	20	\$898	100%	50%	ATTIC-7	26%	73%	84%	78%	0.7	0.7	1.0	0.9
8034	Residential	Shell	Attic Insulation - Average Insulation - Electric furnace	Low Income Home Energy Improvement	SF	LI	Retrofit	18,430.7	3%	551.0	0.299	20	\$898	100%	100%	ATTIC-8	26%	73%	82%	78%	0.7	0.7	1.0	0.9
8035	Residential	Shell	Attic Insulation - Average Insulation - Gas Heating		SF	NLI	Retrofit	1,247.3	2%	26.7	0.014	20	\$898	100%	50%	ATTIC-13	22%	73%	84%	78%	0.1	0.1	1.0	0.3
8036	Residential	Shell	Attic Insulation - Average Insulation - Gas Heating	Low Income Home Energy Improvement	SF	LI	Retrofit	1,247.3	2%	26.7	0.014	20	\$898	100%	100%	ATTIC-14	22%	73%	82%	78%	0.1	0.1	1.0	0.3
8037	Residential	Shell	ENERGY STAR Windows - Heat pump		SF	NLI	Retrofit	11,289.3	6%	696.8	0.378	20	\$11,300	100%	50%	WINDOW-1	3%	70%	84%	76%	0.1	0.1	1.0	0.1
8038	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	SF	LI	Retrofit	11,289.3	6%	696.8	0.378	20	\$11,300	100%	50%	WINDOW-2	3%	70%	82%	76%	0.1	0.1	1.0	0.1
8039	Residential	Shell	ENERGY STAR Windows - Heat pump		MF	NLI	Retrofit	4,496.3	6%	277.5	0.150	20	\$7,232	100%	50%	WINDOW-5	3%	70%	79%	76%	0.0	0.0	1.0	0.1
8040	Residential	Shell	ENERGY STAR Windows - Heat pump	Home Energy Improvement	MF	LI	Retrofit	4,496.3	6%	277.5	0.150	20	\$7,232	100%	50%	WINDOW-6	3%	70%	82%	76%	0.0	0.0	1.0	0.1

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Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
8041	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,430.7	5%	945.7	0.513	20	\$11,300	100%	50%	WINDOW-7	26%	70%	84%	76%	0.1	0.1	1.0	0.1
8042	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	SF	LI	Retrofit	18,430.7	5%	945.7	0.513	20	\$11,300	100%	50%	WINDOW-8	26%	70%	82%	76%	0.1	0.1	1.0	0.1
8043	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	6,458.9	5%	331.4	0.180	20	\$7,232	100%	50%	WINDOW-11	26%	70%	79%	76%	0.1	0.1	1.0	0.1
8044	Residential	Shell	ENERGY STAR Windows - Electric furnace	Home Energy Improvement	MF	LI	Retrofit	6,458.9	5%	331.4	0.180	20	\$7,232	100%	50%	WINDOW-12	26%	70%	82%	76%	0.1	0.1	1.0	0.1
8045	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,247.3	6%	70.2	0.038	20	\$11,300	100%	50%	WINDOW-13	22%	70%	84%	76%	0.0	0.0	1.0	0.1
8046	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	SF	LI	Retrofit	1,247.3	6%	70.2	0.038	20	\$11,300	100%	50%	WINDOW-14	22%	70%	82%	76%	0.0	0.0	1.0	0.1
8047	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	366.8	6%	20.7	0.011	20	\$7,232	100%	50%	WINDOW-17	22%	70%	79%	76%	0.0	0.0	1.0	0.0
8048	Residential	Shell	ENERGY STAR Windows - Gas Heating	Home Energy Improvement	MF	LI	Retrofit	366.8	6%	20.7	0.011	20	\$7,232	100%	50%	WINDOW-18	22%	70%	82%	76%	0.0	0.0	1.0	0.0
8049	Residential	Shell	Basement Sidewall Insulation - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	11,289.3	6%	621.3	0.337	20	\$696	100%	50%	BASEMENT-1	3%	80%	86%	84%	1.0	1.0	1.0	1.3
8050	Residential	Shell	Basement Sidewall Insulation - Heat pump	Low Income	SF	LI	Retrofit	11,289.3	6%	621.3	0.337	20	\$696	100%	100%	BASEMENT-2	3%	80%	86%	84%	1.0	1.0	1.0	1.3
8051	Residential	Shell	Basement Sidewall Insulation - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,430.7	6%	1,014.3	0.550	20	\$696	100%	50%	BASEMENT-3	26%	80%	86%	84%	1.7	1.7	1.0	2.1
8052	Residential	Shell	Basement Sidewall Insulation - Electric furnace	Low Income	SF	LI	Retrofit	18,430.7	6%	1,014.3	0.550	20	\$696	100%	100%	BASEMENT-4	26%	80%	86%	84%	1.7	1.7	1.0	2.1
8053	Residential	Shell	Basement Sidewall Insulation - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,247.3	6%	68.6	0.037	20	\$696	100%	50%	BASEMENT-5	22%	80%	86%	84%	0.4	0.4	1.0	1.0
8054	Residential	Shell	Basement Sidewall Insulation - Gas Heating	Low Income	SF	LI	Retrofit	1,247.3	6%	68.6	0.037	20	\$696	100%	100%	BASEMENT-6	22%	80%	86%	84%	0.4	0.4	1.0	1.0
8055	Residential	Shell	Floor Insulation Above Crawspace - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	11,289.3	1%	66.0	0.036	25	\$772	100%	50%	CRAWL-1	3%	80%	86%	84%	0.1	0.1	1.0	0.1
8056	Residential	Shell	Floor Insulation Above Crawspace - Heat pump	Low Income	SF	LI	Retrofit	11,289.3	1%	66.0	0.036	25	\$476	100%	100%	CRAWL-2	3%	80%	86%	84%	0.2	0.2	1.0	0.2
8057	Residential	Shell	Floor Insulation Above Crawspace - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,430.7	1%	107.7	0.058	25	\$772	100%	50%	CRAWL-5	26%	80%	86%	84%	0.2	0.2	1.0	0.2
8058	Residential	Shell	Floor Insulation Above Crawspace - Electric furnace	Low Income	SF	LI	Retrofit	18,430.7	1%	107.7	0.058	25	\$476	100%	100%	CRAWL-6	26%	80%	86%	84%	0.3	0.3	1.0	0.4
8059	Residential	Shell	Floor Insulation Above Crawspace - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,247.3	1%	7.3	0.004	25	\$772	100%	50%	CRAWL-9	22%	80%	86%	84%	0.0	0.0	1.0	0.1
8060	Residential	Shell	Floor Insulation Above Crawspace - Gas Heating	Low Income	SF	LI	Retrofit	1,247.3	1%	7.3	0.004	25	\$476	100%	100%	CRAWL-10	22%	80%	86%	84%	0.1	0.1	1.0	0.2
8061	Residential	Shell	ENERGY STAR Door - Heat pump	Home Energy Improvement	SF	NLI	Retrofit	11,289.3	5%	555.1	0.301	20	\$1,275	100%	50%	DOOR-1	3%	75%	84%	80%	0.5	0.5	1.0	0.6
8062	Residential	Shell	ENERGY STAR Door - Heat pump	Low Income	SF	LI	Retrofit	11,289.3	5%	555.1	0.301	20	\$1,275	100%	100%	DOOR-2	3%	75%	82%	80%	0.5	0.5	1.0	0.6
8063	Residential	Shell	ENERGY STAR Door - Heat pump	Home Energy Improvement	MF	NLI	Retrofit	4,496.3	5%	221.1	0.120	20	\$1,275	100%	50%	DOOR-5	3%	75%	82%	80%	0.2	0.2	1.0	0.3
8064	Residential	Shell	ENERGY STAR Door - Heat pump	Low Income	MF	LI	Retrofit	4,496.3	5%	221.1	0.120	20	\$1,275	100%	100%	DOOR-6	3%	75%	82%	80%	0.2	0.2	1.0	0.3
8065	Residential	Shell	ENERGY STAR Door - Electric furnace	Home Energy Improvement	SF	NLI	Retrofit	18,430.7	2%	304.7	0.165	20	\$1,275	100%	50%	DOOR-7	26%	75%	84%	80%	0.3	0.3	1.0	0.3
8066	Residential	Shell	ENERGY STAR Door - Electric furnace	Low Income	SF	LI	Retrofit	18,430.7	2%	304.7	0.165	20	\$1,275	100%	100%	DOOR-8	26%	75%	82%	80%	0.3	0.3	1.0	0.3
8067	Residential	Shell	ENERGY STAR Door - Electric furnace	Home Energy Improvement	MF	NLI	Retrofit	6,458.9	2%	106.8	0.058	20	\$1,275	100%	50%	DOOR-11	26%	75%	82%	80%	0.1	0.1	1.0	0.1
8068	Residential	Shell	ENERGY STAR Door - Electric furnace	Low Income	MF	LI	Retrofit	6,458.9	2%	106.8	0.058	20	\$1,275	100%	100%	DOOR-12	26%	75%	82%	80%	0.1	0.1	1.0	0.1
8069	Residential	Shell	ENERGY STAR Door - Gas Heating	Home Energy Improvement	SF	NLI	Retrofit	1,247.3	1%	10.9	0.006	20	\$1,275	100%	50%	DOOR-13	22%	75%	84%	80%	0.0	0.0	1.0	0.1
8070	Residential	Shell	ENERGY STAR Door - Gas Heating	Low Income	SF	LI	Retrofit	1,247.3	1%	10.9	0.006	20	\$1,275	100%	100%	DOOR-14	22%	75%	82%	80%	0.0	0.0	1.0	0.1
8071	Residential	Shell	ENERGY STAR Door - Gas Heating	Home Energy Improvement	MF	NLI	Retrofit	366.8	1%	3.2	0.002	20	\$1,275	100%	50%	DOOR-17	22%	75%	82%	80%	0.0	0.0	1.0	0.0

Residential Measure Summary

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
8072	Residential	Shell	ENERGY STAR Door - Gas Heating	Low Income	MF	LI	Retrofit	366.8	1%	3.2	0.002	20	\$1,275	100%	100%	DOOR-18	22%	75%	82%	80%	0.0	0.0	1.0	0.0
8073	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	SF	NLI	Retrofit	11,289.3	16%	1,749.8	0.948	7	\$6,780	100%	50%	SWC-1	3%	70%	79%	76%	0.1	0.1	1.0	0.2
8074	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	SF	LI	Retrofit	11,289.3	16%	1,749.8	0.948	7	\$6,780	100%	50%	SWC-2	3%	70%	79%	76%	0.1	0.1	1.0	0.2
8075	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	MF	NLI	Retrofit	4,496.3	16%	696.9	0.378	7	\$4,339	100%	50%	SWC-5	3%	70%	79%	76%	0.1	0.1	1.0	0.1
8076	Residential	Shell	Smart Window Coverings - Film/Transformer - Heat pump	Emerging Technology	MF	LI	Retrofit	4,496.3	16%	696.9	0.378	7	\$4,339	100%	50%	SWC-6	3%	70%	79%	76%	0.1	0.1	1.0	0.1
8077	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	SF	NLI	Retrofit	18,430.7	16%	2,856.8	1.548	7	\$6,780	100%	50%	SWC-7	26%	70%	79%	76%	0.2	0.2	1.0	0.3
8078	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	SF	LI	Retrofit	18,430.7	16%	2,856.8	1.548	7	\$6,780	100%	50%	SWC-8	26%	70%	79%	76%	0.2	0.2	1.0	0.3
8079	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	MF	NLI	Retrofit	6,458.9	16%	1,001.1	0.543	7	\$4,339	100%	50%	SWC-11	26%	70%	79%	76%	0.1	0.1	1.0	0.1
8080	Residential	Shell	Smart Window Coverings - Film/Transformer - Electric furnace	Emerging Technology	MF	LI	Retrofit	6,458.9	16%	1,001.1	0.543	7	\$4,339	100%	50%	SWC-12	26%	70%	79%	76%	0.1	0.1	1.0	0.1
8081	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	SF	NLI	Retrofit	1,247.3	16%	193.3	0.105	7	\$6,780	100%	50%	SWC-13	22%	70%	79%	76%	0.1	0.1	1.0	0.1
8082	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	SF	LI	Retrofit	1,247.3	16%	193.3	0.105	7	\$6,780	100%	50%	SWC-14	22%	70%	79%	76%	0.1	0.1	1.0	0.1
8083	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	MF	NLI	Retrofit	366.8	16%	56.8	0.031	7	\$4,339	100%	50%	SWC-17	22%	70%	79%	76%	0.0	0.0	1.0	0.1
8084	Residential	Shell	Smart Window Coverings - Film/Transformer - Gas Heating	Emerging Technology	MF	LI	Retrofit	366.8	16%	56.8	0.031	7	\$4,339	100%	50%	SWC-18	22%	70%	79%	76%	0.0	0.0	1.0	0.1
9001	Residential	Water Heating	Pipe Wrap	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	50%	WRAP-1	51%	17%	84%	36%	4.6	4.6	1.0	13.6
9002	Residential	Water Heating	Pipe Wrap	Low Income	SF	LI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	100%	WRAP-2	51%	17%	81%	59%	4.6	4.6	1.0	13.6
9003	Residential	Water Heating	Pipe Wrap	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	50%	WRAP-5	51%	17%	68%	33%	4.6	4.6	1.0	13.6
9004	Residential	Water Heating	Pipe Wrap	Low Income	MF	LI	Retrofit	2,942.2	3%	138.3	0.005	13	\$11	100%	100%	WRAP-6	51%	17%	81%	59%	4.6	4.6	1.0	13.6
9005	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	50%	BATH-1	101%	14%	84%	36%	22.9	22.9	1.0	25.0
9006	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Low Income	SF	LI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	100%	BATH-2	101%	14%	81%	59%	22.9	22.9	1.0	25.0
9007	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	50%	BATH-5	101%	14%	68%	31%	6.6	6.6	1.0	8.7
9008	Residential	Water Heating	Bathroom Aerator 1.0 gpm	Low Income	MF	LI	Retrofit	2,942.2	1%	35.5	0.007	10	\$7	100%	100%	BATH-6	101%	14%	81%	59%	6.6	6.6	1.0	8.7
9009	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Home Energy Improvement	SF	NLI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	50%	KITCH-1	51%	14%	84%	36%	30.6	30.6	1.0	38.7
9010	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Low Income	SF	LI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	100%	KITCH-2	51%	14%	81%	59%	30.6	30.6	1.0	38.7
9011	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Home Energy Improvement	MF	NLI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	50%	KITCH-5	51%	14%	68%	31%	14.3	14.3	1.0	22.5
9012	Residential	Water Heating	Kitchen Flip Aerator 1.5 gpm	Low Income	MF	LI	Retrofit	3,044.8	5%	141.3	0.028	10	\$7	100%	100%	KITCH-6	51%	14%	81%	59%	14.3	14.3	1.0	22.5
9013	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	50%	LFSH-1	101%	12%	84%	36%	18.9	18.9	1.0	35.4
9014	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Low Income	SF	LI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	100%	LFSH-2	101%	12%	81%	59%	18.9	18.9	1.0	35.4
9015	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	50%	LFSH-5	101%	12%	68%	30%	18.9	18.9	1.0	35.4
9016	Residential	Water Heating	Low Flow Showerhead 1.5 gpm	Low Income	MF	LI	Retrofit	2,942.2	12%	353.0	0.017	10	\$12	100%	100%	LFSH-6	101%	12%	81%	59%	18.9	18.9	1.0	35.4
9017	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	SF	NLI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-1	101%	12%	84%	36%	2.6	2.6	1.0	4.0
9018	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	SF	LI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-2	101%	12%	81%	29%	2.6	2.6	1.0	4.0

Residential Measure Summary

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Home Type	Income Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
9019	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	MF	NLI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-5	101%	12%	68%	30%	2.6	2.6	1.0	4.0
9020	Residential	Water Heating	Thermostatic Restrictor Shower Valve	Home Energy Improvement	MF	LI	Retrofit	2,942.2	2%	87.8	0.010	10	\$30	100%	50%	TRSV-6	101%	12%	81%	29%	2.6	2.6	1.0	4.0
9021	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	SF	NLI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-1	51%	37%	84%	50%	0.9	0.9	1.0	1.8
9022	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	SF	LI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-2	51%	37%	81%	50%	0.9	0.9	1.0	1.8
9023	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	MF	NLI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-5	51%	37%	68%	50%	0.9	0.9	1.0	1.8
9024	Residential	Water Heating	Heat Pump Water Heater-electric resistance heat	Residential HVAC	MF	LI	MO	2,942.2	44%	1,294.0	0.220	13	\$784	100%	50%	HPWH-6	51%	37%	81%	50%	0.9	0.9	1.0	1.8
9025	Residential	Water Heating	Drain water Heat Recovery	Emerging Technology	SF	N/A	Retrofit	2,942.2	30%	882.0	0.101	20	\$742	100%	50%	DWHR-1	51%	10%	65%	28%	0.7	0.7	1.0	1.7
9026	Residential	Water Heating	Drain water Heat Recovery	Emerging Technology	MF	N/A	Retrofit	2,942.2	30%	882.0	0.101	20	\$742	100%	50%	DWHR-5	51%	10%	65%	28%	0.7	0.7	1.0	1.7

APPENDIX B. Commercial and Industrial Measure Data

C&I Measure Summary: Montana

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Assembly	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	3.3	5.8	5.8	0.5
2	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Assembly	ROB	1583	21%	329	0.039	0.038	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.5	2.6	3.0	0.4
3	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Assembly	Retro	103919	35%	36372	4.274	4.217	10	\$1150.00	100%	50%	3	100%	50%	76%	56%	14.9	26.0	25.1	0.5
4	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Assembly	Retro	103919	2%	1970	0.231	0.228	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.6	8.1	8.2	0.5
5	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Assembly	Retro	1480	50%	740	0.087	0.086	15	\$49.50	100%	50%	5	5%	20%	76%	55%	9.5	16.5	16.5	0.5
6	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Assembly	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	2.2	3.9	4.2	0.5
7	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Assembly	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.2	2.1	2.4	0.4
8	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Assembly	ROB	11904	13%	1514	0.454	0.198	12	\$2,162.00	100%	50%	1	14%	17%	76%	28%	0.5	0.8	1.1	0.4
9	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Assembly	ROB	6351	15%	924	0.416	0.181	12	\$1,682.00	100%	50%	2	18%	53%	76%	23%	0.5	0.8	1.0	0.4
10	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Assembly	ROB	18912	50%	9499	4.275	1.863	12	\$3,824.00	100%	50%	2	18%	53%	76%	48%	2.1	3.7	2.7	0.7
11	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Assembly	ROB	12454	14%	1762	0.396	0.173	12	\$2,126.00	100%	50%	3	27%	24%	76%	31%	0.5	0.9	1.2	0.4
12	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Assembly	ROB	13385	67%	9010	3.337	1.454	12	\$2,490.00	100%	50%	4	6%	45%	76%	50%	2.8	4.9	3.8	0.6
13	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Assembly	ROB	7500	85%	6398	1.535	0.669	12	\$1,891.00	100%	50%	5	3%	16%	76%	50%	2.1	3.7	3.5	0.5
14	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Assembly	ROB	3000	79%	2355	0.698	0.304	12	\$1,497.00	100%	50%	5	3%	16%	76%	42%	1.1	1.9	1.9	0.5
15	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Assembly	ROB	41082	34%	14133	2.144	2.820	16	\$255.00	100%	50%	6	26%	61%	76%	57%	43.7	76.0	62.6	0.6
16	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Assembly	ROB	35485	26%	9319	1.414	1.859	16	\$1,375.00	100%	50%	6	26%	61%	76%	53%	5.3	9.3	8.1	0.6
17	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	471	14%	66	0.038	0.001	15	\$153.28	100%	50%	1	21%	10%	76%	21%	0.4	0.7	1.0	0.4
18	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	471	19%	89	0.051	0.001	15	\$214.59	100%	50%	1	21%	10%	76%	20%	0.4	0.7	0.9	0.4
19	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	471	30%	144	0.082	0.001	15	\$398.52	100%	50%	1	21%	10%	76%	19%	0.3	0.6	0.9	0.3
20	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Assembly	ROB	529	9%	48	0.028	0.000	15	\$71.00	100%	50%	2	21%	10%	76%	28%	0.6	1.1	1.2	0.4
21	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Assembly	ROB	529	13%	71	0.041	0.001	15	\$109.23	100%	50%	2	21%	10%	76%	27%	0.6	1.0	1.2	0.4
22	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Assembly	ROB	529	24%	124	0.072	0.001	15	\$218.46	100%	50%	2	21%	10%	76%	24%	0.5	0.9	1.1	0.4
23	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Assembly	Retro	573	7%	40	0.023	0.000	3	\$5.13	100%	50%	3	43%	50%	76%	54%	2.0	3.4	2.6	0.7
24	Commercial	Cooling	Air Side Economizer	Biz-Custom	Assembly	Retro	474	20%	95	0.054	0.001	15	\$153.28	100%	50%	4	43%	25%	76%	26%	0.6	1.0	1.2	0.4
25	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Assembly	Retro	497	20%	99	0.057	0.001	15	\$197.50	100%	50%	5	43%	20%	76%	22%	0.5	0.8	1.0	0.4
26	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	491	13%	61	0.035	0.000	15	\$115.00	100%	50%	6	29%	10%	76%	23%	0.5	0.9	1.1	0.4
27	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	491	22%	109	0.063	0.001	15	\$514.00	100%	50%	6	29%	10%	76%	15%	0.2	0.3	0.7	0.2
28	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	491	33%	164	0.094	0.001	15	\$630.50	100%	50%	6	29%	10%	76%	15%	0.2	0.4	0.8	0.3
29	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Assembly	ROB	1965	14%	278	0.160	0.002	11	\$175.00	100%	50%	7	29%	20%	76%	42%	1.2	2.1	1.8	0.6
30	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Assembly	ROB	634	15%	92	0.053	0.001	8	\$84.00	100%	50%	8	0%	20%	76%	36%	0.6	1.1	1.2	0.5
31	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Assembly	ROB	502	9%	45	0.026	0.000	23	\$126.00	100%	50%	9	26%	10%	76%	19%	0.4	0.7	1.0	0.4
32	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Assembly	ROB	252	23%	57	0.033	0.000	23	\$126.00	100%	50%	10	3%	10%	76%	21%	0.5	0.9	1.2	0.4
33	Commercial	Cooling	Window Film	Biz-Custom	Assembly	Retro	6000	4%	264	0.152	0.002	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.6	2.1	-0.6	0.6
34	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Assembly	Retro	6000	6%	360	0.207	0.003	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.6	1.1	1.3	0.4
35	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Assembly	Retro	529	0%	0	0.037	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
36	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	4632	5%	241	0.047	0.053	15	\$135.00	100%	50%	1	31%	10%	76%	44%	1.4	2.5	2.4	0.5
37	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	4632	11%	493	0.095	0.108	15	\$445.76	100%	50%	1	31%	10%	76%	36%	0.9	1.5	1.7	0.5
38	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	4632	14%	661	0.127	0.145	15	\$445.76	100%	50%	1	31%	10%	76%	41%	1.2	2.1	2.1	0.5
39	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5205	6%	298	0.057	0.065	15	\$100.00	100%	50%	2	16%	10%	76%	49%	2.4	4.1	3.7	0.6
40	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5205	11%	561	0.108	0.123	15	\$171.08	100%	50%	2	16%	10%	76%	50%	2.6	4.6	4.0	0.6
41	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5370	6%	320	0.062	0.070	15	\$100.00	100%	50%	3	15%	10%	76%	50%	2.6	4.5	3.9	0.6
42	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5370	11%	598	0.115	0.131	15	\$182.26	100%	50%	3	15%	10%	76%	50%	2.6	4.6	4.0	0.6
43	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5564	6%	344	0.066	0.075	15	\$100.00	100%	50%	4	15%	10%	76%	50%	2.8	4.8	4.2	0.6
44	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5564	12%	641	0.124	0.140	15	\$201.80	100%	50%	4	15%	10%	76%	50%	2.5	4.4	3.9	0.6
45	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Assembly	ROB	3390	3%	100	0.019	0.022	25	\$108.00	100%	50%	5	7%	20%	76%	33%	1.0	1.7	1.9	0.5
46	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Assembly	ROB	3390	4%	143	0.028	0.031	25	\$108.00	100%	50%	5	7%	20%	76%	39%	1.4	2.5	2.5	0.5
47	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Assembly	ROB	5630	3%	189	0.037	0.041	8	\$84.00	100%	50%	6	0%	20%	76%	47%	1.1	2.0	2.0	0.5
48	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Assembly	ROB	312	64%	200	0.030	0.040	10	\$784.00	100%	50%	1	100%	0%	69%	11%	0.1	0.2	0.7	0.2
49	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Assembly	Retro	312	2%	6	0.001	0.001	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.1	0.2	0.6	0.1
50	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Assembly	ROB	2262	32%	713	0.108	0.142	5	\$92.90	100%	50%	3	20%	85%	69%	48%	2.4	4.2	3.8	0.6
51	Commercial	HotWater	Faucet Aerator	Biz-Custom	Assembly	Retro	443	22%	97	0.015	0.019	10	\$6.70	100%	50%	4	20%	85%	69%	50%	8.2	14.3	11.8	0.6
52	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Assembly	ROB	2239	29%	660	0.100	0.132	11	\$190.00	100%	50%	5	25%	33%	69%	44%	2.1	3.7	3.4	0.5
53	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Assembly	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.9	2.6	0.4
54	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Assembly	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.9	2.6	0.4
55	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Assembly	Retro	1589	60%	959	0.000	0.133	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.0	1.6	0.3
56	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Assembly	Retro	1742	66%	1154	0.000	0.160	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.2	2.1	2.8	0.4
57	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Assembly	Retro	3235	60%	1953	0.000	0.270	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3
58	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Assembly	Retro	1589	60%	959	0.000	0.133	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.0	1.6	0.3
59																								

C&I Measure Summary: Montana

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
67	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Assembly	Retro	1	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	60%	11%	74%	40%	0.8	1.3	1.8	0.4
68	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Assembly	Retro	305	30%	91	0.012	0.011	15	\$53.90	100%	50%	6	60%	11%	74%	50%	1.1	1.9	2.3	0.4
69	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Assembly	Retro	69	43%	29	0.004	0.004	5	\$32.50	100%	50%	7	1%	85%	74%	35%	0.2	0.4	0.9	0.2
70	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Assembly	Retro	385	61%	237	0.028	0.027	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.3
71	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Assembly	Retro	9932	50%	4966	0.583	0.576	20	\$1,586.00	100%	50%	2	37%	21%	76%	49%	2.4	4.2	4.6	0.5
72	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Assembly	Retro	262	83%	217	0.026	0.025	10	\$483.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.8	0.2
73	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Assembly	Retro	2984	25%	746	0.088	0.086	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	2.0	0.0	2.8	0.0
74	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Assembly	ROB	3096	3%	85	0.010	0.010	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.9	1.6	2.0	0.4
75	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Assembly	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	39%	10%	76%	19%	0.5	0.9	0.8	0.6
76	Commercial	Motors	Cogged V-Belt	Biz-Custom	Assembly	Retro	17237	3%	534	0.079	0.065	15	\$383.81	100%	50%	1	50%	10%	76%	40%	0.9	1.6	2.0	0.4
77	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Assembly	Retro	3805	34%	1290	0.191	0.157	15	\$168.00	100%	50%	2	100%	10%	76%	54%	5.1	8.9	8.7	0.5
78	Commercial	Motors	Power Drive Systems	Biz-Custom	Assembly	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	5.1	8.9	8.7	0.5
79	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Assembly	Retro	33406	31%	10222	1.517	1.248	15	\$527.50	100%	50%	2	100%	1%	76%	56%	13.0	22.6	21.2	0.5
80	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Assembly	Retro	551	26%	110	0.013	0.013	6	\$0.00	100%		1	5%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
81	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Assembly	Retro	1398	10%	140	0.000	0.146	5	\$40.00	100%	50%	2	27%	20%	76%	50%	2.1	3.7	2.0	0.9
82	Commercial	PlugLoads_Office	Plug Load. Occupancy Sensor	Biz-Custom	Assembly	Retro	1126	15%	169	0.000	0.111	8	\$70.00	100%	50%	2	27%	20%	76%	47%	1.6	2.8	2.1	0.7
83	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Assembly	ROB	1621	23%	368	0.042	0.043	8	\$118.00	100%	50%	3	36%	25%	76%	49%	1.2	2.1	2.5	0.4
84	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Assembly	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	36%	25%	76%	48%	1.0	1.7	2.1	0.4
85	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Assembly	Retro	86783	18%	15778	1.854	1.829	15	\$480.00	100%	50%	3	36%	25%	76%	56%	20.9	36.4	35.6	0.5
86	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Assembly	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	36%	25%	76%	49%	2.3	4.0	4.4	0.4
87	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Assembly	Retro	764	47%	358	0.042	0.042	15	\$82.00	100%	50%	4	36%	25%	76%	52%	2.8	4.8	5.2	0.5
88	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Assembly	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	1%	10%	76%	48%	1.6	2.8	3.2	0.4
89	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Assembly	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	5%	50%	64%	48%	#DIV/0!	0.0	0.0	0.0
90	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Assembly	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	3.4	5.9	6.1	0.5
91	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Assembly	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	3%	25%	64%	19%	0.4	0.7	1.2	0.3
92	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Assembly	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.5	0.8	1.3	0.3
93	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Assembly	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	11%	25%	64%	12%	0.2	0.4	0.9	0.2
94	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Assembly	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	3%	80%	64%	41%	3.4	5.9	6.1	0.5
95	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Assembly	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	3%	25%	64%	41%	3.0	5.2	5.4	0.5
96	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Assembly	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	4%	25%	64%	29%	0.8	1.4	1.9	0.4
97	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Assembly	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	18%	25%	64%	37%	1.2	2.0	2.4	0.4
98	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Assembly	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	64%	39%	1.6	2.8	3.1	0.5
99	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Assembly	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	3%	80%	64%	41%	3.4	5.9	6.1	0.5
100	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Assembly	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	3%	2%	64%	34%	0.8	1.4	1.8	0.4
101	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Assembly	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	18%	54%	64%	15%	0.3	0.5	1.0	0.3
102	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Assembly	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	18%	54%	64%	10%	0.1	0.2	0.7	0.2
103	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Assembly	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	6%	25%	64%	41%	2.3	4.0	4.2	0.5
104	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Assembly	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	6%	25%	64%	45%	6.5	11.3	11.0	0.5
105	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Assembly	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	6%	54%	64%	21%	0.4	0.7	1.2	0.3
106	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Assembly	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	6%	54%	64%	10%	0.1	0.2	0.7	0.1
107	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Assembly	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	92%	25%	64%	13%	0.5	1.0	0.8	0.6
108	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Assembly	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	92%	25%	64%	41%	1.2	2.1	2.4	0.4
109	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Assembly	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	6%	44%	64%	39%	1.6	2.7	3.0	0.5
110	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Assembly	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	2%	30%	64%	11%	0.2	0.3	0.8	0.2
111	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Assembly	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	11%	35%	64%	43%	3.4	6.0	6.0	0.5
112	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Assembly	Retro	3443	63%	2152	0.000	0.000	15	\$147.41	100%	50%	1	75%	14%	76%	55%	6.3	10.9	16.1	0.3
113	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Assembly	Retro	19919	82%	16287	2.451	2.138	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.7	4.7	4.7	0.5
114	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Assembly	Retro	21909	83%	18277	2.751	2.400	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	3.0	5.2	5.2	0.5
115	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Assembly	Retro	23903	82%	19579	2.947	2.571	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	3.2	5.5	5.4	0.5
116	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Assembly	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.8	3.1	3.2	0.5
117	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Assembly	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	0%	2	0%	20%	76%	57%	0.0	0.0	0.0	0.0
118	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Assembly	Retro	508	73%	371	0.000	0.000	10	\$187.50	100%	50%	3	100%	14%	76%	45%	7.8	1.1	10.3	0.3
119	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Assembly	Retro	610	16%	99	0.073	0.000	10	\$341.21	100%	50%	4	100%	14%	76%	16%	2.4	0.4	3.2	0.3
120	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Assembly	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.9	10.2	9.4	0.5
121	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Assembly	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.5	2.6	2.8	0.5
122	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Assembly	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	28%	0.7	1.3	1.7	0.4
123	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Assembly	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	7.5	13.1	11.8	0.6
124	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Education	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	3.2	5.6	5.8	0.5
125	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Education	ROB	1583	21%	329	0.034	0.036	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.4	2.5	3.0	0.4
126	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Education	Retro	103919	35%	36372	3.763	3.971	10	\$											

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
144	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Education	ROB	375	13%	50	0.033	0.000	15	\$109.23	100%	50%	2	25%	10%	76%	21%	0.5	0.8	1.0	0.4	
145	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Education	ROB	375	24%	88	0.058	0.000	15	\$218.46	100%	50%	2	25%	10%	76%	20%	0.4	0.7	0.9	0.4	
146	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Education	Retro	406	7%	28	0.019	0.000	3	\$5.33	100%	50%	3	50%	50%	76%	52%	1.4	2.5	1.9	0.7	
147	Commercial	Cooling	Air Side Economizer	Biz-Custom	Education	Retro	336	20%	67	0.044	0.000	15	\$153.28	100%	50%	4	50%	25%	76%	21%	0.4	0.8	1.0	0.4	
148	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Education	Retro	352	20%	70	0.046	0.000	15	\$197.50	100%	50%	5	50%	20%	76%	19%	0.4	0.6	0.9	0.4	
149	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	348	13%	43	0.029	0.000	15	\$115.00	100%	50%	6	0%	10%	76%	19%	0.4	0.7	0.9	0.4	
150	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	348	22%	77	0.051	0.000	15	\$514.00	100%	50%	6	0%	10%	76%	15%	0.2	0.3	0.7	0.2	
151	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	348	33%	116	0.076	0.000	15	\$630.50	100%	50%	6	0%	10%	76%	15%	0.2	0.3	0.7	0.2	
152	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Education	ROB	1392	14%	197	0.130	0.000	11	\$175.00	100%	50%	7	0%	20%	76%	36%	0.9	1.6	1.4	0.5	
153	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Education	ROB	449	15%	65	0.043	0.000	8	\$84.00	100%	50%	8	0%	20%	76%	30%	0.5	0.9	1.0	0.4	
154	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Education	ROB	356	9%	32	0.021	0.000	23	\$126.00	100%	50%	9	45%	10%	76%	15%	0.3	0.6	0.9	0.3	
155	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Education	ROB	179	23%	41	0.027	0.000	23	\$126.00	100%	50%	10	5%	10%	76%	17%	0.4	0.7	1.0	0.4	
156	Commercial	Cooling	Window Film	Biz-Custom	Education	Retro	6000	4%	264	0.174	0.000	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.6	2.2	-0.6	0.6	
157	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Education	Retro	6000	6%	360	0.237	0.000	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.7	1.2	1.3	0.5	
158	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Education	Retro	375	0%	0	0.068	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0	
159	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	3272	5%	171	0.038	0.042	15	\$135.00	100%	50%	1	0%	10%	76%	38%	1.1	1.9	1.9	0.5	
160	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	3272	11%	349	0.077	0.086	15	\$445.76	100%	50%	1	0%	10%	76%	30%	0.7	1.2	1.3	0.4	
161	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	3272	14%	467	0.104	0.116	15	\$520.06	100%	50%	1	0%	10%	76%	33%	0.8	1.3	1.5	0.5	
162	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3677	6%	211	0.047	0.052	15	\$100.00	100%	50%	2	28%	10%	76%	46%	1.8	3.1	2.7	0.6	
163	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3677	11%	396	0.088	0.098	15	\$171.08	100%	50%	2	28%	10%	76%	47%	2.0	3.4	3.0	0.6	
164	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3794	6%	226	0.050	0.056	15	\$100.00	100%	50%	3	27%	10%	76%	47%	1.9	3.4	2.9	0.6	
165	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3794	11%	423	0.094	0.105	15	\$182.26	100%	50%	3	27%	10%	76%	47%	2.0	3.4	3.0	0.6	
166	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3931	6%	243	0.054	0.060	15	\$100.00	100%	50%	4	27%	10%	76%	47%	2.1	3.6	3.1	0.6	
167	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3931	12%	453	0.101	0.112	15	\$201.80	100%	50%	4	27%	10%	76%	47%	1.9	3.3	2.9	0.6	
168	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Education	ROB	2395	3%	71	0.016	0.018	25	\$108.00	100%	50%	5	9%	20%	76%	27%	0.8	1.3	1.5	0.4	
169	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Education	ROB	2395	4%	101	0.022	0.025	25	\$108.00	100%	50%	5	9%	20%	76%	33%	1.1	1.9	1.9	0.5	
170	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Education	ROB	3977	3%	134	0.030	0.033	8	\$84.00	100%	50%	6	0%	20%	76%	42%	0.9	1.5	1.5	0.5	
171	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Education	ROB	632	64%	405	0.061	0.081	10	\$784.00	100%	50%	1	100%	17%	69%	16%	0.3	0.5	0.9	0.3	
172	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Education	Retro	632	2%	13	0.002	0.003	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.2	0.3	0.8	0.2	
173	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Education	ROB	1810	32%	570	0.087	0.114	5	\$92.90	100%	50%	3	20%	85%	69%	47%	2.0	3.4	3.1	0.5	
174	Commercial	HotWater	Faucet Aerator	Biz-Custom	Education	Retro	355	22%	78	0.012	0.016	10	\$6.70	100%	50%	4	20%	85%	69%	49%	6.6	11.4	9.6	0.6	
175	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Education	ROB	2239	29%	660	0.100	0.132	11	\$190.00	100%	50%	5	25%	33%	69%	44%	2.1	3.7	3.4	0.5	
176	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Education	Retro	856	66%	567	0.000	0.079	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
177	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Education	Retro	856	66%	567	0.000	0.079	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
178	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Education	Retro	1589	60%	959	0.000	0.134	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
179	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Education	Retro	1742	66%	1154	0.000	0.161	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.2	2.2	2.8	0.4	
180	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Education	Retro	3235	60%	1953	0.000	0.273	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3	
181	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Education	Retro	1589	60%	959	0.000	0.134	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
182	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Education	Retro	180	68%	121	0.012	0.014	15	\$27.00	100%	50%	1	10%	45%	74%	58%	2.8	4.9	5.3	0.5	
183	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Education	Retro	129	74%	95	0.010	0.011	15	\$59.00	100%	50%	1	10%	45%	74%	49%	1.0	1.8	2.2	0.4	
184	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Education	Retro	116	45%	52	0.005	0.006	15	\$1.88	100%	50%	2	88%	45%	74%	65%	17.2	29.9	29.9	0.5	
185	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Education	Retro	262	50%	131	0.013	0.016	15	\$70.00	100%	50%	2	88%	45%	74%	52%	1.2	2.0	2.5	0.4	
186	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Education	Retro	520	61%	316	0.032	0.037	15	\$44.00	100%	50%	3	1%	45%	74%	61%	4.5	7.8	8.2	0.5	
187	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Education	Retro	2440	68%	1660	0.167	0.196	15	\$330.00	100%	50%	4	1%	45%	74%	59%	3.1	5.5	5.9	0.5	
188	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Education	Retro	97	100%	97	0.010	0.011	11	\$12.00	100%	50%	5	88%	0%	74%	62%	4.0	7.0	7.3	0.5	
189	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Education	Retro	564	30%	169	0.017	0.020	10	\$57.50	100%	50%	6	90%	11%	74%	56%	1.4	2.4	2.8	0.4	
190	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Education	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	90%	11%	74%	50%	1.1	1.9	2.3	0.4	
191	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Education	Retro	440	30%	132	0.013	0.016	15	\$77.97	100%	50%	6	90%	11%	74%	50%	1.1	1.8	2.3	0.4	
192	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Education	Retro	66	43%	28	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	34%	0.2	0.4	0.9	0.2	
193	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Education	Retro	385	61%	237	0.024	0.026	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.2	
194	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Education	Retro	9932	50%	4966	0.514	0.542	20	\$1,586.00	100%	50%	2	46%	21%	76%	49%	2.3	4.1	4.6	0.4	
195	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Education	Retro	2093	83%	1737	0.180	0.190	10	\$483.00	100%	50%	3	1%	10%	76%	50%	1.7	2.9	3.3	0.4	
196	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Education	Retro	2984	25%	746	0.077	0.081	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	2.0	0.0	2.8	0.0	
197	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Education	ROB	3096	3%	85	0.009	0.009	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.9	1.5	2.0	0.4	
198	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Education	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	0%	10%	76%	19%	0.5	0.8	0.8	0.5	
199	Commercial	Motors	Cogged V-Belt	Biz-Custom	Education	Retro	17237	3%	534	0.117	0.060	15	\$383.81	100%	50%	1	50%	10%	76%	40%	1.0	1.8	2.0	0.4	
200	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Education	Retro	3805	34%	1290	0.282	0.145	15	\$168.00	100%	50%	2	100%	10%	76%	54%	5.6	9.7	8.7	0.6	
201	Commercial	Motors	Power Drive Systems	Biz-Custom	Education	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	5.6	9.7	8.7	0.6	
202	Commercial	Motors	Switch Reluctance Motors	Biz-Custom																					

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
222	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Education	Retro	2884	55%	1586	0.222	0.177	15	\$304.59	100%	50%	11	2%	80%	64%	41%	3.4	5.9	6.1	0.5
223	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Education	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	2%	2%	64%	34%	0.8	1.4	1.8	0.4
224	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Education	ROB	2140	29%	629	0.088	0.070	12	\$1,238.50	100%	50%	13	13%	54%	64%	15%	0.3	0.5	1.0	0.3
225	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Education	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	13%	54%	64%	10%	0.1	0.2	0.7	0.2
226	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Education	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	5%	75%	64%	41%	2.3	4.0	4.2	0.5
227	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Education	Retro	2512	59%	1486	0.208	0.166	12	\$127.00	100%	50%	15	5%	25%	64%	45%	6.5	11.3	11.0	0.5
228	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Education	ROB	6374	20%	1275	0.178	0.143	12	\$1,650.50	100%	50%	16	4%	54%	64%	21%	0.4	0.7	1.2	0.3
229	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Education	ROB	4522	7%	305	0.043	0.034	12	\$1,520.50	100%	50%	16	4%	54%	64%	10%	0.1	0.2	0.7	0.1
230	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Education	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	93%	25%	64%	13%	0.5	1.0	0.8	0.6
231	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Education	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	93%	25%	64%	41%	1.2	2.2	2.4	0.4
232	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Education	ROB	6993	10%	721	0.101	0.081	10	\$222.00	100%	50%	19	4%	44%	64%	39%	1.6	2.7	3.0	0.5
233	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Education	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	3%	30%	64%	11%	0.2	0.3	0.8	0.2
234	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Education	Retro	115	74%	84	0.012	0.009	9	\$110.00	100%	50%	21	8%	35%	64%	43%	3.4	6.0	6.0	0.5
235	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Education	Retro	4291	63%	2682	0.000	0.000	15	\$147.41	100%	50%	1	40%	23%	76%	56%	7.8	13.6	19.9	0.3
236	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Education	Retro	19919	82%	16287	2.387	2.298	15	\$4,130.00	100%	50%	2	100%	23%	76%	51%	2.7	4.7	4.7	0.5
237	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Education	Retro	21909	83%	18277	2.678	2.579	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	3.0	5.2	5.2	0.5
238	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Education	Retro	23903	82%	19579	2.869	2.763	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	3.2	5.5	5.4	0.5
239	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Education	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.8	3.1	3.2	0.5
240	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Education	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	50%	2	0%	20%	76%	57%	0.0	0.0	0.0	0.0
241	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Education	Retro	360	76%	272	0.000	0.000	10	\$187.50	100%	50%	3	100%	23%	76%	41%	5.6	0.8	7.5	0.2
242	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Education	Retro	432	61%	262	0.052	0.000	10	\$341.21	100%	50%	4	100%	23%	76%	30%	2.1	0.6	3.1	0.3
243	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Education	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.9	10.2	9.4	0.5
244	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Education	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.5	2.6	2.8	0.5
245	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Education	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	28%	0.7	1.3	1.7	0.4
246	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Education	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	7.5	13.1	11.8	0.6
247	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Food Sales	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	3.5	6.1	5.8	0.5
248	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Food Sales	ROB	1583	21%	329	0.051	0.038	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.6	2.7	3.0	0.5
249	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Food Sales	Retro	103919	35%	36372	5.616	4.169	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	15.7	27.3	25.1	0.5
250	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Food Sales	Retro	103919	2%	1970	0.304	0.226	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.9	8.5	8.2	0.5
251	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Food Sales	Retro	1480	50%	740	0.114	0.085	15	\$49.50	100%	50%	5	5%	20%	76%	55%	10.0	17.4	16.5	0.5
252	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Food Sales	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	2.3	4.1	4.2	0.5
253	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Food Sales	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.3	2.2	2.4	0.5
254	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Food Sales	ROB	17380	13%	2211	0.454	0.282	12	\$2,162.00	100%	50%	1	14%	17%	76%	35%	0.6	1.1	1.4	0.4
255	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Food Sales	ROB	9273	15%	1349	0.416	0.258	12	\$1,682.00	100%	50%	2	18%	53%	76%	31%	0.6	1.0	1.2	0.4
256	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Food Sales	ROB	27611	50%	13869	4.275	2.657	12	\$3,824.00	100%	50%	2	18%	53%	76%	50%	2.7	4.7	3.8	0.6
257	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Food Sales	ROB	18182	14%	2573	0.396	0.246	12	\$2,126.00	100%	50%	3	27%	24%	76%	38%	0.7	1.2	1.6	0.4
258	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Food Sales	ROB	19542	67%	13154	3.337	2.074	12	\$2,490.00	100%	50%	4	6%	45%	76%	52%	3.6	6.3	5.3	0.6
259	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Food Sales	ROB	10950	85%	9340	1.535	0.954	12	\$1,891.00	100%	50%	5	3%	16%	76%	52%	2.8	4.9	5.0	0.5
260	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Food Sales	ROB	4380	79%	3438	0.698	0.434	12	\$1,497.00	100%	50%	5	3%	16%	76%	47%	1.4	2.5	2.6	0.5
261	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Food Sales	ROB	56463	36%	20545	3.884	3.187	16	\$255.00	100%	50%	6	26%	61%	76%	57%	62.8	109.2	90.8	0.6
262	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Food Sales	ROB	47891	29%	13861	2.621	2.150	16	\$1,375.00	100%	50%	6	26%	61%	76%	55%	7.9	13.7	11.8	0.6
263	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	541	14%	76	0.050	0.000	15	\$153.28	100%	50%	1	18%	10%	76%	22%	0.5	0.9	1.0	0.4
264	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	541	19%	102	0.067	0.000	15	\$214.59	100%	50%	1	18%	10%	76%	22%	0.5	0.8	1.0	0.4
265	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	541	30%	165	0.108	0.000	15	\$398.52	100%	50%	1	18%	10%	76%	20%	0.4	0.7	0.9	0.4
266	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	607	9%	55	0.036	0.000	15	\$71.00	100%	50%	2	18%	10%	76%	30%	0.8	1.3	1.3	0.5
267	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	607	13%	81	0.053	0.000	15	\$109.23	100%	50%	2	18%	10%	76%	30%	0.7	1.3	1.3	0.5
268	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	607	24%	143	0.094	0.000	15	\$218.46	100%	50%	2	18%	10%	76%	27%	0.7	1.1	1.2	0.5
269	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Food Sales	Retro	658	7%	46	0.030	0.000	3	\$5.33	100%	50%	3	37%	50%	76%	54%	2.3	4.1	2.8	0.7
270	Commercial	Cooling	Air Side Economizer	Biz-Custom	Food Sales	Retro	544	20%	109	0.071	0.000	15	\$153.28	100%	50%	4	37%	25%	76%	29%	0.7	1.2	1.3	0.5
271	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Food Sales	Retro	571	20%	114	0.075	0.000	15	\$197.50	100%	50%	5	37%	20%	76%	24%	0.6	1.0	1.1	0.4
272	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	564	13%	70	0.046	0.000	15	\$115.00	100%	50%	6	26%	10%	76%	26%	0.6	1.1	1.2	0.5
273	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	564	22%	125	0.082	0.000	15	\$514.00	100%	50%	6	26%	10%	76%	15%	0.2	0.4	0.8	0.3
274	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	564	33%	188	0.123	0.000	15	\$630.50	100%	50%	6	26%	10%	76%	16%	0.3	0.5	0.8	0.3
275	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Food Sales	ROB	2256	14%	319	0.209	0.000	11	\$175.00	100%	50%	7	26%	20%	76%	44%	1.5	2.6	2.0	0.6
276	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Food Sales	ROB	728	15%	106	0.070	0.000	8	\$84.00	100%	50%	8	37%	20%	76%	38%	0.8	1.4	1.3	0.5
277	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Food Sales	ROB	576	9%	52	0.034	0.000	23	\$126.00	100%	50%	9	0%	10%	76%	20%	0.5	0.9	1.1	0.4
278	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Food Sales	ROB	289	23%	66	0.043	0.000	23	\$126.00	100%	50%	10	0%	10%	76%	22%	0.7	1.2	1.2	0.5
279	Commercial	Cooling	Window Film	Biz-Custom	Food Sales	Retro	6000	4%	264	0.173	0.000	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.6	2.2	-0.6	0.6
280	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Food Sales	Retro																		

C&I Measure Summary: Montana

MDU Montana																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
288	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	4705	11%	529	0.116	0.140	15	\$182.26	100%	50%	3	14%	10%	76%	49%	2.5	4.4	3.6	0.6	
289	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	4882	6%	306	0.067	0.081	15	\$100.00	100%	50%	4	14%	10%	76%	49%	2.7	4.6	3.8	0.6	
290	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	4882	12%	568	0.124	0.151	15	\$201.80	100%	50%	4	14%	10%	76%	49%	2.4	4.2	3.5	0.6	
291	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Food Sales	ROB	3000	3%	91	0.020	0.024	25	\$108.00	100%	50%	5	8%	20%	76%	32%	1.0	1.7	1.8	0.5	
292	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Food Sales	ROB	3000	5%	140	0.031	0.037	25	\$108.00	100%	50%	5	8%	20%	76%	39%	1.5	2.6	2.4	0.5	
293	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Food Sales	ROB	4935	4%	196	0.043	0.052	8	\$84.00	100%	50%	6	10%	20%	76%	47%	1.3	2.2	2.0	0.6	
294	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Food Sales	ROB	599	64%	383	0.072	0.059	10	\$784.00	100%	50%	1	100%	0%	69%	16%	0.3	0.5	0.9	0.3	
295	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Food Sales	Retro	599	2%	12	0.002	0.002	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.2	0.3	0.8	0.2	
296	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	ROB	Food Sales	ROB	3303	32%	1041	0.197	0.161	5	\$92.90	100%	50%	3	20%	85%	69%	49%	3.5	6.1	5.3	0.6	
297	Commercial	HotWater	Faucet Aerator	Biz-Custom	Food Sales	Retro	647	22%	142	0.027	0.022	10	\$6.70	100%	50%	4	20%	85%	69%	50%	11.8	20.6	17.0	0.6	
298	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Food Sales	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	2.1	3.6	3.4	0.5	
299	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Food Sales	Retro	856	66%	567	0.013	0.072	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
300	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Food Sales	Retro	856	66%	567	0.013	0.072	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
301	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Food Sales	Retro	1589	60%	959	0.023	0.121	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.1	1.6	0.3	
302	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Food Sales	Retro	1742	66%	1154	0.027	0.146	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.3	2.2	2.8	0.4	
303	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Food Sales	Retro	3235	60%	1953	0.046	0.247	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3	
304	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Food Sales	Retro	1589	60%	959	0.023	0.121	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.1	1.6	0.3	
305	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Food Sales	Retro	306	68%	206	0.025	0.024	9	\$27.00	100%	50%	1	12%	45%	74%	61%	3.4	5.8	6.0	0.5	
306	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Food Sales	Retro	220	74%	162	0.020	0.019	9	\$59.00	100%	50%	1	12%	45%	74%	55%	1.2	2.1	2.5	0.4	
307	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Food Sales	Retro	197	45%	88	0.011	0.010	9	\$1.88	100%	50%	2	88%	45%	74%	66%	20.5	35.7	33.9	0.5	
308	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Food Sales	Retro	445	50%	223	0.027	0.026	9	\$70.00	100%	50%	2	88%	45%	74%	56%	1.4	2.4	2.8	0.4	
309	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Food Sales	Retro	883	61%	537	0.065	0.063	9	\$44.00	100%	50%	3	0%	45%	74%	63%	5.4	9.3	9.2	0.5	
310	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Food Sales	Retro	4147	68%	2821	0.342	0.332	9	\$330.00	100%	50%	4	0%	45%	74%	62%	3.8	6.5	6.6	0.5	
311	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Food Sales	Retro	164	100%	164	0.020	0.019	11	\$12.00	100%	50%	5	88%	0%	74%	64%	7.0	12.2	12.0	0.5	
312	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Food Sales	Retro	959	30%	288	0.035	0.034	10	\$57.50	100%	50%	6	88%	11%	74%	59%	2.4	4.1	4.4	0.5	
313	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Food Sales	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	88%	11%	74%	56%	1.9	3.2	3.6	0.4	
314	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Food Sales	Retro	749	30%	225	0.027	0.026	15	\$132.52	100%	50%	6	88%	11%	74%	50%	1.1	1.9	2.3	0.4	
315	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Food Sales	Retro	64	43%	28	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	33%	0.2	0.4	0.9	0.2	
316	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Food Sales	Retro	385	61%	237	0.048	0.030	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.3	
317	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Food Sales	Retro	9932	50%	4966	1.009	0.627	20	\$1,586.00	100%	50%	2	16%	21%	76%	49%	2.7	4.7	4.6	0.5	
318	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Food Sales	Retro	3819	83%	3170	0.644	0.400	10	\$483.00	100%	50%	3	1%	10%	76%	53%	3.5	6.1	5.6	0.5	
319	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Food Sales	Retro	2984	25%	746	0.152	0.094	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	2.0	0.0	2.8	0.0	
320	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Food Sales	ROB	3096	3%	85	0.017	0.011	15	\$59.00	100%	50%	5	0%	70%	76%	41%	1.0	1.8	2.0	0.4	
321	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Food Sales	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	45%	10%	76%	19%	0.7	1.2	0.8	0.7	
322	Commercial	Motors	Cogged V-Belt	Biz-Custom	Food Sales	Retro	19471	3%	604	0.000	0.137	15	\$383.81	100%	50%	1	50%	10%	76%	42%	1.0	1.7	2.2	0.4	
323	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Food Sales	Retro	3805	34%	1290	0.000	0.293	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.9	8.5	8.7	0.5	
324	Commercial	Motors	Power Drive Systems	Biz-Custom	Food Sales	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.9	8.5	8.7	0.5	
325	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Food Sales	Retro	37735	31%	11547	0.000	2.628	15	\$527.50	100%	50%	2	100%	1%	76%	56%	14.0	24.3	23.9	0.5	
326	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Food Sales	Retro	551	26%	110	0.022	0.014	6	\$0.00	100%		1	4%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0	
327	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Food Sales	Retro	1398	10%	140	0.000	0.159	5	\$40.00	100%	50%	2									

C&I Measure Summary: Montana

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
371	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Food Service	ROB	1583	21%	329	0.039	0.037	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.5	2.6	3.0	0.4
372	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Food Service	Retro	103919	35%	36372	4.295	4.095	10	\$1150.00	100%	50%	3	100%	50%	76%	56%	14.8	25.8	25.1	0.5
373	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Food Service	Retro	103919	2%	1970	0.233	0.222	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.6	8.0	8.2	0.5
374	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Food Service	Retro	1480	50%	740	0.087	0.083	15	\$49.50	100%	50%	5	5%	20%	76%	55%	9.4	16.4	16.5	0.5
375	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Food Service	Retro	5	20%	1	0.000	0.000	5	\$0.21	100%	50%	6	100%	20%	76%	52%	2.2	3.8	4.2	0.5
376	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Food Service	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.2	2.1	2.4	0.4
377	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Food Service	ROB	17380	13%	2211	0.454	0.524	12	\$2,162.00	100%	50%	1	14%	17%	76%	35%	0.7	1.3	1.4	0.4
378	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Food Service	ROB	9273	15%	1349	0.416	0.479	12	\$1,682.00	100%	50%	2	18%	53%	76%	31%	0.7	1.2	1.2	0.5
379	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Food Service	ROB	27611	50%	13869	4.275	4.929	12	\$3,824.00	100%	50%	2	18%	53%	76%	50%	3.2	5.6	3.8	0.7
380	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Food Service	ROB	18182	14%	2573	0.396	0.457	12	\$2,126.00	100%	50%	3	27%	24%	76%	38%	0.8	1.3	1.6	0.4
381	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Food Service	ROB	19542	67%	13154	3.337	3.848	12	\$2,490.00	100%	50%	4	6%	45%	76%	52%	4.2	7.3	5.3	0.7
382	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Food Service	ROB	10950	85%	9340	1.535	1.770	12	\$1,891.00	100%	50%	5	3%	16%	76%	52%	3.2	5.5	5.0	0.6
383	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Food Service	ROB	4380	79%	3438	0.698	0.805	12	\$1,497.00	100%	50%	5	3%	16%	76%	47%	1.6	2.8	2.6	0.5
384	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Food Service	ROB	56463	36%	20545	3.884	3.187	16	\$255.00	100%	50%	6	26%	61%	76%	57%	62.8	109.2	90.8	0.6
385	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Food Service	ROB	47891	29%	13861	2.621	2.150	16	\$1,375.00	100%	50%	6	26%	61%	76%	55%	7.9	13.7	11.8	0.6
386	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	604	14%	85	0.051	0.000	15	\$153.28	100%	50%	1	19%	10%	76%	23%	0.5	0.9	1.1	0.4
387	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	604	19%	114	0.068	0.001	15	\$214.59	100%	50%	1	19%	10%	76%	23%	0.5	0.9	1.1	0.4
388	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	604	30%	184	0.110	0.001	15	\$398.52	100%	50%	1	19%	10%	76%	21%	0.4	0.8	1.0	0.4
389	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Service	ROB	678	9%	62	0.037	0.000	15	\$71.00	100%	50%	2	19%	10%	76%	32%	0.8	1.4	1.4	0.5
390	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Service	ROB	678	13%	90	0.054	0.000	15	\$109.23	100%	50%	2	19%	10%	76%	31%	0.8	1.4	1.4	0.5
391	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Service	ROB	678	24%	160	0.096	0.001	15	\$218.46	100%	50%	2	19%	10%	76%	29%	0.7	1.2	1.3	0.5
392	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Food Service	Retro	735	7%	51	0.031	0.000	3	\$5.33	100%	50%	3	38%	50%	76%	54%	2.5	4.3	3.1	0.7
393	Commercial	Cooling	Air Side Economizer	Biz-Custom	Food Service	Retro	608	20%	122	0.073	0.001	15	\$153.28	100%	50%	4	38%	25%	76%	31%	0.8	1.3	1.3	0.5
394	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Food Service	Retro	637	20%	127	0.076	0.001	15	\$197.50	100%	50%	5	38%	20%	76%	27%	0.6	1.1	1.2	0.4
395	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	630	13%	79	0.047	0.000	15	\$115.00	100%	50%	6	25%	10%	76%	28%	0.7	1.1	1.2	0.5
396	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	630	22%	140	0.084	0.001	15	\$514.00	100%	50%	6	25%	10%	76%	15%	0.3	0.4	0.8	0.3
397	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	630	33%	210	0.126	0.001	15	\$630.50	100%	50%	6	25%	10%	76%	18%	0.3	0.6	0.9	0.3
398	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Food Service	ROB	2520	14%	357	0.214	0.002	11	\$175.00	100%	50%	7	25%	20%	76%	46%	1.6	2.7	2.2	0.6
399	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Food Service	ROB	813	15%	118	0.071	0.001	8	\$84.00	100%	50%	8	38%	20%	76%	40%	0.8	1.5	1.4	0.5
400	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Food Service	ROB	644	9%	58	0.035	0.000	23	\$126.00	100%	50%	9	0%	10%	76%	21%	0.6	1.0	1.2	0.4
401	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Food Service	ROB	323	23%	73	0.044	0.000	23	\$126.00	100%	50%	10	0%	10%	76%	24%	0.7	1.2	1.3	0.5
402	Commercial	Cooling	Window Film	Biz-Custom	Food Service	Retro	6000	4%	264	0.158	0.001	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.6	2.1	-0.6	0.6
403	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Food Service	Retro	6000	6%	360	0.216	0.002	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.7	1.1	1.3	0.4
404	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Food Service	Retro	678	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
405	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	3634	6%	209	0.042	0.042	15	\$135.00	100%	50%	1	31%	10%	76%	42%	1.2	2.1	2.2	0.5
406	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	3634	12%	419	0.084	0.083	15	\$445.76	100%	50%	1	31%	10%	76%	33%	0.7	1.3	1.5	0.4
407	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	3634	16%	570	0.114	0.113	15	\$520.06	100%	50%	1	31%	10%	76%	36%	0.9	1.5	1.7	0.4
408	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4051	6%	236	0.047	0.047	15	\$100.00	100%	50%	2	16%	10%	76%	47%	1.9	3.2	3.0	0.5
409	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4051	11%	443	0.089	0.088	15	\$171.08	100%	50%	2	16%	10%	76%	48%	2.0	3.5	3.3	0.5
410	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4183	6%	256	0.051	0.051	15	\$100.00	100%	50%	3	15%	10%	76%	48%	2.0	3.5	3.2	0.5
411	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4183	11%	475	0.095	0.094	15	\$182.26	100%	50%	3	15%	10%	76%	48%	2.1	3.6	3.3	0.5
412	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4347	6%	277	0.056	0.055	15	\$100.00	100%	50%	4	15%	10%	76%	49%	2.2	3.8	3.5	0.5
413	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4347	12%	512	0.103	0.102	15	\$201.80	100%	50%	4	15%	10%	76%	48%	2.0	3.5	3.2	0.5
414	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Food Service	ROB	2696	3%	84	0.017	0.017	25	\$108.00	100%	50%	5	14%	20%	76%	30%	0.8	1.4	1.7	0.4
415	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Food Service	ROB	2696	5%	138	0.028	0.028	25	\$108.00	100%	50%	5	14%	20%	76%	39%	1.4	2.4	2.4	0.5
416	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Food Service	ROB	4391	5%	202	0.041	0.040	8	\$84.00	100%	50%	6	0%	20%	76%	47%	1.2	2.1	2.1	0.5
417	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Food Service	ROB	2150	64%	1377	0.260	0.214	10	\$784.00	100%	50%	1	100%	25%	69%	39%	1.0	1.7	1.9	0.5
418	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Food Service	Retro	2150	2%	43	0.008	0.007	20	\$60.00	100%	50%	2	100%	80%	69%	22%	0.6	1.1	1.4	0.4
419	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Food Service	ROB	3303	32%	1041	0.197	0.161	5	\$92.90	100%	50%	3	20%	85%	69%	49%	3.5	6.1	5.3	0.6
420	Commercial	HotWater	Faucet Aerator	Biz-Custom	Food Service	Retro	647	22%	142	0.027	0.022	10	\$6.70	100%	50%	4	20%	85%	69%	50%	11.8	20.6	17.0	0.6
421	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Food Service	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	2.1	3.6	3.4	0.5
422	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Food Service	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.9	2.6	0.4
423	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Food Service	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.9	2.6	0.4
424	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Food Service	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.0	1.6	0.3
425	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Food Service	Retro	1742	66%	1154	0.000	0.157	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.2	2.1	2.8	0.4
426	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Food Service	Retro	3235	60%	1953	0.000	0.266	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3
427	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Food Service	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.0	1.6	0.3
428	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Food Service																			

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
437	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Food Service	Retro	785	30%	235	0.036	0.030	15	\$138.87	100%	50%	6	94%	11%	74%	50%	1.1	2.0	2.3	0.4
438	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Food Service	Retro	66	43%	28	0.004	0.004	5	\$32.50	100%	50%	7	1%	85%	74%	34%	0.2	0.4	0.9	0.2
439	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Food Service	Retro	385	61%	237	0.028	0.027	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.3
440	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Food Service	Retro	9932	50%	4966	0.586	0.559	20	\$1,586.00	100%	50%	2	25%	21%	76%	49%	2.4	4.1	4.6	0.5
441	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Food Service	Retro	1909	83%	1585	0.187	0.178	10	\$483.00	100%	50%	3	1%	10%	76%	50%	1.5	2.7	3.1	0.4
442	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Food Service	Retro	2984	25%	746	0.088	0.084	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	2.0	0.0	2.8	0.0
443	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Food Service	ROB	3096	3%	85	0.010	0.010	15	\$59.00	100%	50%	5	0%	70%	76%	41%	0.9	1.6	2.0	0.4
444	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Food Service	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	32%	10%	76%	19%	0.5	0.9	0.8	0.6
445	Commercial	Motors	Cogged V-Belt	Biz-Custom	Food Service	Retro	17237	3%	534	0.067	0.070	15	\$383.81	100%	50%	1	50%	10%	76%	40%	0.9	1.6	2.0	0.4
446	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Food Service	Retro	3805	34%	1290	0.161	0.168	15	\$168.00	100%	50%	2	100%	10%	76%	54%	5.0	8.8	8.7	0.5
447	Commercial	Motors	Power Drive Systems	Biz-Custom	Food Service	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	5.0	8.8	8.7	0.5
448	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Food Service	Retro	33406	31%	10222	1.276	1.332	15	\$527.50	100%	50%	2	100%	1%	76%	56%	12.7	22.1	21.2	0.5
449	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Food Service	Retro	551	26%	110	0.013	0.012	6	\$0.00	100%		1	5%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
450	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Food Service	Retro	1398	10%	140	0.000	0.142	5	\$40.00	100%	50%	2	31%	20%	76%	50%	2.1	3.6	2.0	0.9
451	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Food Service	Retro	1126	15%	169	0.000	0.108	8	\$70.00	100%	50%	2	31%	20%	76%	47%	1.6	2.7	2.1	0.7
452	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Food Service	ROB	1621	23%	368	0.042	0.041	8	\$118.00	100%	50%	3	31%	25%	76%	49%	1.2	2.1	2.5	0.4
453	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Food Service	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	31%	25%	76%	48%	1.0	1.7	2.1	0.4
454	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Food Service	Retro	86783	18%	15778	1.863	1.776	15	\$480.00	100%	50%	3	31%	25%	76%	56%	20.8	36.1	35.6	0.5
455	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Food Service	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	31%	25%	76%	49%	2.3	4.0	4.4	0.4
456	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Food Service	Retro	764	47%	358	0.042	0.040	15	\$82.00	100%	50%	4	31%	25%	76%	52%	2.8	4.8	5.2	0.5
457	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Food Service	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	1%	10%	76%	48%	1.6	2.7	3.2	0.4
458	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Food Service	Retro	88	50%	44	0.006	0.005	4	\$10.22	100%	50%	1	10%	50%	64%	41%	1.0	1.7	2.0	0.4
459	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Food Service	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	3.4	5.9	6.1	0.5
460	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Food Service	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	7%	25%	64%	19%	0.4	0.7	1.2	0.3
461	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Food Service	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.5	0.8	1.3	0.3
462	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Food Service	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	22%	25%	64%	12%	0.2	0.4	0.9	0.2
463	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Food Service	Retro	2884	55%	1586	0.222	0.174	15	\$304.59	100%	50%	6	6%	80%	64%	41%	3.4	5.9	6.1	0.5
464	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Food Service	Retro	2236	32%	716	0.100	0.079	15	\$155.00	100%	50%	7	6%	25%	64%	41%	3.0	5.2	5.4	0.5
465	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Food Service	Retro	2960	50%	1480	0.163	0.15	15	\$1,170.00	100%	50%	8	8%	25%	64%	29%	0.8	1.4	1.9	0.4
466	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Food Service	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	14%	25%	64%	37%	1.2	2.0	2.4	0.4
467	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Food Service	Retro	622	59%	368	0.052	0.040	12	\$127.00	100%	50%	10	4%	25%	64%	39%	1.6	2.8	3.1	0.4
468	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Food Service	Retro	2884	55%	1586	0.222	0.174	15	\$304.59	100%	50%	11	2%	80%	64%	41%	3.4	5.9	6.1	0.5
469	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Food Service	Retro	641	38%	242	0.034	0.027	10	\$101.60	100%	50%	12	2%	2%	64%	37%	1.2	2.0	2.4	0.4
470	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Food Service	ROB	2140	29%	629	0.088	0.069	12	\$1,238.50	100%	50%	13	13%	54%	64%	15%	0.3	0.5	1.0	0.3
471	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Food Service	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	13%	54%	64%	10%	0.1	0.2	0.7	0.2
472	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Food Service	Retro	1113	75%	832	0.117	0.092	12	\$200.00	100%	50%	14	5%	75%	64%	41%	2.3	4.0	4.2	0.5
473	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Food Service	Retro	2512	59%	1486	0.208	0.164	12	\$127.00	100%	50%	15	5%	25%	64%	45%	6.5	11.3	11.0	0.5
474	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Food Service	ROB	6374	20%	1275	0.179	0.140	12	\$1,650.50	100%	50%	16	4%	54%	64%	21%	0.4	0.7	1.2	0.3
475	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Food Service	ROB	4522	7%	305	0.043	0.034	12	\$1,520.50	100%	50%	16	4%	54%	64%	10%	0.1	0.2	0.7	0.1
476	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Food Service	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	95%	25%	64%	13%	0.5	1.0	0.8	0.6
477	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Food Service	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	95%	25%	64%	41%	1.2	2.1	2.4	0.4
478	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Food Service	ROB	6993	10%	721	0.101	0.079	10	\$222.00	100%	50%	19	5%	44%	64%	39%	1.6	2.7	3.0	0.5
479	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Food Service	ROB	1278	12%	153	0.022	0.017	14	\$500.00	100%	50%	20	0%	30%	64%	11%	0.2	0.3	0.8	0.2
480	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Food Service	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	8%	35%	64%	43%	3.4	5.9	6.0	0.5
481	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Food Service	Retro	12486	63%	7804	0.000	0.000	15	\$147.41	100%	50%	1	26%	20%	76%	57%	22.8	39.6	57.1	0.3
482	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Food Service	Retro	19919	82%	16287	2.471	2.158	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.7	4.7	4.7	0.5
483	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Food Service	Retro	21909	83%	18277	2.773	2.422	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	3.0	5.2	5.2	0.5
484	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Food Service	Retro	23903	82%	19579	2.971	2.595	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	3.2	5.5	5.4	0.5
485	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Food Service	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.7	3.0	3.2	0.5
486	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Food Service	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%		2	0%	20%	76%	57%	0.0	0.0	0.0	0.0
487	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Food Service	Retro	652	50%	326	0.000	0.000	10	\$187.50	100%	50%	3	100%	20%	76%	44%	5.0	0.9	6.9	0.3
488	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Food Service	Retro	783	47%	367	0.094	0.000	10	\$341.21	100%	50%	4	100%	20%	76%	35%	1.1	0.9	1.9	0.3
489	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Food Service	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.8	10.0	9.4	0.5
490	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Food Service	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.5	2.6	2.8	0.5
491	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Food Service	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	28%	0.7	1.2	1.7	0.4
492	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Food Service	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	7.4	12.9	11.8	0.5
493	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Health	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	3.3	5.8	5.8	0.5
494	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Health	ROB	1583	21%	329	0.043	0.036	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.5	2.6	3.0	0.4
495	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Health	Retro	103919	35%	36372	4.730	3.943	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	15.1	26.2	25.1	

C&I Measure Summary: Montana

MDU_Montana																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
514	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Health	ROB	860	24%	202	0.072	0.003	15	\$218.46	100%	50%	2	25%	10%	76%	33%	0.7	1.2	1.5	0.4	
515	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Health	Retro	931	7%	65	0.023	0.001	3	\$5.33	100%	50%	3	50%	50%	76%	55%	2.4	4.3	3.8	0.6	
516	Commercial	Cooling	Air Side Economizer	Biz-Custom	Health	Retro	771	20%	154	0.055	0.003	15	\$153.28	100%	50%	4	50%	25%	76%	34%	0.8	1.3	1.6	0.4	
517	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Health	Retro	808	20%	162	0.058	0.003	15	\$197.50	100%	50%	5	50%	20%	76%	31%	0.6	1.1	1.4	0.4	
518	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	798	13%	100	0.036	0.002	15	\$115.00	100%	50%	6	0%	10%	76%	32%	0.7	1.1	1.4	0.4	
519	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	798	22%	177	0.064	0.003	15	\$514.00	100%	50%	6	0%	10%	76%	18%	0.3	0.5	0.9	0.3	
520	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	798	33%	266	0.095	0.005	15	\$630.50	100%	50%	6	0%	10%	76%	21%	0.3	0.6	1.0	0.3	
521	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Health	ROB	3194	14%	452	0.162	0.008	11	\$175.00	100%	50%	7	0%	20%	76%	48%	1.6	2.7	2.7	0.5	
522	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Health	ROB	1030	15%	150	0.054	0.003	8	\$84.00	100%	50%	8	0%	20%	76%	44%	0.8	1.5	1.7	0.4	
523	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Health	ROB	816	9%	74	0.026	0.001	23	\$126.00	100%	50%	9	45%	10%	76%	24%	0.6	1.0	1.3	0.4	
524	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Health	ROB	410	23%	93	0.033	0.002	23	\$126.00	100%	50%	10	5%	10%	76%	29%	0.7	1.3	1.6	0.4	
525	Commercial	Cooling	Window Film	Biz-Custom	Health	Retro	6000	4%	264	0.095	0.004	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.4	1.7	-0.6	0.5	
526	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Health	Retro	6000	6%	360	0.129	0.006	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.5	0.9	1.3	0.4	
527	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Health	Retro	860	0%	0	0.309	0.015	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0	
528	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	4250	6%	250	0.030	0.053	15	\$135.00	100%	50%	1	0%	10%	76%	44%	1.3	2.3	2.5	0.5	
529	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	4250	12%	498	0.060	0.105	15	\$445.76	100%	50%	1	0%	10%	76%	36%	0.8	1.4	1.7	0.4	
530	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	4250	16%	680	0.081	0.144	15	\$520.06	100%	50%	1	0%	10%	76%	39%	1.0	1.7	1.9	0.4	
531	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4730	6%	277	0.033	0.059	15	\$100.00	100%	50%	2	11%	10%	76%	49%	2.0	3.5	3.5	0.5	
532	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4730	11%	519	0.062	0.110	15	\$171.08	100%	50%	2	11%	10%	76%	49%	2.2	3.8	3.7	0.5	
533	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4885	6%	301	0.036	0.064	15	\$100.00	100%	50%	3	11%	10%	76%	49%	2.2	3.8	3.7	0.5	
534	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4885	11%	557	0.067	0.118	15	\$182.26	100%	50%	3	11%	10%	76%	49%	2.2	3.9	3.8	0.5	
535	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	5080	6%	326	0.039	0.069	15	\$100.00	100%	50%	4	11%	10%	76%	50%	2.4	4.1	4.0	0.5	
536	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	5080	12%	601	0.072	0.127	15	\$201.80	100%	50%	4	11%	10%	76%	49%	2.2	3.8	3.7	0.5	
537	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Health	ROB	3162	3%	99	0.012	0.021	25	\$108.00	100%	50%	5	0%	20%	76%	33%	0.9	1.6	1.9	0.4	
538	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Health	ROB	3162	5%	168	0.020	0.036	25	\$108.00	100%	50%	5	0%	20%	76%	42%	1.5	2.7	2.8	0.5	
539	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Health	ROB	5129	5%	250	0.030	0.053	8	\$84.00	100%	50%	6	0%	20%	76%	49%	1.4	2.4	2.4	0.5	
540	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Health	ROB	2205	64%	1412	0.264	0.154	10	\$784.00	100%	50%	1	100%	0%	69%	39%	0.9	1.6	1.9	0.4	
541	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Health	Retro	2205	2%	44	0.008	0.005	20	\$60.00	100%	50%	2	100%	80%	69%	22%	0.6	1.1	1.5	0.4	
542	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Health	ROB	3303	32%	1041	0.195	0.114	5	\$92.90	100%	50%	3	20%	85%	69%	49%	3.3	5.7	5.3	0.5	
543	Commercial	HotWater	Faucet Aerator	Biz-Custom	Health	Retro	647	22%	142	0.027	0.016	10	\$6.70	100%	50%	4	20%	85%	69%	50%	11.0	19.1	17.0	0.6	
544	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Health	ROB	2239	29%	660	0.124	0.072	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.9	3.4	3.4	0.5	
545	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Health	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.8	2.6	0.4	
546	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Health	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.8	2.6	0.4	
547	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Health	Retro	1589	60%	959	0.000	0.128	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
548	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Health	Retro	1742	66%	1154	0.000	0.154	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.2	2.1	2.8	0.4	
549	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Health	Retro	3235	60%	1953	0.000	0.261	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3	
550	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Health	Retro	1589	60%	959	0.000	0.128	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
551	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Health	Retro	349	68%	236	0.032	0.023	9	\$27.00	100%	50%	1	18%	45%	74%	62%	3.8	6.6	6.7	0.5	
552	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Health	Retro	251	74%	185	0.025	0.018	9	\$59.00	100%	50%	1	18%	45%	74%	56%	1.4	2.4	2.7	0.4	
553	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Health	Retro	225	45%	101	0.014	0.010	9	\$1.88	100%	50%	2	81%	45%	74%	66%	23.3	40.5	38.7	0.5	
554	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Health	Retro	509	50%	255	0.035	0.024	9	\$70.00	100%	50%	2	81%	45%	74%	57%	1.6	2.8	3.1	0.4	
555	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Health	Retro	1009	61%	613	0.084	0.059	9	\$44.00	100%	50%	3	0%	45%	74%	64%	6.1	10.5	10.4	0.5	
556	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Health	Retro	4737	68%	3223	0.443	0.309	9	\$330.00	100%	50%	4	0%	45%	74%	62%	4.2	7.4	7.5	0.5	
557	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Health	Retro	187	100%	187	0.026	0.018	11	\$12.00	100%	50%	5	81%	0%	74%	64%	7.9	13.8	13.6	0.5	
558	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Health	Retro	1095	30%	329	0.045	0.031	10	\$57.50	100%	50%	6	82%	11%	74%	59%	2.7	4.7	4.9	0.5	
559	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Health	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	82%	11%	74%	57%	2.1	3.7	4.1	0.5	
560	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Health	Retro	855	30%	257	0.035	0.025	15	\$151.37	100%	50%	6	82%	11%	74%	50%	1.1	1.9	2.3	0.4	
561	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Health	Retro	70	43%	30	0.004	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	35%	0.2	0.4	0.9	0.2	
562	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Health	Retro	385	61%	237	0.031	0.026	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.3	
563	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Health	Retro	9932	50%	4966	0.646	0.538	20	\$1,586.00	100%	50%	2	37%	21%	76%	49%	2.4	4.2	4.6	0.5	
564	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Health	Retro	1909	83%	1585	0.206	0.172	10	\$483.00	100%	50%	3	1%	10%	76%	50%	1.6	2.7	3.1	0.4	
565	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Health	Retro	2984	25%	746	0.097	0.081	10	\$20,309.70	100%	50%	4	3%	10%	76%	15%	2.0	0.0	2.8	0.0	
566	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Health	ROB	3096	3%	85	0.011	0.009	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.9	1.6	2.0	0.4	
567	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Health	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	0%	10%	76%	19%	0.5	0.9	0.8	0.6	
568	Commercial	Motors	Cogged V-Belt	Biz-Custom	Health	Retro	17237	3%	534	0.088	0.040	15	\$383.81	100%	50%	1	50%	10%	76%	40%	0.9	1.5	2.0	0.4	
569	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Health	Retro	3805	34%	1290	0.212	0.096	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.9	8.5	8.7	0.5	
570	Commercial	Motors	Power Drive Systems	Biz-Custom	Health	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.9	8.5	8.7	0.5	
571	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Health	Retro	33406	31%	10222	1.684	0.763	15	\$527.50	100%	50%	2	100%	1%	76%	56%	12.4	21.5	21.2	0.5	
572	Commercial	PlugLoads_Office																							

C&I Measure Summary: Montana

MDU_Montana																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
593	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Health	ROB	2140	29%	629	0.097	0.073	12	\$1,238.50	100%	50%	13	14%	54%	64%	15%	0.3	0.5	1.0	0.3	
594	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Health	ROB	1410	20%	281	0.043	0.033	12	\$1,210.50	100%	50%	13	14%	54%	64%	10%	0.1	0.2	0.7	0.2	
595	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Health	Retro	1113	75%	832	0.129	0.097	12	\$200.00	100%	50%	14	5%	25%	64%	41%	2.4	4.1	4.2	0.5	
596	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Health	Retro	2512	59%	1486	0.230	0.173	12	\$127.00	100%	50%	15	5%	25%	64%	45%	6.7	11.6	11.0	0.5	
597	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Health	ROB	6374	20%	1275	0.197	0.148	12	\$1,650.50	100%	50%	16	5%	54%	64%	21%	0.4	0.8	1.2	0.3	
598	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Health	ROB	4522	7%	305	0.047	0.035	12	\$1,520.50	100%	50%	16	5%	54%	64%	10%	0.1	0.2	0.7	0.1	
599	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Health	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	91%	25%	64%	13%	0.6	1.0	0.8	0.6	
600	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Health	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	91%	25%	64%	41%	1.3	2.2	2.4	0.5	
601	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Health	ROB	6993	10%	721	0.112	0.084	10	\$222.00	100%	50%	19	6%	44%	64%	39%	1.6	2.8	3.0	0.5	
602	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Health	ROB	1278	12%	153	0.024	0.018	14	\$500.00	100%	50%	20	3%	30%	64%	11%	0.2	0.3	0.8	0.2	
603	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Health	Retro	115	74%	84	0.013	0.010	9	\$11.00	100%	50%	21	8%	35%	64%	43%	3.5	6.1	6.0	0.5	
604	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Health	Retro	9151	63%	5719	0.000	0.000	15	\$147.41	100%	50%	1	22%	35%	76%	56%	16.6	28.9	42.0	0.3	
605	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Health	Retro	19919	82%	16287	2.111	1.873	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.6	4.4	4.7	0.5	
606	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Health	Retro	21909	83%	18277	2.369	2.102	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.8	4.9	5.2	0.5	
607	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Health	Retro	23903	82%	19579	2.537	2.252	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	3.0	5.2	5.4	0.5	
608	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Health	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.6	2.8	3.2	0.4	
609	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Health	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	50%	2	85%	20%	76%	57%	0.0	0.0	0.0	0.0	
610	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Health	Retro	827	27%	226	0.000	0.000	10	\$187.50	100%	50%	3	100%	35%	76%	38%	2.2	0.7	3.5	0.2	
611	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Health	Retro	0	0%	0	0.000	0.000	10	\$0.00	100%	0%	4	100%	35%	76%	57%	#DIV/0!	0.0	0.0	0.0	
612	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Health	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.5	9.5	9.4	0.5	
613	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Health	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.4	2.4	2.8	0.4	
614	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Health	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	28%	0.7	1.2	1.7	0.4	
615	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Health	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	7.0	12.2	11.8	0.5	
616	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Lodging	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	3.4	5.9	5.8	0.5	
617	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	ROB	ROB	1583	21%	329	0.038	0.042	13	\$127.00	100%	50%	2	329	20%	76%	48%	1.5	2.6	3.0	0.4	
618	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Lodging	Retro	103919	35%	36372	4.205	4.612	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	15.2	26.4	25.1	0.5	
619	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Lodging	Retro	103919	2%	1970	0.228	0.250	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.7	8.2	8.2	0.5	
620	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Lodging	Retro	1480	50%	740	0.086	0.094	15	\$49.50	100%	50%	5	5%	20%	76%	55%	9.7	16.8	16.5	0.5	
621	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Lodging	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	2.3	3.9	4.2	0.5	
622	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Lodging	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.2	2.1	2.4	0.4	
623	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Lodging	ROB	17380	13%	2211	0.454	0.141	12	\$2,162.00	100%	50%	1	14%	17%	76%	35%	0.6	1.0	1.4	0.4	
624	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Lodging	ROB	9273	15%	1349	0.416	0.129	12	\$1,682.00	100%	50%	2	18%	53%	76%	31%	0.5	0.9	1.2	0.4	
625	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Lodging	ROB	27611	50%	13869	4.275	1.326	12	\$3,824.00	100%	50%	2	18%	53%	76%	50%	2.4	4.2	3.8	0.6	
626	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Lodging	ROB	18182	14%	2573	0.396	0.123	12	\$2,126.00	100%	50%	3	27%	24%	76%	38%	0.6	1.1	1.6	0.3	
627	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Lodging	ROB	19542	67%	13154	3.337	1.035	12	\$2,490.00	100%	50%	4	6%	45%	76%	52%	3.3	5.7	5.3	0.5	
628	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Lodging	ROB	10950	85%	9340	1.535	0.476	12	\$1,891.00	100%	50%	5	3%	16%	76%	52%	2.6	4.5	5.0	0.5	
629	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Lodging	ROB	4380	79%	3438	0.698	0.216	12	\$1,497.00	100%	50%	5	3%	16%	76%	47%	1.3	2.3	2.6	0.4	
630	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Lodging	ROB	56463	36%	20545	1.450	3.976	16	\$255.00	100%	50%	6	26%	61%	76%	57%	56.4	98.1	90.8	0.5	
631	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Lodging	ROB	47891	29%	13861	0.978	2.682	16	\$1,375.00	100%	50%	6	26%	61%	76%	55%	7.1	12.3	11.8	0.5	
632	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	679	14%	96	0.037	0.002	15	\$153.28	100%	50%	1	14%	10%	76%	26%	0.5	0.8	1.2	0.4	
633	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	679	19%	128	0.049	0.003	15	\$214.59	100%	50%	1	14%	10%	76%	25%	0.5	0.8	1.1	0.4	
634	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	679	30%	207	0.079	0.005	15	\$398.52	100%	50%	1	14%	10%	76%	22%	0.4	0.7	1.1	0.3	
635	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Lodging	ROB	763	9%	69	0.027	0.002	15	\$71.00	100%	50%	2	14%	10%	76%	34%	0.8	1.3	1.5	0.4	
636	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Lodging	ROB	763	13%	102	0.039	0.002	15	\$109.23	100%	50%	2	14%	10%	76%	33%	0.7	1.3	1.5	0.4	
637	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Lodging	ROB	763	24%	179	0.069	0.004	15	\$218.46	100%	50%	2	14%	10%	76%	31%	0.6	1.1	1.4	0.4	
638	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Lodging	Retro	826	7%	58	0.022	0.001	3	\$5.33	100%	50%	3	27%	50%	76%	55%	2.3	3.9	3.4	0.6	
639	Commercial	Cooling	Air Side Economizer	Biz-Custom	Lodging	Retro	684	20%	137	0.052	0.003	15	\$153.28	100%	50%	4	27%	25%	76%	33%	0.7	1.2	1.5	0.4	
640	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Lodging	Retro	717	20%	143	0.055	0.003	15	\$197.50	100%	50%	5	27%	20%	76%	29%	0.6	1.0	1.3	0.4	
641	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	708	13%	89	0.034	0.002	15	\$115.00	100%	50%	6	0%	10%	76%	30%	0.6	1.0	1.3	0.4	
642	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	708	22%	157	0.060	0.004	15	\$514.00	100%	50%	6	0%	10%	76%	17%	0.2	0.4	0.8	0.3	
643	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	708	33%	236	0.090	0.005	15	\$630.50	100%	50%	6	0%	10%	76%	19%	0.3	0.5	0.9	0.3	
644	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Lodging	ROB	2833	14%	401	0.153	0.009	11	\$175.00	100%	50%	7	0%	20%	76%	47%	1.4	2.5	2.4	0.5	
645	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Lodging	ROB	914	15%	133	0.051	0.003	8	\$84.00	100%	50%	8	15%	20%	76%	42%	0.8	1.3	1.5	0.4	
646	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Lodging	ROB	724	9%	65	0.025	0.001	23	\$126.00	100%	50%	9	41%	10%	76%	22%	0.5	0.9	1.2	0.4	
647	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Lodging	ROB	364	23%	83	0.032	0.002	23	\$126.00	100%	50%	10	5%	10%	76%	27%	0.7	1.2	1.4	0.4	
648	Commercial	Cooling	Window Film	Biz-Custom	Lodging	Retro	6000	4%	264	0.101	0.006	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.5	1.7	-0.6	0.5	
649	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Lodging	Retro	6000	6%	360	0.138	0.008	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.5	0.9	1.3	0.4	
650	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Lodging	Retro	763	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0	
651	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	4404	6%	249																

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MDU_Montana																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
658	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5273	6%	334	0.043	0.072	15	\$100.00	100%	50%	4	9%	10%	76%	50%	2.5	4.3	4.1	0.5	
659	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5273	12%	619	0.080	0.133	15	\$201.80	100%	50%	4	9%	10%	76%	49%	2.3	3.9	3.8	0.5	
660	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Lodging	ROB	3259	3%	100	0.013	0.022	25	\$108.00	100%	50%	5	15%	20%	76%	33%	0.9	1.6	1.9	0.4	
661	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Lodging	ROB	3259	5%	162	0.021	0.035	25	\$108.00	100%	50%	5	15%	20%	76%	41%	1.5	2.6	2.8	0.5	
662	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Lodging	ROB	5328	4%	233	0.030	0.050	8	\$84.00	100%	50%	6	15%	20%	76%	49%	1.3	2.2	2.3	0.5	
663	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Lodging	ROB	1132	64%	725	0.051	0.140	10	\$784.00	100%	50%	1	100%	29%	69%	26%	0.5	0.8	1.2	0.3	
664	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Lodging	Retro	1132	2%	23	0.002	0.004	20	\$60.00	100%	50%	2	100%	80%	69%	14%	0.3	0.5	1.0	0.3	
665	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Lodging	ROB	3303	32%	1041	0.073	0.201	5	\$92.90	100%	50%	3	20%	85%	69%	49%	3.1	5.5	5.3	0.5	
666	Commercial	HotWater	Faucet Aerator	Biz-Custom	Lodging	Retro	647	22%	142	0.010	0.028	10	\$6.70	100%	50%	4	20%	85%	69%	50%	10.6	18.4	17.0	0.5	
667	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Lodging	ROB	2239	29%	660	0.047	0.128	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.9	3.2	3.4	0.5	
668	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Lodging	Retro	856	66%	567	0.000	0.081	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
669	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Lodging	Retro	856	66%	567	0.000	0.081	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
670	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Lodging	Retro	1589	60%	959	0.000	0.137	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
671	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Lodging	Retro	1742	66%	1154	0.000	0.164	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.2	2.2	2.8	0.4	
672	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Lodging	Retro	3235	60%	1953	0.000	0.278	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3	
673	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Lodging	Retro	1589	60%	959	0.000	0.137	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
674	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Lodging	Retro	356	68%	241	0.023	0.027	8	\$27.00	100%	50%	1	53%	45%	74%	62%	3.4	5.9	6.3	0.5	
675	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Lodging	Retro	256	74%	189	0.018	0.021	8	\$59.00	100%	50%	1	53%	45%	74%	56%	1.2	2.1	2.6	0.4	
676	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Lodging	Retro	229	45%	103	0.010	0.012	8	\$1.88	100%	50%	2	46%	45%	74%	66%	20.8	36.2	35.7	0.5	
677	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Lodging	Retro	519	50%	260	0.025	0.029	8	\$70.00	100%	50%	2	46%	45%	74%	57%	1.4	2.5	2.9	0.4	
678	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Lodging	Retro	1029	61%	626	0.060	0.070	8	\$44.00	100%	50%	3	1%	45%	74%	64%	5.4	9.4	9.7	0.5	
679	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Lodging	Retro	4832	68%	3288	0.317	0.369	8	\$330.00	100%	50%	4	0%	45%	74%	62%	3.8	6.6	6.9	0.5	
680	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Lodging	Retro	191	100%	191	0.018	0.021	11	\$12.00	100%	50%	5	46%	0%	74%	64%	7.8	13.6	13.9	0.5	
681	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Lodging	Retro	1117	30%	335	0.032	0.038	10	\$57.50	100%	50%	6	47%	11%	74%	60%	2.7	4.6	5.0	0.5	
682	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Lodging	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	47%	11%	74%	57%	2.1	3.6	4.1	0.4	
683	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Lodging	Retro	872	30%	262	0.025	0.029	15	\$154.42	100%	50%	6	47%	11%	74%	50%	1.0	1.8	2.3	0.4	
684	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Lodging	Retro	67	43%	29	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	34%	0.2	0.4	0.9	0.2	
685	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Lodging	Retro	385	61%	237	0.027	0.030	1	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.3	
686	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Lodging	Retro	9932	50%	4966	0.574	0.630	20	\$1,586.00	100%	50%	2	31%	21%	76%	49%	2.4	4.2	4.6	0.5	
687	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Lodging	Retro	262	83%	217	0.025	0.028	10	\$483.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.8	0.2	
688	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Lodging	Retro	2984	25%	746	0.086	0.095	10	\$20,309.70	100%	50%	4	2%	10%	76%	15%	2.0	0.0	2.8	0.0	
689	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Lodging	ROB	3096	3%	85	0.010	0.011	15	\$59.00	100%	50%	5	0%	70%	76%	41%	0.9	1.6	2.0	0.4	
690	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Lodging	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	38%	10%	76%	19%	0.5	0.9	0.8	0.6	
691	Commercial	Motors	Cogged V-Belt	Biz-Custom	Lodging	Retro	29207	3%	905	0.117	0.100	15	\$383.81	100%	50%	1	50%	10%	76%	47%	1.5	2.6	3.0	0.4	
692	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Lodging	Retro	3805	34%	1290	0.166	0.143	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.9	8.6	8.7	0.5	
693	Commercial	Motors	Power Drive Systems	Biz-Custom	Lodging	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.9	8.6	8.7	0.5	
694	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Lodging	Retro	56602	31%	17320	2.234	1.916	15	\$527.50	100%	50%	2	100%	1%	76%	56%	21.1	36.6	35.6	0.5	
695	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Lodging	Retro	551	26%	110	0.013	0.014	6	\$0.00	100%	50%	1	9%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0	
696	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Lodging	Retro	1398	10%	140	0.000	0.160	5	\$40.00	100%	50%	2	53%	20%	76%	50%	2.3	4.0	2.0	1.0	
697	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Lodging	Retro	1126	15%	169	0.000	0.121	8	\$70.00	100%	50%	2	53%	20%	76%	47%	1.7	2.9	2.1	0.7	
698	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Lodging	ROB	1621	23%	368	0.042	0.047	8	\$118.00	100%	50%	3	8%	25%	76%	49%	1.3	2.2	2.5	0.4	
699	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Lodging	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	8%	25%	76%	48%	1.0	1.7	2.1	0.4	
700	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Lodging	Retro	86783	18%	15778	1.824	2.001	15	\$480.00	100%	50%	3	8%	25%	76%	56%	21.2	36.9	35.6	0.5	
701	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Lodging	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	8%	25%	76%	49%	2.3	4.0	4.4	0.4	
702	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Lodging	Retro	764	47%	358	0.041	0.045	15	\$82.00	100%	50%	4	8%	25%	76%	52%	2.8	4.9	5.2	0.5	
703	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Lodging	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	0%	10%	76%	48%	1.6	2.8	3.2	0.4	
704	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Lodging	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	8%	50%	64%	48%	#DIV/0!	0.0	0.0	0.0	
705	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Lodging	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	3.4	5.9	6.1	0.5	
706	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Lodging	Retro	1112	25%	278	0.038	0.031	15	\$431.00	100%	50%	3	5%	25%	64%	19%	0.4	0.7	1.2	0.3	
707	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Lodging	Retro	831	50%	416	0.057	0.047	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.5	0.8	1.3	0.3	
708	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Lodging	Retro	813	20%	163	0.022	0.018	15	\$477.00	100%	50%	5	18%	25%	64%	12%	0.2	0.4	0.9	0.2	
709	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Lodging	Retro	2884	55%	1586	0.217	0.179	15	\$304.59	100%	50%	6	5%	80%	64%	41%	3.4	5.9	6.1	0.5	
710	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Lodging	Retro	2236	32%	716	0.098	0.081	15	\$155.00	100%	50%	7	5%	25%	64%	41%	3.0	5.2	5.4	0.5	
711	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Lodging	Retro	2960	50%	1480	0.202	0.167	15	\$1,170.00	100%	50%	8	7%	25%	64%	29%	0.8	1.4	1.9	0.4	
712	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Lodging	Retro	631	67%	423	0.058	0.048	12	\$200.00	100%	50%	9	14%	25%	64%	37%	1.2	2.0	2.4	0.4	
713	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Lodging	Retro	622	59%	368	0.050	0.042	12	\$127.00	100%	50%	10	4%	25%	64%	39%	1.6	2.8	3.1	0.4	
714	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Lodging	Retro	2884	55%	1586	0.217	0.179	15	\$304.59	100%	50%	11	2%	80%	64%	41%	3.4	5.9	6.1	0.5	
715	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Lodging	Retro	441	34%	149	0.020	0.017	10	\$90.40	100%	50%	12	2%	2%	64%	34%	0.8	1.4	1.8	0.4	
716	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Lodging	ROB	2140	29%	629	0.086	0.071	12	\$1,238.50	100%											

C&I Measure Summary: Montana

MDU_Montana																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
742	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Retail	Retro	103919	2%	1970	0.216	0.222	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.6	8.0	8.2	0.5	
743	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Retail	Retro	1480	50%	740	0.081	0.083	15	\$49.50	100%	50%	5	5%	20%	76%	55%	9.4	16.3	16.5	0.5	
744	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Retail	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	2.2	3.8	4.2	0.5	
745	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Retail	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.2	2.1	2.4	0.4	
746	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Retail	ROB	11904	13%	1514	0.454	0.198	12	\$2,162.00	100%	50%	1	14%	17%	76%	28%	0.5	0.8	1.1	0.4	
747	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Retail	ROB	6351	15%	924	0.416	0.181	12	\$1,682.00	100%	50%	2	18%	53%	76%	23%	0.5	0.8	1.0	0.4	
748	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Retail	ROB	18912	50%	9499	4.275	1.863	12	\$3,824.00	100%	50%	2	18%	53%	76%	48%	2.1	3.7	2.7	0.7	
749	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Retail	ROB	12454	14%	1762	0.396	0.173	12	\$2,126.00	100%	50%	3	27%	24%	76%	31%	0.5	0.9	1.2	0.4	
750	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Retail	ROB	13385	67%	9010	3.337	1.454	12	\$2,490.00	100%	50%	4	6%	45%	76%	50%	2.8	4.9	3.8	0.6	
751	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Retail	ROB	7500	85%	6398	1.535	0.669	12	\$1,891.00	100%	50%	5	3%	16%	76%	50%	2.1	3.7	3.5	0.5	
752	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Retail	ROB	3000	79%	2355	0.698	0.304	12	\$1,497.00	100%	50%	5	3%	16%	76%	42%	1.1	1.9	1.9	0.5	
753	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Retail	ROB	41082	34%	14133	2.672	2.193	16	\$255.00	100%	50%	6	26%	61%	76%	57%	43.2	75.1	62.6	0.6	
754	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Retail	ROB	35485	26%	9319	1.762	1.446	16	\$1,375.00	100%	50%	6	26%	61%	76%	53%	5.3	9.2	8.1	0.6	
755	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Retail	ROB	379	14%	53	0.029	0.000	15	\$153.28	100%	50%	1	15%	10%	76%	18%	0.3	0.5	0.9	0.3	
756	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Retail	ROB	379	19%	72	0.038	0.001	15	\$214.59	100%	50%	1	15%	10%	76%	18%	0.3	0.5	0.9	0.3	
757	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Retail	ROB	379	30%	115	0.062	0.001	15	\$398.52	100%	50%	1	15%	10%	76%	16%	0.3	0.5	0.8	0.3	
758	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Retail	ROB	425	9%	39	0.021	0.000	15	\$71.00	100%	50%	2	15%	10%	76%	23%	0.5	0.8	1.1	0.4	
759	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Retail	ROB	425	13%	57	0.030	0.000	15	\$109.23	100%	50%	2	15%	10%	76%	22%	0.5	0.8	1.1	0.4	
760	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Retail	ROB	425	24%	100	0.054	0.001	15	\$218.46	100%	50%	2	15%	10%	76%	21%	0.4	0.7	1.0	0.4	
761	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Retail	Retro	461	7%	32	0.017	0.000	3	\$5.33	100%	50%	3	29%	50%	76%	53%	1.5	2.5	2.1	0.6	
762	Commercial	Cooling	Air Side Economizer	Biz-Custom	Retail	Retro	381	20%	76	0.041	0.001	15	\$153.28	100%	50%	4	29%	25%	76%	22%	0.4	0.8	1.0	0.4	
763	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Retail	Retro	400	20%	80	0.043	0.001	15	\$197.50	100%	50%	5	29%	20%	76%	20%	0.4	0.6	0.9	0.3	
764	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	395	13%	49	0.026	0.000	15	\$115.00	100%	50%	6	24%	10%	76%	21%	0.4	0.7	1.0	0.3	
765	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	395	22%	88	0.047	0.001	15	\$514.00	100%	50%	6	24%	10%	76%	15%	0.2	0.3	0.7	0.2	
766	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	395	33%	132	0.070	0.001	15	\$630.50	100%	50%	6	24%	10%	76%	15%	0.2	0.3	0.7	0.2	
767	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Retail	ROB	1580	14%	224	0.120	0.002	11	\$175.00	100%	50%	7	24%	20%	76%	39%	0.9	1.6	1.6	0.5	
768	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Retail	ROB	510	15%	74	0.040	0.001	8	\$84.00	100%	50%	8	18%	20%	76%	33%	0.5	0.9	1.1	0.4	
769	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Retail	ROB	404	9%	36	0.019	0.000	23	\$126.00	100%	50%	9	26%	10%	76%	16%	0.3	0.6	0.9	0.3	
770	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Retail	ROB	203	23%	46	0.025	0.000	23	\$126.00	100%	50%	10	3%	10%	76%	19%	0.4	0.7	1.0	0.4	
771	Commercial	Cooling	Window Film	Biz-Custom	Retail	Retro	6000	4%	264	0.141	0.002	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.5	2.0	-0.6	0.5	
772	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Retail	Retro	6000	6%	360	0.193	0.003	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.6	1.1	1.3	0.4	
773	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Retail	Retro	425	0%	0	0.159	0.002	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0	
774	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	3385	5%	179	0.032	0.039	15	\$135.00	100%	50%	1	28%	10%	76%	39%	1.0	1.8	1.9	0.5	
775	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	3385	11%	365	0.065	0.078	15	\$445.76	100%	50%	1	28%	10%	76%	31%	0.6	1.1	1.4	0.4	
776	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	3385	14%	490	0.088	0.105	15	\$520.06	100%	50%	1	28%	10%	76%	33%	0.7	1.3	1.5	0.4	
777	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	3799	6%	218	0.039	0.047	15	\$100.00	100%	50%	2	12%	10%	76%	46%	1.7	3.0	2.8	0.5	
778	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	3799	11%	410	0.073	0.088	15	\$171.08	100%	50%	2	12%	10%	76%	47%	1.9	3.3	3.1	0.5	
779	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	3920	6%	235	0.042	0.050	15	\$100.00	100%	50%	3	12%	10%	76%	47%	1.8	3.2	3.0	0.5	
780	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	3920	11%	438	0.078	0.094	15	\$182.26	100%	50%	3	12%	10%	76%	47%	1.9	3.3	3.1	0.5	
781	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	4063	6%	253	0.045	0.054	15	\$100.00	100%	50%	4	12%	10%	76%	48%	2.0	3.4	3.2	0.5	
782	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	4063	12%	470	0.084	0.101	15	\$201.80	100%	50%	4	12%	10%	76%	47%	1.8	3.2	3.0	0.5	
783	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Retail	ROB	2483	3%	74	0.013	0.016	25	\$108.00	100%	50%	5	9%	20%	76%	28%	0.7	1.3	1.5	0.4	
784	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Retail	ROB	2483	4%	108	0.019	0.023	25	\$108.00	100%	50%	5	9%	20%	76%	34%	1.1	1.8	2.0	0.5	
785	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Retail	ROB	4110	4%	146	0.026	0.031	8	\$84.00	100%	50%	6	10%	20%	76%	44%	0.9	1.5	1.6	0.5	
786	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Retail	ROB	1755	64%	1124	0.212	0.174	10	\$784.00	100%	50%	1	100%	23%	69%	35%	0.8	1.4	1.6	0.4	
787	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Retail	Retro	1755	2%	35	0.007	0.005	20	\$60.00	100%	50%	2	100%	80%	69%	18%	0.5	0.9	1.3	0.4	
788	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Retail	ROB	2262	32%	713	0.135	0.111	5	\$92.90	100%	50%	3	20%	85%	69%	48%	2.4	4.2	3.8	0.6	
789	Commercial	HotWater	Faucet Aerator	Biz-Custom	Retail	Retro	647	22%	142	0.027	0.022	10	\$6.70	100%	50%	4	20%	85%	69%	50%	11.8	20.6	17.0	0.6	
790	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Retail	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	2.1	3.6	3.4	0.5	
791	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Retail	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
792	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Retail	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
793	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Retail	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
794	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Retail	Retro	1742	66%	1154	0.000	0.157	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.2	2.1	2.8	0.4	
795	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Retail	Retro	3235	60%	1953	0.000	0.266	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3	
796	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Retail	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
797	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Retail	Retro	238	68%	161	0.018	0.016	12	\$27.00	100%	50%	1	22%	45%	74%	60%	3.1	5.5	5.9	0.5	
798	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Retail	Retro	171	74%	126	0.014	0.013	1	\$59.00	100%	50%	1	22%	45%	74%	53%	1.1	2.0	2.4	0.4	
799	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Retail	Retro	153	45%	68	0.008	0.007	12	\$1.88	100%	50%										

C&I Measure Summary: Montana

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
808	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Retail	Retro	385	61%	237	0.026	0.027	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.2
809	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Retail	Retro	9932	50%	4966	0.545	0.559	20	\$1,586.00	100%	50%	2	0%	21%	76%	49%	2.4	4.1	4.6	0.4
810	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Retail	Retro	1909	83%	1585	0.174	0.178	10	\$483.00	100%	50%	3	1%	10%	76%	50%	1.5	2.7	3.1	0.4
811	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Retail	Retro	2984	25%	746	0.082	0.084	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	2.0	0.0	2.8	0.0
812	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Retail	ROB	3096	3%	85	0.009	0.010	15	\$59.00	100%	50%	5	3%	70%	76%	41%	0.9	1.6	2.0	0.4
813	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Retail	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	42%	10%	76%	19%	0.5	0.9	0.8	0.6
814	Commercial	Motors	Cogged V-Belt	Biz-Custom	Retail	Retro	14670	3%	455	0.076	0.044	15	\$383.81	100%	50%	1	50%	10%	76%	37%	0.8	1.4	1.8	0.4
815	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Retail	Retro	3805	34%	1290	0.216	0.125	15	\$168.00	100%	50%	2	100%	10%	76%	54%	5.1	8.9	8.7	0.5
816	Commercial	Motors	Power Drive Systems	Biz-Custom	Retail	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	5.1	8.9	8.7	0.5
817	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Retail	Retro	28430	31%	8700	1.460	0.845	15	\$527.50	100%	50%	2	100%	1%	76%	56%	10.9	19.0	18.1	0.5
818	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Retail	Retro	551	26%	110	0.012	0.012	6	\$0.00	100%		1	2%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
819	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Retail	Retro	1398	10%	140	0.000	0.142	5	\$40.00	100%	50%	2	14%	20%	76%	50%	2.1	3.6	2.0	0.9
820	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Retail	Retro	1126	15%	169	0.000	0.108	8	\$70.00	100%	50%	2	14%	20%	76%	47%	1.6	2.7	2.1	0.7
821	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Retail	ROB	1621	23%	368	0.042	0.041	8	\$118.00	100%	50%	3	50%	25%	76%	49%	1.2	2.1	2.5	0.4
822	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Retail	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	50%	25%	76%	48%	1.0	1.7	2.1	0.4
823	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Retail	Retro	86783	18%	15778	1.730	1.776	15	\$480.00	100%	50%	3	50%	25%	76%	56%	20.6	35.8	35.6	0.5
824	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Retail	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	50%	25%	76%	49%	2.3	4.0	4.4	0.4
825	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Retail	Retro	764	47%	358	0.039	0.040	15	\$82.00	100%	50%	4	50%	25%	76%	52%	2.7	4.8	5.2	0.5
826	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Retail	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	4%	10%	76%	48%	1.6	2.7	3.2	0.4
827	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Retail	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	7%	50%	64%	48%	#DIV/0!	0.0	0.0	0.0
828	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Retail	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	3.4	5.9	6.1	0.5
829	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Retail	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	4%	25%	64%	19%	0.4	0.7	1.2	0.3
830	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Retail	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.5	0.8	1.3	0.3
831	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Retail	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	15%	25%	64%	12%	0.2	0.4	0.9	0.2
832	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Retail	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	4%	80%	64%	41%	3.4	5.9	6.1	0.5
833	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Retail	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	4%	25%	64%	41%	3.0	5.2	5.4	0.5
834	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Retail	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	6%	25%	64%	29%	0.8	1.4	1.9	0.4
835	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Retail	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	17%	25%	64%	37%	1.2	2.0	2.4	0.4
836	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Retail	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	64%	39%	1.6	2.8	3.1	0.5
837	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Retail	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	3%	80%	64%	41%	3.4	5.9	6.1	0.5
838	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Retail	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	3%	2%	64%	34%	0.8	1.4	1.8	0.4
839	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Retail	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	16%	54%	64%	15%	0.3	0.5	1.0	0.3
840	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Retail	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	16%	54%	64%	10%	0.1	0.2	0.7	0.2
841	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Retail	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	6%	75%	64%	41%	2.3	4.0	4.2	0.5
842	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Retail	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	6%	25%	64%	45%	6.5	11.3	11.0	0.5
843	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Retail	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	5%	54%	64%	21%	0.4	0.7	1.2	0.3
844	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Retail	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	5%	54%	64%	10%	0.1	0.2	0.7	0.1
845	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Retail	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	94%	25%	64%	13%	0.5	1.0	0.8	0.6
846	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Retail	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	94%	25%	64%	41%	1.2	2.1	2.4	0.4
847	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Retail	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	3%	44%	64%	39%	1.6	2.7	3.0	0.5
848	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Retail	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	3%	30%	64%	11%	0.2	0.3	0.8	0.2
849	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Retail	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	10%	35%	64%	43%	3.4	6.0	6.0	0.5
850	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Retail	Retro	21063	63%	13165	0.000	0.000	15	\$147.41	100%	50%	1	15%	18%	76%	57%	38.3	66.5	95.9	0.3
851	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Retail	Retro	19919	82%	16287	2.183	1.946	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.6	4.5	4.7	0.5
852	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Retail	Retro	21909	83%	18277	2.450	2.184	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.9	5.0	5.2	0.5
853	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Retail	Retro	23903	82%	19579	2.624	2.339	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	3.0	5.3	5.4	0.5
854	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Retail	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.7	2.9	3.2	0.5
855	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Retail	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%		2	0%	20%	76%	57%	0.0	0.0	0.0	0.0
856	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Retail	Retro	409	61%	251	0.000	0.000	10	\$187.50	100%	50%	3	100%	18%	76%	40%	1.9	0.7	3.3	0.2
857	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Retail	Retro	491	91%	446	0.070	0.000	10	\$341.21	100%	50%	4	100%	18%	76%	39%	0.9	0.9	2.0	0.3
858	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Retail	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.5	9.6	9.4	0.5
859	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Retail	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.4	2.4	2.8	0.4
860	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Retail	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	28%	0.7	1.2	1.7	0.4
861	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Retail	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	7.0	12.2	11.8	0.5
862	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Office	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	3.4	5.9	5.8	0.5
863	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Office	ROB	1583	21%	329	0.044	0.038	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.5	2.6	3.0	0.4
864	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Office	Retro	103919	35%	36372	4.831	4.187	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	15.2	26.5	25.1	0.5
865	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Office	Retro	103919	2%	1970	0.262	0.227	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.7	8.2	8.2	0.5
866	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Office	Retro	1480	50%	740	0.098	0.085	15	\$49.50	100%	50%	5	5%	20%	76%	55%	9.7	16.9	16.5	0.5
867	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Office	Retro</																		

C&I Measure Summary: Montana

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
884	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Office	Retro	1288	7%	90	0.059	0.000	3	\$5.33	100%	50%	3	51%	50%	76%	56%	4.6	8.0	5.0	0.8	
885	Commercial	Cooling	Air Side Economizer	Biz-Custom	Office	Retro	1066	20%	213	0.140	0.000	15	\$153.28	100%	50%	4	51%	25%	76%	40%	1.4	2.4	2.0	0.6	
886	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Office	Retro	1118	20%	224	0.147	0.001	15	\$197.50	100%	50%	5	51%	20%	76%	36%	1.1	2.0	1.7	0.6	
887	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	1104	13%	138	0.091	0.000	15	\$115.00	100%	50%	6	7%	10%	76%	37%	1.2	2.1	1.8	0.6	
888	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	1104	22%	245	0.162	0.001	15	\$514.00	100%	50%	6	7%	10%	76%	22%	0.5	0.8	1.0	0.4	
889	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	1104	33%	368	0.242	0.001	15	\$630.50	100%	50%	6	7%	10%	76%	24%	0.6	1.0	1.1	0.5	
890	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Office	ROB	4418	14%	626	0.412	0.001	11	\$175.00	100%	50%	7	7%	20%	76%	50%	2.9	5.0	3.5	0.7	
891	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Office	ROB	1425	15%	208	0.137	0.000	8	\$84.00	100%	50%	8	7%	20%	76%	47%	1.6	2.7	2.1	0.6	
892	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Office	ROB	1129	9%	102	0.067	0.000	23	\$126.00	100%	50%	9	32%	10%	76%	31%	1.0	1.8	1.7	0.5	
893	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Office	ROB	567	23%	129	0.085	0.000	23	\$126.00	100%	50%	10	4%	10%	76%	35%	1.3	2.3	2.0	0.6	
894	Commercial	Cooling	Window Film	Biz-Custom	Office	Retro	6000	4%	264	0.174	0.001	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.6	2.2	-0.6	0.6	
895	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Office	Retro	6000	6%	360	0.237	0.001	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.7	1.2	1.3	0.5	
896	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Office	Retro	1189	0%	0	0.589	0.002	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0	
897	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	7041	6%	396	0.087	0.085	15	\$135.00	100%	50%	1	6%	10%	76%	49%	2.4	4.2	3.6	0.6	
898	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	7041	11%	796	0.175	0.170	15	\$445.76	100%	50%	1	6%	10%	76%	44%	1.5	2.5	2.4	0.5	
899	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	7041	15%	1081	0.237	0.231	15	\$520.06	100%	50%	1	6%	10%	76%	46%	1.7	3.0	2.7	0.5	
900	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	7866	6%	457	0.100	0.098	15	\$100.00	100%	50%	2	17%	10%	76%	52%	3.7	6.5	5.4	0.6	
901	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	7866	11%	857	0.188	0.183	15	\$171.08	100%	50%	2	17%	10%	76%	52%	4.1	7.1	5.9	0.6	
902	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	8121	6%	494	0.108	0.106	15	\$100.00	100%	50%	3	16%	10%	76%	52%	4.0	7.0	5.8	0.6	
903	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	8121	11%	917	0.201	0.196	15	\$182.26	100%	50%	3	16%	10%	76%	52%	4.1	7.2	5.9	0.6	
904	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	8433	6%	534	0.117	0.114	15	\$100.00	100%	50%	4	16%	10%	76%	52%	4.4	7.6	6.2	0.6	
905	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	8433	12%	988	0.217	0.211	15	\$201.80	100%	50%	4	16%	10%	76%	52%	4.0	7.0	5.7	0.6	
906	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Office	ROB	5207	3%	160	0.035	0.034	25	\$108.00	100%	50%	5	4%	20%	76%	41%	1.6	2.8	2.7	0.5	
907	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Office	ROB	5207	5%	256	0.056	0.055	25	\$108.00	100%	50%	5	4%	20%	76%	47%	2.6	4.5	4.1	0.6	
908	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Office	ROB	8521	4%	367	0.081	0.078	8	\$84.00	100%	50%	6	10%	20%	76%	52%	2.2	3.9	3.3	0.6	
909	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Office	ROB	1193	64%	764	0.148	0.066	10	\$784.00	100%	50%	1	100%	13%	69%	27%	0.5	0.9	1.3	0.3	
910	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Office	Retro	1193	2%	24	0.005	0.002	20	\$60.00	100%	50%	2	100%	80%	69%	14%	0.3	0.6	1.0	0.3	
911	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Office	ROB	2262	32%	713	0.138	0.062	5	\$92.90	100%	50%	3	20%	85%	69%	48%	2.2	3.8	3.8	0.5	
912	Commercial	HotWater	Faucet Aerator	Biz-Custom	Office	Retro	443	22%	97	0.019	0.008	10	\$6.70	100%	50%	4	20%	85%	69%	50%	7.4	12.8	11.8	0.5	
913	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Office	ROB	2239	29%	660	0.128	0.057	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.9	3.3	3.4	0.5	
914	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Office	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.8	2.6	0.4	
915	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Office	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.8	2.6	0.4	
916	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Office	Retro	1589	60%	959	0.000	0.129	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
917	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Office	Retro	1742	66%	1154	0.000	0.155	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.2	2.1	2.8	0.4	
918	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Office	Retro	3235	60%	1953	0.000	0.263	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3	
919	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Office	Retro	1589	60%	959	0.000	0.129	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
920	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Office	Retro	179	68%	121	0.020	0.016	15	\$27.00	100%	50%	1	20%	45%	74%	58%	3.1	5.5	5.3	0.5	
921	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Office	Retro	128	74%	95	0.016	0.013	15	\$59.00	100%	50%	1	20%	45%	74%	49%	1.1	2.0	2.2	0.4	
922	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Office	Retro	115	45%	51	0.009	0.007	15	\$1.88	100%	50%	2	19%	45%	74%	65%	19.2	33.4	29.8	0.6	
923	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Office	Retro	260	50%	130	0.022	0.018	15	\$70.00	100%	50%	2	79%	45%	74%	52%	1.3	2.3	2.5	0.5	
924	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Office	Retro	516	61%	314	0.053	0.042	15	\$44.00	100%	50%	3	1%	45%	74%	61%	5.0	8.7	8.1	0.5	
925	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Office	Retro	2423	68%	1649	0.276	0.223	15	\$330.00	100%	50%	4	0%	45%	74%	59%	3.5	6.1	5.8	0.5	
926	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Office	Retro	96	100%	96	0.016	0.013	11	\$12.00	100%	50%	5	7%	0%	74%	61%	4.5	7.8	7.2	0.5	
927	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Office	Retro	560	30%	168	0.028	0.023	10	\$57.50	100%	50%	6	80%	11%	74%	56%	1.5	2.7	2.8	0.5	
928	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Office	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	80%	11%	74%	50%	1.2	2.1	2.3	0.4	
929	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Office	Retro	438	30%	131	0.022	0.018	15	\$77.45	100%	50%	6	80%	11%	74%	50%	1.2	2.1	2.3	0.4	
930	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Office	Retro	70	43%	30	0.005	0.004	5	\$32.50	100%	50%	7	1%	85%	74%	35%	0.3	0.5	0.9	0.3	
931	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Office	Retro	385	61%	237	0.031	0.027	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.3	
932	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Office	Retro	9932	50%	4966	0.660	0.572	20	\$1,586.00	100%	50%	2	42%	21%	76%	49%	2.4	4.2	4.6	0.5	
933	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Office	Retro	262	83%	217	0.029	0.025	10	\$483.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.8	0.2	
934	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Office	Retro	2984	25%	746	0.099	0.086	10	\$20,309.70	100%	50%	4	3%	10%	76%	15%	2.0	0.0	2.8	0.0	
935	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Office	ROB	3096	3%	85	0.011	0.010	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.9	1.6	2.0	0.4	
936	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Office	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	26%	10%	76%	19%	0.5	0.9	0.8	0.6	
937	Commercial	Motors	Cogged V-Belt	Biz-Custom	Office	Retro	9092	3%	282	0.034	0.038	15	\$383.81	100%	50%	1	50%	10%	76%	29%	0.5	0.8	1.3	0.3	
938	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Office	Retro	3805	34%	1290	0.156	0.174	15	\$168.00	100%	50%	2	100%	10%	76%	54%	5.1	8.8	8.7	0.5	
939	Commercial	Motors	Power Drive Systems	Biz-Custom	Office	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	5.1	8.8	8.7	0.5	
940	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Office	Retro	17620	31%	5392	0.653	0.727	15	\$527.50	100%	50%	2	100%	1%	76%	55%	6.7	11.7	11.4	0.5	
941	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Office	Retro	551	26%	110	0.015	0.013	6	\$0.00	100%	50%	1	2%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0	
942	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz																					

C&I Measure Summary: Montana

MDU_Montana																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
963	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Office	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	16%	54%	64%	10%	0.1	0.2	0.7	0.2	
964	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Office	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	5%	25%	64%	41%	2.3	4.0	4.2	0.5	
965	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Office	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	5%	25%	64%	45%	6.5	11.3	11.0	0.5	
966	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Office	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	5%	54%	64%	21%	0.4	0.7	1.2	0.3	
967	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Office	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	5%	54%	64%	10%	0.1	0.2	0.7	0.1	
968	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Office	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	82%	25%	64%	13%	0.5	1.0	0.8	0.6	
969	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Office	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	82%	25%	64%	41%	1.2	2.1	2.4	0.4	
970	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Office	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	9%	44%	64%	39%	1.6	2.7	3.0	0.5	
971	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Office	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	9%	30%	64%	11%	0.2	0.3	0.8	0.2	
972	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Office	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	10%	35%	64%	43%	3.4	6.0	6.0	0.5	
973	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Office	Retro	21289	63%	13306	0.000	0.000	15	\$147.41	100%	50%	1	32%	50%	76%	57%	38.9	67.6	97.0	0.3	
974	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Office	Retro	19919	82%	16287	2.828	2.027	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.7	4.8	4.7	0.5	
975	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Office	Retro	21909	83%	18277	3.173	2.275	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	3.0	5.3	5.2	0.5	
976	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Office	Retro	23903	82%	19579	3.399	2.437	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	3.2	5.6	5.4	0.5	
977	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Office	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.8	3.1	3.2	0.5	
978	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Office	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	50%	2	0%	20%	76%	57%	0.0	0.0	0.0	0.0	
979	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Office	Retro	1143	16%	185	0.000	0.000	10	\$187.50	100%	50%	3	100%	50%	76%	34%	1.2	0.5	2.3	0.2	
980	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Office	Retro	1372	50%	681	0.202	0.000	10	\$341.21	100%	50%	4	100%	50%	76%	45%	1.3	1.8	2.4	0.4	
981	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Office	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.9	10.3	9.4	0.5	
982	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Office	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.5	2.6	2.8	0.5	
983	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Office	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	28%	0.7	1.3	1.7	0.4	
984	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Office	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	7.6	13.2	11.8	0.6	
985	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Warehouse	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	3.4	5.9	5.8	0.5	
986	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Warehouse	ROB	1583	21%	329	0.046	0.035	13	\$127.00	100%	50%	2	32%	20%	76%	48%	1.5	2.6	3.0	0.4	
987	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Warehouse	Retro	103919	35%	36372	5.116	3.893	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	15.3	26.5	25.1	0.5	
988	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Warehouse	Retro	103919	2%	1970	0.277	0.211	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.7	8.2	8.2	0.5	
989	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Warehouse	Retro	1480	50%	740	0.104	0.079	15	\$49.50	100%	50%	5	5%	20%	76%	55%	9.7	16.9	16.5	0.5	
990	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Warehouse	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	2.3	4.0	4.2	0.5	
991	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Warehouse	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.2	2.1	2.4	0.4	
992	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Warehouse	ROB	11904	13%	1514	0.454	0.198	12	\$2,162.00	100%	50%	1	14%	17%	76%	28%	0.5	0.8	1.1	0.4	
993	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Warehouse	ROB	6351	15%	924	0.416	0.181	12	\$1,682.00	100%	50%	2	18%	53%	76%	23%	0.5	0.8	1.0	0.4	
994	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Warehouse	ROB	18912	50%	9499	4.275	1.863	12	\$3,824.00	100%	50%	2	18%	53%	76%	48%	2.1	3.7	2.7	0.7	
995	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Warehouse	ROB	12454	14%	1762	0.396	0.173	12	\$2,126.00	100%	50%	3	27%	24%	76%	31%	0.5	0.9	1.2	0.4	
996	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Warehouse	ROB	13385	67%	9010	3.337	1.454	12	\$2,490.00	100%	50%	4	6%	45%	76%	50%	2.8	4.9	3.8	0.6	
997	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Warehouse	ROB	7500	85%	6398	1.535	0.669	12	\$1,891.00	100%	50%	5	3%	16%	76%	50%	2.1	3.7	3.5	0.5	
998	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Warehouse	ROB	3000	79%	2355	0.698	0.304	12	\$1,497.00	100%	50%	5	3%	16%	76%	42%	1.1	1.9	1.9	0.5	
999	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Warehouse	ROB	41082	34%	14133	2.672	2.193	16	\$255.00	100%	50%	6	26%	61%	76%	57%	43.2	75.1	62.6	0.6	
1000	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Warehouse	ROB	35485	26%	9319	1.762	1.446	16	\$1,375.00	100%	50%	6	26%	61%	76%	53%	5.3	9.2	8.1	0.6	
1001	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	157	14%	22	0.015	0.000	15	\$153.28	100%	50%	1	31%	10%	76%	15%	0.1	0.3	0.7	0.2	
1002	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	157	19%	30	0.020	0.000	15	\$214.59	100%	50%	1	31%	10%	76%	15%	0.1	0.2	0.6	0.2	
1003	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	157	30%	48	0.032	0.000	15	\$398.52	100%	50%	1	31%	10%	76%	15%	0.1	0.2	0.6	0.2	
1004	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	176	9%	16	0.011	0.000	15	\$71.00	100%	50%	2	31%	10%	76%	15%	0.2	0.4	0.7	0.3	
1005	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	176	13%	23	0.016	0.000	15	\$109.23	100%	50%	2	31%	10%	76%	15%	0.2	0.4	0.7	0.3	
1006	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	176	24%	41	0.028	0.000	15	\$218.46	100%	50%	2	31%	10%	76%	15%	0.2	0.3	0.7	0.2	
1007	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Warehouse	Retro	191	7%	13	0.009	0.000	3	\$5.33	100%	50%	3	62%	50%	76%	48%	0.7	1.2	1.2	0.5	
1008	Commercial	Cooling	Air Side Economizer	Biz-Custom	Warehouse	Retro	158	20%	32	0.021	0.000	15	\$153.28	100%	50%	4	62%	25%	76%	15%	0.2	0.4	0.7	0.2	
1009	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Warehouse	Retro	165	20%	33	0.022	0.000	15	\$197.50	100%	50%	5	62%	20%	76%	15%	0.2	0.3	0.7	0.2	
1010	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	164	13%	20	0.014	0.000	15	\$115.00	100%	50%	6	38%	10%	76%	15%	0.2	0.3	0.7	0.2	
1011	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	164	22%	36	0.024	0.000	15	\$514.00	100%	50%	6	38%	10%	76%	15%	0.1	0.1	0.6	0.1	
1012	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	164	33%	55	0.036	0.000	15	\$630.50	100%	50%	6	38%	10%	76%	15%	0.1	0.2	0.6	0.1	
1013	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Warehouse	ROB	654	14%	93	0.062	0.000	11	\$175.00	100%	50%	7	38%	20%	76%	23%	0.4	0.7	0.9	0.4	
1014	Commercial	Cooling	PTAC - 7,000 to 15,000 Btu/h	Biz-Prescriptive HVAC	Warehouse	ROB	211	15%	31	0.020	0.000	8	\$84.00	100%	50%	8	0%	20%	76%	19%	0.2	0.4	0.7	0.3	
1015	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Warehouse	ROB	167	9%	15	0.010	0.000	23	\$126.00	100%	50%	9	0%	10%	76%	15%	0.2	0.3	0.7	0.2	
1016	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Warehouse	ROB	84	23%	19	0.013	0.000	23	\$126.00	100%	50%	10	0%	10%	76%	15%	0.2	0.3	0.7	0.2	
1017	Commercial	Cooling	Window Film	Biz-Custom	Warehouse	Retro	6000	4%	264	0.176	0.000	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.6	2.3	-0.6	0.6	
1018	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Warehouse	Retro	6000	6%	360	0.240	0.000	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.7	1.2	1.3	0.5	
1019	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Warehouse	Retro	176	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0	
1020	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	3072	5%	147	0.033	0.033	15	\$135.00	100%	50%	1	19%	10%	76%	35%	0.9	1.6	1.7	0.5	
1021	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	3072	10%	306	0.068	0.069</														

C&I Measure Summary: Montana

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
1028	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	3701	11%	419	0.093	0.095	15	\$201.80	100%	50%	4	10%	10%	76%	46%	1.7	3.0	2.7	0.6	
1029	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Warehouse	ROB	2224	3%	63	0.014	0.014	25	\$108.00	100%	50%	5	0%	20%	76%	24%	0.6	1.1	1.4	0.4	
1030	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Warehouse	ROB	2224	3%	77	0.017	0.017	25	\$108.00	100%	50%	5	0%	20%	76%	29%	0.8	1.4	1.6	0.4	
1031	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Warehouse	ROB	3750	2%	90	0.020	0.020	8	\$84.00	100%	50%	6	0%	20%	76%	35%	0.6	1.0	1.2	0.4	
1032	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Warehouse	ROB	526	64%	337	0.064	0.052	10	\$784.00	100%	50%	1	100%	0%	69%	15%	0.2	0.4	0.8	0.2	
1033	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Warehouse	Retro	526	2%	11	0.002	0.002	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.2	0.3	0.7	0.2	
1034	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Warehouse	ROB	2262	32%	713	0.135	0.111	5	\$92.90	100%	50%	3	20%	85%	69%	48%	2.4	4.2	3.8	0.6	
1035	Commercial	HotWater	Faucet Aerator	Biz-Custom	Warehouse	Retro	443	22%	97	0.018	0.015	10	\$6.70	100%	50%	4	20%	85%	69%	50%	8.1	14.1	11.8	0.6	
1036	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Warehouse	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	2.1	3.6	3.4	0.5	
1037	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Warehouse	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
1038	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Warehouse	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.9	2.6	0.4	
1039	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Warehouse	Retro	1589	60%	959	0.000	0.130	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
1040	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Warehouse	Retro	1742	66%	1154	0.000	0.157	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.2	2.1	2.8	0.4	
1041	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Warehouse	Retro	3235	60%	1953	0.000	0.265	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3	
1042	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Warehouse	Retro	1589	60%	959	0.000	0.130	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.0	1.6	0.3	
1043	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Warehouse	Retro	170	68%	115	0.017	0.012	15	\$27.00	100%	50%	1	18%	45%	74%	58%	2.8	4.9	5.1	0.5	
1044	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Warehouse	Retro	122	74%	90	0.013	0.010	15	\$59.00	100%	50%	1	18%	45%	74%	48%	1.0	1.7	2.1	0.4	
1045	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Warehouse	Retro	110	45%	49	0.007	0.005	15	\$1.88	100%	50%	2	78%	45%	74%	65%	17.2	29.8	28.4	0.5	
1046	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Warehouse	Retro	248	50%	124	0.019	0.013	15	\$70.00	100%	50%	2	78%	45%	74%	51%	1.2	2.0	2.4	0.4	
1047	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Warehouse	Retro	492	61%	299	0.045	0.032	15	\$44.00	100%	50%	3	2%	45%	74%	61%	4.5	7.8	7.8	0.5	
1048	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Warehouse	Retro	2310	68%	1571	0.234	0.170	15	\$330.00	100%	50%	4	2%	45%	74%	59%	3.1	5.4	5.6	0.5	
1049	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Warehouse	Retro	91	100%	91	0.014	0.010	11	\$12.00	100%	50%	5	78%	0%	74%	61%	4.0	7.0	6.9	0.5	
1050	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Warehouse	Retro	534	30%	160	0.024	0.017	10	\$57.50	100%	50%	6	82%	11%	74%	56%	1.4	2.4	2.7	0.4	
1051	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Warehouse	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	82%	11%	74%	49%	1.1	1.9	2.2	0.4	
1052	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Warehouse	Retro	417	30%	125	0.019	0.013	15	\$73.81	100%	50%	6	82%	11%	74%	50%	1.1	1.9	2.3	0.4	
1053	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Warehouse	Retro	63	43%	27	0.004	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	33%	0.2	0.4	0.9	0.2	
1054	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Warehouse	Retro	385	61%	237	0.033	0.025	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.3	
1055	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Warehouse	Retro	9932	50%	4966	0.698	0.531	20	\$1,586.00	100%	50%	2	0%	10%	76%	49%	2.4	4.3	4.6	0.5	
1056	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Warehouse	Retro	262	83%	217	0.031	0.023	10	\$483.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.8	0.2	
1057	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Warehouse	Retro	2984	25%	746	0.105	0.080	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	2.0	0.0	2.8	0.0	
1058	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Warehouse	ROB	3096	3%	85	0.012	0.009	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.9	1.6	2.0	0.4	
1059	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Warehouse	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	58%	10%	76%	19%	0.5	0.9	0.8	0.6	
1060	Commercial	Motors	Cogged V-Belt	Biz-Custom	Warehouse	Retro	20965	3%	650	0.098	0.096	15	\$383.81	100%	50%	1	50%	10%	76%	43%	1.2	2.0	2.3	0.4	
1061	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Warehouse	Retro	3805	34%	1290	0.194	0.191	15	\$168.00	100%	50%	2	100%	10%	76%	54%	5.3	9.3	8.7	0.5	
1062	Commercial	Motors	Power Drive Systems	Biz-Custom	Warehouse	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	5.3	9.3	8.7	0.5	
1063	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Warehouse	Retro	40630	31%	12433	1.868	1.845	15	\$527.50	100%	50%	2	100%	1%	76%	56%	16.4	28.5	25.7	0.6	
1064	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Warehouse	Retro	551	26%	110	0.015	0.012	6	\$0.00	100%	50%	1	2%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0	
1065	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Warehouse	Retro	1398	10%	140	0.000	0.135	5	\$40.00	100%	50%	2	11%	20%	76%	50%	2.0	3.5	2.0	0.9	
1066	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Warehouse	Retro	1126	15%	169	0.000	0.102	8	\$70.00	100%	50%	2	11%	20%	76%	47%	1.5	2.6	2.1	0.6	
1067	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Warehouse	ROB	1621	23%	368	0.042	0.039	8	\$118.00	100%	50%	3	53%	25%	76%	49%	1.2	2.1	2.5	0.4	
1068	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Warehouse	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	53%	25%	76%	48%	1.0	1.8	2.1	0.4	
1069	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Warehouse	Retro	86783	18%	15778	2.219	1.689	15	\$480.00	100%	50%	3	53%	25%	76%	56%	21.3	37.1	35.6	0.5	
1070	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Warehouse	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	53%	25%	76%	49%	2.3	4.0	4.4	0.4	
1071	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Warehouse	Retro	764	47%	358	0.050	0.038	15	\$82.00	100%	50%	4	53%	25%	76%	52%	2.8	4.9	5.2	0.5	
1072	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Warehouse	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	2%	10%	76%	48%	1.6	2.8	3.2	0.4	
1073	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Warehouse	Retro	207	50%	103	0.014	0.012	4	\$10.22	100%	50%	1	10%	50%	64%	44%	2.3	3.9	4.0	0.5	
1074	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Warehouse	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	3.4	5.9	6.1	0.5	
1075	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Warehouse	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	7%	25%	64%	19%	0.4	0.7	1.2	0.3	
1076	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Warehouse	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.5	0.8	1.3	0.3	
1077	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Warehouse	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	23%	25%	64%	12%	0.2	0.4	0.9	0.2	
1078	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Warehouse	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	6%	80%	64%	41%	3.4	5.9	6.1	0.5	
1079	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Warehouse	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	6%	25%	64%	41%	3.0	5.2	5.4	0.5	
1080	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Warehouse	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	8%	25%	64%	29%	0.8	1.4	1.9	0.4	
1081	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Warehouse	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	12%	25%	64%	37%	1.2	2.0	2.4	0.4	
1082	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Warehouse	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	4%	25%	64%	39%	1.6	2.8	3.1	0.5	
1083	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Warehouse	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	2%	80%	64%	41%	3.4	5.9	6.1	0.5	
1084	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Warehouse	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	2%	2%	64%	34%	0.8	1.4	1.8	0.4	
1085	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Warehouse	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	12%	54%	64%	15%	0.3	0.5	1.0	0.3	
1086	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Warehouse	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13									

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1113	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Other	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	2.2	3.9	4.2	0.5
1114	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Other	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.2	2.1	2.4	0.4
1115	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Other	ROB	11904	13%	1514	0.454	0.347	12	\$2,162.00	100%	50%	1	14%	17%	76%	57%	0.5	0.9	1.1	0.4
1116	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Other	ROB	6351	15%	924	0.416	0.317	12	\$1,682.00	100%	50%	2	18%	53%	76%	57%	0.5	0.9	1.0	0.5
1117	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Other	ROB	18912	50%	9499	4.275	3.263	12	\$3,824.00	100%	50%	2	18%	53%	76%	57%	2.4	4.2	2.7	0.8
1118	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Other	ROB	12454	14%	1762	0.396	0.303	12	\$2,126.00	100%	50%	3	27%	24%	76%	57%	0.6	1.0	1.2	0.4
1119	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Other	ROB	13385	67%	9010	3.337	2.547	12	\$2,490.00	100%	50%	4	6%	45%	76%	57%	3.1	5.5	3.8	0.7
1120	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Other	ROB	7500	85%	6398	1.535	1.172	12	\$1,891.00	100%	50%	5	3%	16%	76%	57%	2.3	4.1	3.5	0.6
1121	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Other	ROB	3000	79%	2355	0.698	0.533	12	\$1,497.00	100%	50%	5	3%	16%	76%	57%	1.2	2.1	1.9	0.5
1122	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Other	ROB	41082	34%	14133	2.672	2.193	16	\$255.00	100%	50%	6	26%	61%	76%	57%	43.2	75.1	62.6	0.6
1123	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Other	ROB	35485	26%	9319	1.762	1.446	16	\$1,375.00	100%	50%	6	26%	61%	76%	53%	5.3	9.2	8.1	0.6
1124	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Other	ROB	603	14%	85	0.048	0.001	15	\$153.28	100%	50%	1	29%	10%	76%	23%	0.5	0.9	1.1	0.4
1125	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Other	ROB	603	19%	114	0.065	0.001	15	\$214.59	100%	50%	1	29%	10%	76%	23%	0.5	0.9	1.1	0.4
1126	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Other	ROB	603	30%	184	0.104	0.001	15	\$398.52	100%	50%	1	29%	10%	76%	21%	0.4	0.7	1.0	0.4
1127	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Other	ROB	677	9%	62	0.035	0.000	15	\$71.00	100%	50%	2	29%	10%	76%	32%	0.8	1.4	1.4	0.5
1128	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Other	ROB	677	13%	90	0.051	0.001	15	\$109.23	100%	50%	2	29%	10%	76%	31%	0.8	1.3	1.4	0.5
1129	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Other	ROB	677	24%	159	0.090	0.001	15	\$218.46	100%	50%	2	29%	10%	76%	29%	0.7	1.2	1.3	0.5
1130	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Other	Retro	734	7%	51	0.029	0.000	3	\$5.33	100%	50%	3	57%	50%	76%	54%	2.4	4.2	3.1	0.7
1131	Commercial	Cooling	Air Side Economizer	Biz-Custom	Other	Retro	607	20%	121	0.069	0.001	15	\$153.28	100%	50%	4	57%	25%	76%	31%	0.7	1.3	1.3	0.5
1132	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Other	Retro	636	20%	127	0.072	0.001	15	\$197.50	100%	50%	5	57%	20%	76%	27%	0.6	1.0	1.2	0.4
1133	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Other	ROB	629	13%	79	0.045	0.001	15	\$115.00	100%	50%	6	0%	10%	76%	28%	0.6	1.1	1.2	0.4
1134	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Other	ROB	629	22%	140	0.079	0.001	15	\$514.00	100%	50%	6	0%	10%	76%	15%	0.3	0.4	0.8	0.3
1135	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Other	ROB	629	33%	210	0.119	0.002	15	\$630.50	100%	50%	6	0%	10%	76%	18%	0.3	0.5	0.9	0.3
1136	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Other	ROB	2515	14%	356	0.202	0.003	11	\$175.00	100%	50%	7	0%	20%	76%	45%	1.5	2.6	2.2	0.6
1137	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Other	ROB	811	15%	118	0.067	0.001	8	\$84.00	100%	50%	8	0%	20%	76%	40%	0.8	1.4	1.4	0.5
1138	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Other	ROB	642	9%	58	0.033	0.000	23	\$126.00	100%	50%	9	38%	10%	76%	21%	0.5	0.9	1.2	0.4
1139	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Other	ROB	323	23%	73	0.042	0.001	23	\$126.00	100%	50%	10	4%	10%	76%	24%	0.7	1.2	1.3	0.5
1140	Commercial	Cooling	Window Film	Biz-Custom	Other	Retro	6000	4%	264	0.150	0.002	10	\$153.81	100%	50%	11	100%	25%	76%	43%	0.5	2.1	-0.6	0.6
1141	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Other	Retro	6000	6%	360	0.204	0.003	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.6	1.1	1.3	0.4
1142	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Other	Retro	677	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
1143	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Other	ROB	4424	6%	244	0.046	0.053	15	\$135.00	100%	50%	1	0%	10%	76%	57%	1.4	2.5	2.4	0.5
1144	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Other	ROB	4424	11%	492	0.093	0.107	15	\$445.76	100%	50%	1	0%	10%	76%	57%	0.9	1.5	1.7	0.5
1145	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Other	ROB	4424	15%	665	0.126	0.145	15	\$520.06	100%	50%	1	0%	10%	76%	57%	1.0	1.8	1.9	0.5
1146	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	4950	6%	286	0.054	0.062	15	\$100.00	100%	50%	2	17%	10%	76%	57%	2.3	4.0	3.6	0.6
1147	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	4950	11%	538	0.102	0.117	15	\$171.08	100%	50%	2	17%	10%	76%	57%	2.5	4.3	3.9	0.6
1148	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	5110	6%	309	0.059	0.067	15	\$100.00	100%	50%	3	17%	10%	76%	57%	2.5	4.3	3.8	0.6
1149	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	5110	11%	575	0.109	0.125	15	\$182.26	100%	50%	3	17%	10%	76%	57%	2.5	4.4	3.9	0.6
1150	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	5303	6%	333	0.063	0.073	15	\$100.00	100%	50%	4	17%	10%	76%	57%	2.7	4.6	4.1	0.6
1151	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	5303	12%	618	0.118	0.135	25	\$201.80	100%	50%	4	17%	10%	76%	57%	3.3	5.7	5.1	0.6
1152	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Other	ROB	3262	3%	99	0.019	0.022	25	\$108.00	100%	50%	5	0%	20%	76%	57%	1.0	1.7	1.9	0.5
1153	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Other	ROB	3262	5%	154	0.029	0.033	25	\$108.00	100%	50%	5	0%	20%	76%	57%	1.5	2.7	2.6	0.5
1154	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Other	ROB	5360	4%	216	0.041	0.047	8	\$84.00	100%	50%	6	0%	20%	76%	57%	1.3	2.2	2.2	0.5
1155	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Other	ROB	456	64%	292	0.055	0.045	10	\$784.00	100%	50%	1	100%	20%	69%	14%	0.2	0.4	0.8	0.2
1156	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Other	Retro	456	2%	9	0.002	0.001	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.1	0.2	0.7	0.2
1157	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Other	ROB	2262	32%	713	0.135	0.111	5	\$92.90	100%	50%	3	20%	85%	69%	48%	2.4	4.2	3.8	0.6
1158	Commercial	HotWater	Faucet Aerator	Biz-Custom	Other	Retro	443	22%	97	0.018	0.015	10	\$6.70	100%	50%	4	20%	85%	69%	50%	8.1	14.1	11.8	0.6
1159	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Other	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	2.1	3.6	3.4	0.5
1160	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Other	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	1	14%	69%	76%	56%	1.1	1.9	2.6	0.4
1161	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Other	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	2	14%	69%	76%	56%	1.1	1.9	2.6	0.4
1162	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Other	Retro	1589	60%	959	0.000	0.132	12	\$756.00	100%	50%	3	14%	69%	76%	46%	0.6	1.0	1.6	0.3
1163	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Other	Retro	1742	66%	1154	0.000	0.159	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.2	2.1	2.8	0.4
1164	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Other	Retro	3235	60%	1953	0.000	0.269	6	\$756.00	100%	50%	5	14%	69%	76%	57%	0.7	1.2	1.8	0.3
1165	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Other	Retro	1589	60%	959	0.000	0.132	12	\$756.00	100%	50%	6	14%	69%	76%	46%	0.6	1.0	1.6	0.3
1166	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Other	Retro	194	68%	131	0.017	0.016	15	\$27.00	100%	50%	1	10%	45%	74%	59%	3.1	5.5	5.7	0.5
1167	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Other	Retro	140	74%	103	0.013	0.012	15	\$59.00	100%	50%	1	10%	45%	74%	51%	1.1	2.0	2.4	0.4
1168	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Other	Retro	125	45%	56	0.007	0.007	15	\$1.88	100%	50%	2	87%	45%	74%	65%	19.3	33.5	32.3	0.5
1169	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Other	Retro	283	50%	142	0.018	0.017	15	\$70.00	100%	50%	2	87%	45%	74%	53%	1.3	2.3	2.7	0.4
1170	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Other	Retro	561	61%	341	0														

C&I Measure Summary: Montana

MDU_Montana																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1179	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Other	Retro	262	83%	217	0.025	0.025	10	\$483.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.8	0.2
1180	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Other	Retro	2984	25%	746	0.086	0.086	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	2.0	0.0	2.8	0.0
1181	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Other	ROB	3096	3%	85	0.010	0.010	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.9	1.6	2.0	0.4
1182	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Other	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	34%	10%	76%	19%	0.5	0.9	0.8	0.6
1183	Commercial	Motors	Cogged V-Belt	Biz-Custom	Other	Retro	17237	3%	534	0.081	0.063	15	\$383.81	100%	50%	1	50%	10%	76%	40%	0.9	1.6	2.0	0.4
1184	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Other	Retro	3805	34%	1290	0.196	0.151	15	\$168.00	100%	50%	2	100%	10%	76%	54%	5.1	8.9	8.7	0.5
1185	Commercial	Motors	Power Drive Systems	Biz-Custom	Other	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	5.1	8.9	8.7	0.5
1186	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Other	Retro	33406	31%	10222	1.557	1.197	15	\$527.50	100%	50%	2	100%	1%	76%	56%	13.0	22.5	21.2	0.5
1187	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Other	Retro	551	26%	110	0.013	0.013	6	\$0.00	100%		1	4%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
1188	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Other	Retro	1398	10%	140	0.000	0.145	5	\$40.00	100%	50%	2	26%	20%	76%	50%	2.1	3.7	2.0	0.9
1189	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Other	Retro	1126	15%	169	0.000	0.110	8	\$70.00	100%	50%	2	26%	20%	76%	47%	1.6	2.8	2.1	0.7
1190	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Other	ROB	1621	23%	368	0.042	0.042	8	\$118.00	100%	50%	3	37%	25%	76%	49%	1.2	2.1	2.5	0.4
1191	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Other	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	37%	25%	76%	48%	1.0	1.7	2.1	0.4
1192	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Other	Retro	86783	18%	15778	1.829	1.818	15	\$480.00	100%	50%	3	37%	25%	76%	56%	20.9	36.3	35.6	0.5
1193	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Other	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	37%	25%	76%	49%	2.3	4.0	4.4	0.4
1194	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Other	Retro	764	47%	358	0.042	0.041	15	\$82.00	100%	50%	4	37%	25%	76%	52%	2.8	4.8	5.2	0.5
1195	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Other	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	1%	10%	76%	48%	1.6	2.8	3.2	0.4
1196	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Other	Retro	37	50%	18	0.003	0.002	4	\$10.22	100%	50%	1	4%	50%	64%	35%	0.4	0.7	1.1	0.3
1197	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Other	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	3.4	5.9	6.1	0.5
1198	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Other	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	3%	25%	64%	19%	0.4	0.7	1.2	0.3
1199	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Other	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.5	0.8	1.3	0.3
1200	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Other	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	10%	25%	64%	12%	0.2	0.4	0.9	0.2
1201	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Other	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	3%	80%	64%	41%	3.4	5.9	6.1	0.5
1202	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Other	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	3%	25%	64%	41%	3.0	5.2	5.4	0.5
1203	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Other	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	4%	25%	64%	29%	0.8	1.4	1.9	0.4
1204	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Other	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	17%	25%	64%	37%	1.2	2.0	2.4	0.4
1205	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Other	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	64%	39%	1.6	2.8	3.1	0.5
1206	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Other	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	3%	80%	64%	41%	3.4	5.9	6.1	0.5
1207	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Other	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	3%	2%	64%	34%	0.8	1.4	1.8	0.4
1208	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Other	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	17%	54%	64%	15%	0.3	0.5	1.0	0.3
1209	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Other	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	17%	54%	64%	10%	0.1	0.2	0.7	0.2
1210	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Other	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	6%	25%	64%	41%	2.3	4.0	4.2	0.5
1211	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Other	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	6%	25%	64%	45%	6.5	11.3	11.0	0.5
1212	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Other	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	6%	54%	64%	21%	0.4	0.7	1.2	0.3
1213	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Other	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	6%	54%	64%	10%	0.1	0.2	0.7	0.1
1214	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Other	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	86%	25%	64%	13%	0.5	1.0	0.8	0.6
1215	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Other	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	86%	25%	64%	41%	1.2	2.1	2.4	0.4
1216	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Other	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	8%	44%	64%	39%	1.6	2.7	3.0	0.5
1217	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Other	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	5%	30%	64%	11%	0.2	0.3	0.8	0.2
1218	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Other	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	10%	35%	64%	43%	3.4	6.0	6.0	0.5
1219	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Other	Retro	26074	63%	16296	0.000	0.000	15	\$147.41	100%	50%	1	40%	17%	76%	57%	47.5	82.6	118.6	0.3
1220	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Other	Retro	19919	82%	16287	2.398	2.100	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.7	4.6	4.7	0.5
1221	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Other	Retro	21909	83%	18277	2.691	2.357	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.9	5.1	5.2	0.5
1222	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Other	Retro	23903	82%	19579	2.882	2.524	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	3.1	5.4	5.4	0.5
1223	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Other	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.8	3.1	3.2	0.5
1224	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Other	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%		2	0%	20%	76%	57%	0.0	0.0	0.0	0.0
1225	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Other	Retro	651	38%	246	0.000	0.000	10	\$187.50	100%	50%	3	100%	17%	76%	39%	2.8	0.7	4.3	0.2
1226	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Other	Retro	0	0%	0	0.000	0.000	10	\$0.00	100%	0%	4	100%	17%	76%	57%	#DIV/0!	0.0	0.0	0.0
1227	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Other	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.9	10.2	9.4	0.5
1228	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Other	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.5	2.6	2.8	0.5
1229	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Other	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	28%	0.7	1.3	1.7	0.4
1230	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Other	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	7.5	13.0	11.8	0.6
1231	Industrial	WaterWasteWater	Water Supply & Wastewater treatment pumps and process efficiency	Biz-Custom	Industrial	Retro	5	20%	1	0.000	0.000	11	\$0.45	100%	33%	1	100%	25%	76%	38%	1.2	3.1	1.7	0.6
1232	Industrial	CompressedAir	Efficient Air Compressor Equipment	Biz-Custom	Industrial	ROB	9	11%	1	0.000	0.000	13	\$0.41	100%	24%	1	100%	25%	76%	37%	1.5	5.3	2.0	0.6
1233	Industrial	CompressedAir	Efficient Air Compressor Controls	Biz-Custom	Industrial	Retro	15	7%	1	0.000	0.000	3	\$0.12	100%	83%	2	100%	25%	76%	56%	1.5	1.5	2.5	0.5
1234	Industrial	HVAC	Efficient HVAC Equipment	Biz-Prescriptive HVAC	Industrial	ROB	8	13%	1	0.000	0.000	15	\$0.19	100%	100%	1	100%	25%	76%	57%	5.2	4.5	5.2	0.9
1235	Industrial	HVAC	Efficient HVAC O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.10	100%	50%	2	100%	25%	76%	54%	2.7	4.6	2.5	0.9
1236	Industrial	Lighting	Efficient Lighting Equipment	Biz-Prescriptive Light	Industrial	Retro	2	50%	1	0.000	0.000	15	\$0.17	100%	50%	1	100%	25%	74%	58%	4.5	7.8	5.1	0.8
1237	Industrial	Lighting	Efficient Lighting O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.07	100%	50%	2	100%	25%	74%	63%	2.9	5.0	3.3	0.8
1238	Industrial	Machine Drive	Efficient MachDr Equipment	Biz-Custom																				

C&I Measure Summary: North Dakota

MDU_North Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Assembly	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	75%	54%	2.8	5.6	5.3	0.5
2	Commercial	CompressedAir	Efficient Air Compressors (VSD)	ROB	Assembly	ROB	1583	21%	329	0.039	0.038	13	\$127.00	100%	50%	2	100%	20%	75%	46%	1.3	2.5	2.7	0.5
3	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Assembly	Retro	103919	35%	36372	4.274	4.217	10	\$1150.00	100%	50%	3	100%	50%	75%	56%	12.6	25.2	22.7	0.6
4	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Assembly	Retro	103919	2%	1970	0.231	0.228	13	\$244.00	100%	50%	4	100%	5%	75%	53%	3.9	7.8	7.5	0.5
5	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Assembly	Retro	1480	50%	740	0.087	0.086	15	\$49.50	100%	50%	5	5%	20%	75%	55%	8.0	15.9	14.8	0.5
6	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Assembly	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	75%	51%	1.9	3.8	3.8	0.5
7	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Assembly	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	75%	50%	1.0	2.0	2.3	0.5
8	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Assembly	ROB	11904	13%	1514	0.454	0.198	12	\$2,162.00	100%	50%	1	14%	17%	75%	25%	0.4	0.8	1.1	0.4
9	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Assembly	ROB	6351	15%	924	0.416	0.181	12	\$1,682.00	100%	50%	2	18%	53%	75%	21%	0.4	0.8	0.9	0.4
10	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Assembly	ROB	18912	50%	9499	4.275	1.863	12	\$3,824.00	100%	50%	2	18%	53%	75%	46%	1.8	3.6	2.5	0.7
11	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Assembly	ROB	12454	14%	1762	0.396	0.173	12	\$2,126.00	100%	50%	3	27%	24%	75%	28%	0.4	0.9	1.2	0.4
12	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Assembly	ROB	13385	67%	9010	3.337	1.454	12	\$2,490.00	100%	50%	4	6%	45%	75%	49%	2.4	4.7	3.4	0.7
13	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Assembly	ROB	7500	85%	6398	1.535	0.669	12	\$1,891.00	100%	50%	5	3%	16%	75%	49%	1.8	3.6	3.2	0.6
14	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Assembly	ROB	3000	79%	2355	0.698	0.304	12	\$1,497.00	100%	50%	5	3%	16%	75%	40%	0.9	1.8	1.8	0.5
15	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Assembly	ROB	41082	34%	14133	2.144	2.820	16	\$255.00	100%	50%	6	26%	61%	75%	56%	36.6	73.3	56.1	0.7
16	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Assembly	ROB	35485	26%	9319	1.414	1.859	16	\$1,375.00	100%	50%	6	26%	61%	75%	52%	4.5	9.0	7.3	0.6
17	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	432	14%	61	0.035	0.000	15	\$153.28	100%	50%	1	21%	10%	75%	18%	0.3	0.6	0.9	0.4
18	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	432	19%	82	0.047	0.001	15	\$214.59	100%	50%	1	21%	10%	75%	17%	0.3	0.6	0.9	0.3
19	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	432	30%	132	0.076	0.001	15	\$398.52	100%	50%	1	21%	10%	75%	16%	0.3	0.5	0.8	0.3
20	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Assembly	ROB	485	9%	44	0.025	0.000	15	\$71.00	100%	50%	2	21%	10%	75%	22%	0.5	1.0	1.1	0.4
21	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Assembly	ROB	485	13%	65	0.037	0.001	15	\$109.23	100%	50%	2	21%	10%	75%	21%	0.5	0.9	1.1	0.4
22	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Assembly	ROB	485	24%	114	0.066	0.001	15	\$218.46	100%	50%	2	21%	10%	75%	20%	0.4	0.8	1.0	0.4
23	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Assembly	Retro	525	7%	37	0.021	0.000	3	\$5.13	100%	50%	3	43%	50%	75%	53%	1.5	3.1	2.2	0.7
24	Commercial	Cooling	Air Side Economizer	Biz-Custom	Assembly	Retro	435	20%	87	0.050	0.001	15	\$153.28	100%	50%	4	43%	25%	75%	21%	0.4	0.9	1.0	0.4
25	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Assembly	Retro	456	20%	91	0.052	0.001	15	\$197.50	100%	50%	5	43%	20%	75%	19%	0.4	0.7	0.9	0.4
26	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	450	13%	56	0.032	0.000	15	\$115.00	100%	50%	6	29%	10%	75%	20%	0.4	0.8	1.0	0.4
27	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	450	22%	100	0.057	0.001	15	\$514.00	100%	50%	6	29%	10%	75%	14%	0.2	0.3	0.7	0.2
28	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	450	33%	150	0.086	0.001	15	\$630.50	100%	50%	6	29%	10%	75%	14%	0.2	0.4	0.7	0.3
29	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Assembly	ROB	1801	14%	255	0.147	0.002	11	\$175.00	100%	50%	7	29%	20%	75%	38%	0.9	1.9	1.6	0.6
30	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Assembly	ROB	581	15%	85	0.049	0.001	8	\$84.00	100%	50%	8	0%	20%	75%	31%	0.5	1.0	1.1	0.5
31	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Assembly	ROB	460	9%	41	0.024	0.000	23	\$126.00	100%	50%	9	26%	10%	75%	16%	0.3	0.7	0.9	0.4
32	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Assembly	ROB	231	23%	53	0.030	0.000	23	\$126.00	100%	50%	10	3%	10%	75%	18%	0.4	0.8	1.0	0.4
33	Commercial	Cooling	Window Film	Biz-Custom	Assembly	Retro	6000	4%	264	0.152	0.002	10	\$153.81	100%	50%	11	100%	25%	75%	41%	0.5	2.0	0.2	0.6
34	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Assembly	Retro	6000	6%	360	0.207	0.003	25	\$700.00	100%	50%	11	100%	2%	75%	20%	0.5	1.1	1.2	0.5
35	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Assembly	Retro	485	0%	0	0.037	0.000	15	\$0.00	100%	0%	12	100%	2%	75%	56%	#DIV/0!	0.0	0.0	0.0
36	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	5236	5%	264	0.051	0.058	15	\$135.00	100%	50%	1	31%	10%	75%	43%	1.3	2.6	2.4	0.6
37	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	5236	10%	544	0.105	0.119	15	\$445.76	100%	50%	1	31%	10%	75%	34%	0.8	1.6	1.7	0.5
38	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	5236	14%	724	0.140	0.159	15	\$445.76	100%	50%	1	31%	10%	75%	40%	1.1	2.2	2.1	0.5
39	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5897	6%	336	0.065	0.073	15	\$100.00	100%	50%	2	16%	10%	75%	49%	2.3	4.5	3.7	0.6
40	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5897	11%	633	0.122	0.138	15	\$171.08	100%	50%	2	16%	10%	75%	49%	2.5	5.0	4.0	0.6
41	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	6083	6%	360	0.069	0.079	15	\$100.00	100%	50%	3	15%	10%	75%	49%	2.4	4.8	3.9	0.6
42	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	6083	11%	674	0.130	0.147	15	\$182.26	100%	50%	3	15%	10%	75%	49%	2.5	5.0	4.0	0.6
43	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	6296	6%	386	0.074	0.084	15	\$100.00	100%	50%	4	15%	10%	75%	50%	2.6	5.2	4.2	0.6
44	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	6296	11%	720	0.139	0.158	15	\$201.80	100%	50%	4	15%	10%	75%	49%	2.4	4.8	3.9	0.6
45	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Assembly	ROB	3817	3%	111	0.021	0.024	25	\$108.00	100%	50%	5	7%	20%	75%	31%	0.9	1.8	1.9	0.5
46	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Assembly	ROB	3817	4%	150	0.029	0.033	25	\$108.00	100%	50%	5	7%	20%	75%	37%	1.2	2.5	2.4	0.5
47	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Assembly	ROB	6374	3%	191	0.037	0.042	8	\$84.00	100%	50%	6	0%	20%	75%	45%	1.0	1.9	1.8	0.5
48	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Assembly	ROB	312	64%	200	0.030	0.040	10	\$784.00	100%	50%	1	100%	0%	70%	12%	0.1	0.2	0.7	0.2
49	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Assembly	Retro	312	2%	6	0.001	0.001	20	\$60.00	100%	50%	2	100%	80%	70%	12%	0.1	0.2	0.6	0.1
50	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Assembly	ROB	2262	32%	713	0.108	0.142	5	\$92.90	100%	50%	3	20%	85%	70%	49%	2.1	4.2	3.5	0.6
51	Commercial	HotWater	Faucet Aerator	Biz-Custom	Assembly	Retro	443	22%	97	0.015	0.019	10	\$6.70	100%	50%	4	20%	85%	70%	51%	6.9	13.9	10.7	0.6
52	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Assembly	ROB	2239	29%	660	0.100	0.132	11	\$190.00	100%	50%	5	25%	33%	70%	45%	1.8	3.6	3.1	0.6
53	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Assembly	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	1	14%	69%	75%	54%	0.9	1.8	2.4	0.4
54	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Assembly	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	2	14%	69%	75%	54%	0.9	1.8	2.4	0.4
55	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Assembly	Retro	1589	60%	959	0.000	0.133	12	\$756.00	100%	50%	3	14%	69%	75%	42%	0.5	1.0	1.5	0.3
56	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Assembly	Retro	1742	66%	1154	0.000	0.160	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.0	2.1	2.6	0.4
57	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Assembly	Retro	3235	60%	1953	0.000	0.270	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.2	1.7	0.3
58	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Assembly	Retro	1589	60%	959	0.000	0.133	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3

C&I Measure Summary: North Dakota

MDU_North Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
65	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Assembly	Retro	67	100%	67	0.009	0.008	11	\$12.00	100%	50%	5	56%	0%	71%	58%	2.4	4.9	4.7	0.5
66	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Assembly	Retro	390	30%	117	0.015	0.014	10	\$57.50	100%	50%	6	60%	11%	71%	51%	0.8	1.7	1.9	0.4
67	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiF)	Biz-Custom	Assembly	Retro	1	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	60%	11%	71%	35%	0.6	1.3	1.6	0.4
68	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Assembly	Retro	305	30%	91	0.012	0.011	15	\$53.90	100%	50%	6	60%	11%	71%	46%	0.9	1.9	2.1	0.4
69	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Assembly	Retro	69	43%	29	0.004	0.004	5	\$32.50	100%	50%	7	1%	85%	71%	30%	0.2	0.4	0.9	0.2
70	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Assembly	Retro	385	61%	237	0.028	0.027	5	\$230.00	100%	50%	1	5%	30%	75%	32%	0.2	0.5	0.9	0.3
71	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Assembly	Retro	9932	50%	4966	0.583	0.576	20	\$1,586.00	100%	50%	2	37%	22%	75%	48%	2.0	4.0	4.1	0.5
72	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Assembly	Retro	262	83%	217	0.026	0.025	10	\$483.00	100%	50%	3	1%	10%	75%	19%	0.2	0.4	0.8	0.2
73	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Assembly	Retro	2984	25%	746	0.088	0.086	10	\$20,309.70	100%	50%	4	0%	10%	75%	14%	1.3	0.0	3.2	0.0
74	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Assembly	ROB	3096	3%	85	0.010	0.010	15	\$59.00	100%	50%	5	1%	70%	75%	38%	0.8	1.5	1.9	0.4
75	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Assembly	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	39%	10%	75%	17%	0.4	0.9	0.8	0.6
76	Commercial	Motors	Cogged V-Belt	Biz-Custom	Assembly	Retro	17237	3%	534	0.079	0.065	15	\$383.81	100%	50%	1	50%	10%	75%	37%	0.8	1.6	1.8	0.4
77	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Assembly	Retro	3805	34%	1290	0.191	0.157	15	\$168.00	100%	50%	2	100%	10%	75%	53%	4.3	8.6	7.9	0.5
78	Commercial	Motors	Power Drive Systems	Biz-Custom	Assembly	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	75%	53%	4.3	8.6	7.9	0.5
79	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Assembly	Retro	33406	31%	10222	1.517	1.248	15	\$527.50	100%	50%	2	100%	1%	75%	55%	10.9	21.8	19.1	0.6
80	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Assembly	Retro	551	26%	110	0.013	0.013	6	\$0.00	100%		1	5%	90%	75%	56%	#DIV/0!	0.0	0.0	0.0
81	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Assembly	Retro	1398	10%	140	0.000	0.146	5	\$40.00	100%	50%	2	27%	20%	75%	49%	1.8	3.7	1.9	1.0
82	Commercial	PlugLoads_Office	Plug Load, Occupancy Sensor	Biz-Custom	Assembly	Retro	1126	15%	169	0.000	0.111	8	\$70.00	100%	50%	2	27%	20%	75%	46%	1.4	2.7	1.9	0.7
83	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Assembly	ROB	1621	23%	368	0.042	0.043	8	\$118.00	100%	50%	3	36%	25%	75%	48%	1.0	2.1	2.3	0.4
84	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Assembly	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	36%	25%	75%	46%	0.8	1.7	2.0	0.4
85	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Assembly	Retro	86783	18%	15778	1.854	1.829	15	\$480.00	100%	50%	3	36%	25%	75%	56%	17.5	35.0	32.0	0.5
86	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Assembly	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	36%	25%	75%	48%	1.9	3.8	4.0	0.5
87	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Assembly	Retro	764	47%	358	0.042	0.042	15	\$82.00	100%	50%	4	36%	25%	75%	50%	2.3	4.7	4.7	0.5
88	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Assembly	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	1%	10%	75%	46%	1.3	2.7	2.9	0.5
89	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Assembly	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	5%	50%	61%	45%	#DIV/0!	0.0	0.0	0.0
90	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Assembly	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	61%	40%	2.9	5.7	5.5	0.5
91	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Assembly	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	3%	25%	61%	16%	0.4	0.7	1.1	0.3
92	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Assembly	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	61%	19%	0.4	0.8	1.2	0.3
93	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Assembly	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	11%	25%	61%	11%	0.2	0.4	0.8	0.2
94	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Assembly	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	3%	80%	61%	40%	2.8	5.7	5.5	0.5
95	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Assembly	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	3%	25%	61%	40%	2.5	5.0	4.9	0.5
96	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Assembly	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	4%	25%	61%	26%	0.7	1.4	1.7	0.4
97	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Assembly	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	18%	25%	61%	33%	1.0	2.0	2.2	0.4
98	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Assembly	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	61%	36%	1.4	2.7	2.8	0.5
99	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Assembly	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	3%	80%	61%	40%	2.8	5.7	5.5	0.5
100	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Assembly	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	3%	2%	61%	30%	0.7	1.3	1.7	0.4
101	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Assembly	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	18%	54%	61%	14%	0.2	0.5	0.9	0.3
102	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Assembly	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	18%	54%	61%	9%	0.1	0.2	0.7	0.2
103	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Assembly	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	6%	25%	61%	39%	1.9	3.9	3.9	0.5
104	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Assembly	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	6%	25%	61%	43%	5.5	10.9	10.0	0.5
105	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Assembly	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	6%	54%	61%	19%	0.4	0.7	1.1	0.3
106	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Assembly	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	6%	54%	61%	9%	0.1	0.2	0.7	0.1
107	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Assembly	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	92%	25%	61%	11%	0.5	0.9	0.8	0.6
108	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Assembly	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	92%	25%	61%	40%	1.0	2.1	2.3	0.5
109	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Assembly	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	6%	44%	61%	37%	1.3	2.7	2.8	0.5
110	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Assembly	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	2%	30%	61%	10%	0.2	0.3	0.8	0.2
111	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Assembly	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	11%	35%	61%	42%	2.9	5.8	5.4	0.5
112	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Assembly	Retro	3443	63%	2152	0.000	0.000	15	\$147.41	100%	50%	1	75%	14%	75%	54%	6.2	10.4	16.6	0.4
113	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Assembly	Retro	19919	82%	16287	2.451	2.138	15	\$4,130.00	100%	50%	2	100%	25%	75%	50%	2.3	4.5	4.3	0.5
114	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Assembly	Retro	21909	83%	18277	2.751	2.400	15	\$4,190.00	100%	50%	3	100%	25%	75%	50%	2.5	5.0	4.7	0.5
115	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Assembly	Retro	23903	82%	19579	2.947	2.571	15	\$4,230.00	100%	50%	4	100%	25%	75%	51%	2.6	5.3	4.9	0.5
116	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Assembly	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	75%	46%	1.5	3.0	2.9	0.5
117	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Assembly	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%		2	0%	20%	75%	56%	0.0	0.0	0.0	0.0
118	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Assembly	Retro	508	73%	371	0.000	0.000	10	\$187.50	100%	50%	3	100%	14%	75%	44%	5.0	1.0	11.4	0.3
119	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Assembly	Retro	610	16%	99	0.073	0.000	10	\$341.21	100%	50%	4	100%	14%	75%	14%	1.6	0.4	3.6	0.3
120	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Assembly	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	75%	53%	4.9	9.8	8.5	0.6
121	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Assembly	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	75%	46%	1.3	2.5	2.5	0.5
122	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Assembly	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	75%	25%	0.6	1.2	1.5	0.4
123	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Assembly	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	75%	54%	6.3	12.7	10.6	0.6
124	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Education	Retro	6	17%	1	0.000	0.000	5</												

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
142	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Education	ROB	306	30%	93	0.061	0.000	15	\$398.52	100%	50%	1	25%	10%	75%	14%	0.2	0.4	0.7	0.3	
143	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Education	ROB	344	9%	31	0.021	0.000	15	\$71.00	100%	50%	2	25%	10%	75%	19%	0.4	0.7	0.9	0.4	
144	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Education	ROB	344	13%	46	0.030	0.000	15	\$109.23	100%	50%	2	25%	10%	75%	18%	0.4	0.7	0.9	0.4	
145	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Education	ROB	344	24%	81	0.053	0.000	15	\$218.46	100%	50%	2	25%	10%	75%	17%	0.3	0.6	0.9	0.4	
146	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Education	Retro	372	7%	26	0.017	0.000	3	\$5.33	100%	50%	3	50%	50%	75%	51%	1.1	2.3	1.7	0.7	
147	Commercial	Cooling	Air Side Economizer	Biz-Custom	Education	Retro	308	20%	62	0.041	0.000	15	\$153.28	100%	50%	4	50%	25%	75%	18%	0.3	0.7	0.9	0.4	
148	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Education	Retro	323	20%	65	0.043	0.000	15	\$197.50	100%	50%	5	50%	20%	75%	15%	0.3	0.5	0.8	0.3	
149	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	319	13%	40	0.026	0.000	15	\$115.00	100%	50%	6	0%	10%	75%	16%	0.3	0.6	0.8	0.4	
150	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	319	22%	71	0.047	0.000	15	\$514.00	100%	50%	6	0%	10%	75%	14%	0.1	0.2	0.6	0.2	
151	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	319	33%	106	0.070	0.000	15	\$630.50	100%	50%	6	0%	10%	75%	14%	0.1	0.3	0.7	0.2	
152	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Education	ROB	1276	14%	181	0.119	0.000	11	\$175.00	100%	50%	7	0%	20%	75%	32%	0.7	1.4	1.3	0.5	
153	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Education	ROB	412	15%	60	0.039	0.000	8	\$84.00	100%	50%	8	0%	20%	75%	25%	0.4	0.8	0.9	0.4	
154	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Education	ROB	326	9%	29	0.019	0.000	23	\$126.00	100%	50%	9	45%	10%	75%	14%	0.2	0.5	0.8	0.3	
155	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Education	ROB	164	23%	37	0.025	0.000	23	\$126.00	100%	50%	10	5%	10%	75%	14%	0.3	0.6	0.9	0.4	
156	Commercial	Cooling	Window Film	Biz-Custom	Education	Retro	6000	4%	264	0.174	0.000	10	\$153.81	100%	50%	11	100%	25%	75%	41%	0.6	2.2	0.2	0.6	
157	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Education	Retro	6000	6%	360	0.237	0.000	25	\$700.00	100%	50%	11	100%	2%	75%	20%	0.6	1.1	1.2	0.5	
158	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Education	Retro	344	0%	0	0.068	0.000	15	\$0.00	100%	0%	12	100%	2%	75%	56%	#DIV/0!	0.0	0.0	0.0	
159	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	3698	5%	187	0.042	0.046	15	\$135.00	100%	50%	1	0%	10%	75%	37%	1.0	2.0	1.8	0.5	
160	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	3698	10%	384	0.085	0.095	15	\$445.76	100%	50%	1	0%	10%	75%	29%	0.6	1.2	1.3	0.5	
161	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	3698	14%	512	0.114	0.127	15	\$520.06	100%	50%	1	0%	10%	75%	31%	0.7	1.4	1.4	0.5	
162	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	4165	6%	237	0.053	0.059	15	\$100.00	100%	50%	2	28%	10%	75%	46%	1.7	3.4	2.8	0.6	
163	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	4165	11%	447	0.099	0.111	15	\$171.08	100%	50%	2	28%	10%	75%	47%	1.9	3.7	3.0	0.6	
164	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	4296	6%	254	0.056	0.063	15	\$100.00	100%	50%	3	27%	10%	75%	46%	1.8	3.6	2.9	0.6	
165	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	4296	11%	476	0.106	0.118	15	\$182.26	100%	50%	3	27%	10%	75%	47%	1.9	3.7	3.0	0.6	
166	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	4448	6%	273	0.061	0.068	15	\$100.00	100%	50%	4	27%	10%	75%	47%	2.0	3.9	3.1	0.6	
167	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	4448	11%	509	0.113	0.126	15	\$201.80	100%	50%	4	27%	10%	75%	46%	1.8	3.6	2.9	0.6	
168	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Education	ROB	2696	3%	78	0.017	0.019	25	\$108.00	100%	50%	5	9%	20%	75%	26%	0.7	1.4	1.5	0.5	
169	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Education	ROB	2696	4%	106	0.024	0.026	25	\$108.00	100%	50%	5	9%	20%	75%	31%	0.9	1.9	1.8	0.5	
170	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Education	ROB	4502	3%	135	0.030	0.034	8	\$84.00	100%	50%	6	0%	20%	75%	40%	0.7	1.5	1.4	0.5	
171	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Education	ROB	632	64%	405	0.061	0.081	10	\$784.00	100%	50%	1	100%	17%	70%	17%	0.2	0.5	0.9	0.3	
172	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Education	Retro	632	2%	13	0.002	0.003	20	\$60.00	100%	50%	2	100%	80%	70%	12%	0.2	0.3	0.7	0.2	
173	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Education	ROB	1810	32%	570	0.087	0.114	5	\$92.90	100%	50%	3	20%	85%	70%	48%	1.7	3.3	2.9	0.6	
174	Commercial	HotWater	Faucet Aerator	Biz-Custom	Education	Retro	355	22%	78	0.012	0.016	10	\$6.70	100%	50%	4	20%	85%	70%	50%	5.5	11.1	8.7	0.6	
175	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Education	ROB	2239	29%	660	0.100	0.132	11	\$190.00	100%	50%	5	25%	33%	70%	45%	1.8	3.6	3.1	0.6	
176	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Education	Retro	856	66%	567	0.000	0.079	12	\$248.00	100%	50%	1	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
177	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Education	Retro	856	66%	567	0.000	0.079	12	\$248.00	100%	50%	2	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
178	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Education	Retro	1589	60%	959	0.000	0.134	12	\$756.00	100%	50%	3	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
179	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Education	Retro	1742	66%	1154	0.000	0.161	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.0	2.1	2.6	0.4	
180	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Education	Retro	3235	60%	1953	0.000	0.273	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.2	1.7	0.3	
181	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Education	Retro	1589	60%	959	0.000	0.134	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
182	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Education	Retro	180	68%	121	0.012	0.014	15	\$27.00	100%	50%	1	10%	43%	71%	57%	2.4	4.7	4.8	0.5	
183	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Education	Retro	129	74%	95	0.010	0.011	15	\$59.00	100%	50%	1	10%	43%	71%	45%	0.8	1.7	2.0	0.4	
184	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Education	Retro	116	45%	52	0.005	0.006	15	\$1.88	100%	50%	2	88%	43%	71%	63%	14.4	28.8	26.9	0.5	
185	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Education	Retro	262	50%	131	0.013	0.016	15	\$70.00	100%	50%	2	88%	43%	71%	49%	1.0	2.0	2.3	0.4	
186	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Education	Retro	520	61%	316	0.032	0.037	15	\$44.00	100%	50%	3	1%	43%	71%	59%	3.8	7.5	7.4	0.5	
187	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Education	Retro	2440	68%	1660	0.167	0.196	15	\$330.00	100%	50%	4	1%	43%	71%	57%	2.6	5.3	5.3	0.5	
188	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Education	Retro	97	100%	97	0.010	0.011	11	\$12.00	100%	50%	5	88%	0%	71%	60%	3.4	6.8	6.6	0.5	
189	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Education	Retro	564	30%	169	0.017	0.020	10	\$57.50	100%	50%	6	90%	11%	71%	54%	1.1	2.3	2.6	0.4	
190	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Education	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	90%	11%	71%	47%	0.9	1.8	2.1	0.4	
191	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Education	Retro	440	30%	132	0.013	0.016	15	\$77.97	100%	50%	6	90%	11%	71%	46%	0.9	1.8	2.1	0.4	
192	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Education	Retro	66	43%	28	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	71%	29%	0.2	0.4	0.8	0.2	
193	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Education	Retro	385	61%	237	0.024	0.026	5	\$230.00	100%	50%	1	5%	30%	75%	32%	0.2	0.4	0.9	0.2	
194	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Education	Retro	9932	50%	4966	0.514	0.542	20	\$1,586.00	100%	50%	2	46%	22%	75%	48%	1.9	3.9	4.1	0.5	
195	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Education	Retro	2093	83%	1737	0.180	0.190	10	\$483.00	100%	50%	3	1%	10%	75%	49%	1.4	2.8	3.0	0.5	
196	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Education	Retro	2984	25%	746	0.077	0.081	10	\$20,309.70	100%	50%	4	0%	10%	75%	14%	1.3	0.0	3.2	0.0	
197	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Education	ROB	3096	3%	85	0.009	0.009	15	\$59.00	100%	50%	5	1%	70%	75%	38%	0.7	1.5	1.9	0.4	
198	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Education	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	0%	10%	75%	17%	0.4	0.8	0.8	0.5	
199	Commercial	Motors	Cogged V-Belt	Biz-Custom	Education	Retro	17237	3%	534	0.117	0.060	15	\$383.81	100%	50%	1	50%	10%	75%	37%	0.8	1.7	1.8	0.5	
200																									

C&I Measure Summary: North Dakota

MDU_North Dakota																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
217	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Education	Retro	2884	55%	1586	0.222	0.177	15	\$304.59	100%	50%	6	6%	80%	61%	40%	2.8	5.7	5.5	0.5	
218	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Education	Retro	2236	32%	716	0.100	0.080	15	\$155.00	100%	50%	7	6%	25%	61%	40%	2.5	5.0	4.9	0.5	
219	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Education	Retro	2960	50%	1480	0.207	0.166	15	\$1,170.00	100%	50%	8	8%	25%	61%	26%	0.7	1.4	1.7	0.4	
220	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Education	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	14%	25%	61%	33%	1.0	2.0	2.2	0.4	
221	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Education	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	4%	25%	61%	36%	1.4	2.7	2.8	0.5	
222	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Education	Retro	2884	55%	1586	0.222	0.177	15	\$304.59	100%	50%	11	2%	80%	61%	40%	2.8	5.7	5.5	0.5	
223	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Education	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	2%	2%	61%	30%	0.7	1.3	1.7	0.4	
224	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Education	ROB	2140	29%	629	0.088	0.070	12	\$1,238.50	100%	50%	13	13%	54%	61%	14%	0.2	0.5	0.9	0.3	
225	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Education	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	13%	54%	61%	9%	0.1	0.2	0.7	0.2	
226	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Education	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	5%	75%	61%	39%	1.9	3.9	3.9	0.5	
227	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Education	Retro	2512	59%	1486	0.208	0.166	12	\$127.00	100%	50%	15	5%	25%	61%	43%	5.5	11.0	10.0	0.5	
228	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Education	ROB	6374	20%	1275	0.178	0.143	12	\$1,650.50	100%	50%	16	4%	54%	61%	19%	0.4	0.7	1.1	0.3	
229	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Education	ROB	4522	7%	305	0.043	0.034	12	\$1,520.50	100%	50%	16	4%	54%	61%	9%	0.1	0.2	0.7	0.1	
230	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Education	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	93%	25%	61%	11%	0.5	0.9	0.8	0.6	
231	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Education	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	93%	25%	61%	40%	1.0	2.1	2.3	0.5	
232	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Education	ROB	6993	10%	721	0.101	0.081	10	\$222.00	100%	50%	19	4%	44%	61%	37%	1.3	2.7	2.8	0.5	
233	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Education	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	3%	30%	61%	10%	0.2	0.3	0.8	0.2	
234	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Education	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	8%	35%	61%	42%	2.9	5.8	5.4	0.5	
235	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Education	Retro	4291	63%	2682	0.000	0.000	15	\$147.41	100%	50%	1	40%	23%	75%	55%	7.9	12.9	20.9	0.4	
236	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Education	Retro	19919	82%	16287	2.387	2.298	15	\$4,130.00	100%	50%	2	100%	25%	75%	50%	2.3	4.5	4.3	0.5	
237	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Education	Retro	21909	83%	18277	2.678	2.579	15	\$4,190.00	100%	50%	3	100%	25%	75%	50%	2.5	5.0	4.7	0.5	
238	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Education	Retro	23903	82%	19579	2.869	2.763	15	\$4,230.00	100%	50%	4	100%	25%	75%	51%	2.7	5.3	4.9	0.5	
239	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Education	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	75%	46%	1.5	3.0	2.9	0.5	
240	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Education	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	2%	0%	20%	75%	56%	0.0	0.0	0.0	0.0		
241	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Education	Retro	360	76%	272	0.000	0.000	10	\$187.50	100%	50%	3	100%	23%	75%	38%	3.6	0.8	8.4	0.2	
242	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Education	Retro	432	61%	262	0.052	0.000	10	\$341.21	100%	50%	4	100%	23%	75%	27%	1.4	0.6	3.4	0.3	
243	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Education	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	75%	53%	4.9	9.8	8.5	0.6	
244	Commercial	WholeBldg	WholeBlg - Com RET	Biz-NC/Retrofit	Education	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	75%	46%	1.3	2.5	2.5	0.5	
245	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Education	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	75%	25%	0.6	1.2	1.5	0.4	
246	Commercial	WholeBldg_NC	WholeBlg - Com NC	Biz-NC/Retrofit	Education	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	75%	54%	6.3	12.7	10.6	0.6	
247	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Food Sales	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	75%	54%	3.0	5.9	5.3	0.6	
248	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Food Sales	ROB	1583	21%	329	0.051	0.038	13	\$127.00	100%	50%	2	100%	20%	75%	46%	1.3	2.6	2.7	0.5	
249	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Food Sales	Retro	103919	35%	36372	5.616	4.169	10	\$1,150.00	100%	50%	3	100%	50%	75%	56%	13.2	26.5	22.7	0.6	
250	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Food Sales	Retro	103919	2%	1970	0.304	0.226	13	\$244.00	100%	50%	4	100%	5%	75%	53%	4.1	8.2	7.5	0.5	
251	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Food Sales	Retro	1480	50%	740	0.114	0.085	15	\$49.50	100%	50%	5	5%	20%	75%	55%	8.4	16.7	14.8	0.6	
252	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Food Sales	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	75%	51%	2.0	3.9	3.8	0.5	
253	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Food Sales	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	75%	50%	1.1	2.2	2.3	0.5	
254	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Food Sales	ROB	17380	13%	2211	0.454	0.282	12	\$2,162.00	100%	50%	1	14%	17%	75%	31%	0.5	1.1	1.3	0.4	
255	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Food Sales	ROB	9273	15%	1349	0.416	0.258	12	\$1,682.00	100%	50%	2	18%	53%	75%	28%	0.5	1.0	1.1	0.4	
256	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Food Sales	ROB	27611	50%	13869	4.275	2.657	12	\$3,824.00	100%	50%	2	18%	53%	75%	49%	2.3	4.6	3.4	0.7	
257	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Food Sales	ROB	18182	14%	2573	0.396	0.246	12	\$2,126.00	100%	50%	3	27%	24%	75%	34%	0.6	1.1	1.5	0.4	
258	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Food Sales	ROB	19542	67%	13154	3.337	2.074	12	\$2,490.00	100%	50%	4	6%	45%	75%	51%	3.0	6.1	4.8	0.6	
259	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Food Sales	ROB	10950	85%	9340	1.535	0.954	12	\$1,891.00	100%	50%	5	3%	16%	75%	51%	2.4	4.7	4.5	0.5	
260	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Food Sales	ROB	4380	79%	3438	0.698	0.434	12	\$1,497.00	100%	50%	5	3%	16%	75%	45%	1.2	2.4	2.4	0.5	
261	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Food Sales	ROB	56463	36%	20545	3.884	3.187	16	\$255.00	100%	50%	6	26%	61%	75%	56%	52.6	105.3	81.3	0.6	
262	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Food Sales	ROB	47891	29%	13861	2.621	2.150	16	\$1,375.00	100%	50%	6	26%	61%	75%	54%	6.6	13.2	10.6	0.6	
263	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	496	14%	70	0.046	0.000	15	\$153.28	100%	50%	1	18%	10%	75%	19%	0.4	0.8	0.9	0.4	
264	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	496	19%	94	0.061	0.000	15	\$214.59	100%	50%	1	18%	10%	75%	19%	0.4	0.7	0.9	0.4	
265	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	496	30%	151	0.099	0.000	15	\$398.52	100%	50%	1	18%	10%	75%	17%	0.3	0.6	0.9	0.4	
266	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	557	9%	51	0.033	0.000	15	\$71.00	100%	50%	2	18%	10%	75%	25%	0.6	1.2	1.2	0.5	
267	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	557	13%	74	0.049	0.000	15	\$109.23	100%	50%	2	18%	10%	75%	24%	0.6	1.1	1.2	0.5	
268	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	557	24%	131	0.086	0.000	15	\$218.46	100%	50%	2	18%	10%	75%	22%	0.5	1.0	1.1	0.5	
269	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Food Sales	Retro	603	7%	42	0.028	0.000	3	\$5.33	100%	50%	3	37%	50%	75%	53%	1.8	3.7	2.4	0.8	
270	Commercial	Cooling	Air Side Economizer	Biz-Custom	Food Sales	Retro	499	20%	100	0.065	0.000	15	\$153.28	100%	50%	4	37%	25%	75%	24%	0.5	1.1	1.1	0.5	
271	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Food Sales	Retro	523	20%	105	0.069	0.000	15	\$197.50	100%	50%	5	37%	25%	75%	21%	0.4	0.9	1.0	0.4	
272	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	517	13%	65	0.042	0.000	15	\$115.00	100%	50%	6	26%	10%	75%	21%	0.5	0.9	1.0	0.5	
273	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	517	22%	115	0.075	0.000	15	\$514.00	100%	50%	6	26%	10%	75%	14%	0.2	0.4	0.7	0.3	
274	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	517	33%	172	0.113	0.000	15	\$630.50	100%	50%	6	26%	10%	75%	14%	0.2	0.5	0.8	0.3	
275	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Food Sales</																				

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
284	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	4571	14%	659	0.144	0.175	15	\$520.06	100%	50%	1	31%	10%	75%	35%	0.9	1.8	1.7	0.5	
285	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	5132	6%	294	0.064	0.078	15	\$100.00	100%	50%	2	15%	10%	75%	48%	2.1	4.3	3.3	0.6	
286	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	5132	11%	554	0.121	0.147	15	\$171.08	100%	50%	2	15%	10%	75%	48%	2.4	4.7	3.6	0.7	
287	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	5295	6%	317	0.069	0.084	15	\$100.00	100%	50%	3	14%	10%	75%	48%	2.3	4.6	3.5	0.7	
288	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	5295	11%	591	0.129	0.157	15	\$182.26	100%	50%	3	14%	10%	75%	48%	2.4	4.7	3.6	0.7	
289	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	5488	6%	341	0.074	0.090	15	\$100.00	100%	50%	4	14%	10%	75%	49%	2.5	5.0	3.8	0.7	
290	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	5488	12%	634	0.139	0.168	15	\$201.80	100%	50%	4	14%	10%	75%	48%	2.3	4.6	3.5	0.7	
291	Commercial	Heating	Geothermal HP - 17 IEER < 135kbtu	Biz-Prescriptive HVAC	Food Sales	ROB	3350	3%	99	0.022	0.026	25	\$108.00	100%	50%	5	8%	20%	75%	30%	0.9	1.8	1.7	0.5	
292	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Food Sales	ROB	3350	4%	144	0.032	0.038	25	\$108.00	100%	50%	5	8%	20%	75%	36%	1.3	2.6	2.3	0.6	
293	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Food Sales	ROB	5552	3%	194	0.042	0.051	8	\$84.00	100%	50%	6	10%	20%	75%	45%	1.1	2.1	1.8	0.6	
294	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Food Sales	ROB	599	64%	383	0.072	0.059	10	\$784.00	100%	50%	1	100%	0%	70%	16%	0.2	0.5	0.8	0.3	
295	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Food Sales	Retro	599	2%	12	0.002	0.002	20	\$60.00	100%	50%	2	100%	80%	70%	12%	0.1	0.3	0.7	0.2	
296	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Food Sales	ROB	3303	32%	1041	0.197	0.161	5	\$92.90	100%	50%	3	20%	85%	70%	50%	3.0	6.0	4.8	0.6	
297	Commercial	HotWater	Faucet Aerator	Biz-Custom	Food Sales	Retro	647	22%	142	0.027	0.022	10	\$6.70	100%	50%	4	20%	85%	70%	51%	10.0	20.0	15.4	0.6	
298	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Food Sales	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	70%	45%	1.8	3.5	3.1	0.6	
299	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Food Sales	Retro	856	66%	567	0.013	0.072	12	\$248.00	100%	50%	1	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
300	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Food Sales	Retro	856	66%	567	0.013	0.072	12	\$248.00	100%	50%	2	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
301	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Food Sales	Retro	1589	60%	959	0.023	0.121	12	\$756.00	100%	50%	3	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
302	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Food Sales	Retro	1742	66%	1154	0.027	0.146	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.1	2.1	2.6	0.4	
303	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Food Sales	Retro	3235	60%	1953	0.046	0.247	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.2	1.7	0.4	
304	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Food Sales	Retro	1589	60%	959	0.023	0.121	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
305	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Food Sales	Retro	306	68%	206	0.025	0.024	9	\$27.00	100%	50%	1	12%	43%	71%	60%	2.8	5.7	5.4	0.5	
306	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Food Sales	Retro	220	74%	162	0.020	0.019	9	\$59.00	100%	50%	1	12%	43%	71%	54%	1.0	2.0	2.3	0.4	
307	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Food Sales	Retro	197	45%	88	0.011	0.010	9	\$1.88	100%	50%	2	88%	43%	71%	64%	17.3	34.7	30.7	0.6	
308	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Food Sales	Retro	445	50%	223	0.027	0.026	9	\$70.00	100%	50%	2	88%	43%	71%	55%	1.2	2.4	2.6	0.5	
309	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Food Sales	Retro	883	61%	537	0.065	0.063	9	\$44.00	100%	50%	3	0%	43%	71%	61%	4.5	9.0	8.4	0.5	
310	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Food Sales	Retro	4147	68%	2821	0.342	0.332	9	\$330.00	100%	50%	4	0%	43%	71%	60%	3.2	6.3	6.0	0.5	
311	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Food Sales	Retro	164	100%	164	0.020	0.019	11	\$12.00	100%	50%	5	88%	0%	71%	62%	5.9	11.8	10.9	0.5	
312	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Food Sales	Retro	959	30%	288	0.035	0.034	10	\$57.50	100%	50%	6	88%	11%	71%	57%	2.0	4.0	4.0	0.5	
313	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Food Sales	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	88%	11%	71%	54%	1.6	3.1	3.3	0.5	
314	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Food Sales	Retro	749	30%	225	0.027	0.026	15	\$132.52	100%	50%	6	88%	11%	71%	46%	0.9	1.8	2.1	0.4	
315	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Food Sales	Retro	64	43%	28	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	71%	29%	0.2	0.4	0.8	0.2	
316	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Food Sales	Retro	385	61%	237	0.048	0.030	5	\$230.00	100%	50%	1	5%	30%	75%	32%	0.3	0.5	0.9	0.3	
317	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Food Sales	Retro	9932	50%	4966	1.009	0.627	20	\$1,586.00	100%	50%	2	16%	22%	75%	48%	2.3	4.5	4.1	0.5	
318	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Food Sales	Retro	3819	83%	3170	0.644	0.400	10	\$483.00	100%	50%	3	1%	10%	75%	52%	3.0	6.0	5.1	0.6	
319	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Food Sales	Retro	2984	25%	746	0.152	0.094	10	\$20,309.70	100%	50%	4	0%	10%	75%	14%	1.3	0.0	3.2	0.0	
320	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Food Sales	ROB	3096	3%	85	0.017	0.011	15	\$59.00	100%	50%	5	0%	70%	75%	38%	0.9	1.7	1.9	0.5	
321	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Food Sales	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	45%	10%	75%	17%	0.6	1.2	0.8	0.8	
322	Commercial	Motors	Cogged V-Belt	Biz-Custom	Food Sales	Retro	19471	3%	604	0.000	0.137	15	\$383.81	100%	50%	1	50%	10%	75%	40%	0.8	1.7	2.0	0.4	
323	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Food Sales	Retro	3805	34%	1290	0.000	0.293	5	\$168.00	100%	50%	2	100%	10%	75%	53%	4.1	8.2	7.9	0.5	
324	Commercial	Motors	Power Drive Systems	Biz-Custom	Food Sales	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	75%	53%	4.1	8.2	7.9	0.5	
325	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Food Sales	Retro	37735	31%	11547	0.000	2.628	15	\$527.50	100%	50%	2	100%	1%	75%	55%	11.7	23.4	21.5	0.5	
326	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Food Sales	Retro	551	26%	110	0.022	0.014	6	\$0.00	100%		1	4%	90%	75%	56%	#DIV/0!	0.0	0.0	0.0	
327	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Food Sales	Retro	1398	10%	140	0.000	0.159	5	\$40.00	100%	50%	2	23%	20%	75%	49%	1.9	3.9	1.9	1.1	
328	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Food Sales	Retro	1126	15%	169	0.000	0.121	8	\$70.00	100%	50%	2	23%	20%	75%	46%	1.4	2.9	1.9	0.8	
329	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Food Sales	ROB	1621	23%	368	0.042	0.046	8	\$118.00	100%	50%	3	40%	25%	75%	48%	1.1	2.1	2.3	0.5	
330	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Food Sales	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	40%	25%	75%	46%	1.0	1.9	2.0	0.5	
331	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Food Sales	Retro	86783	18%	15778	3.205	1.992	15	\$480.00	100%	50%	3	40%	25%	75%	56%	19.9	39.8	32.0	0.6	
332	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Food Sales	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	40%	25%	75%	48%	1.9	3.8	4.0	0.5	
333	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Food Sales	Retro	764	47%	358	0.073	0.045	15	\$82.00	100%	50%	4	40%	25%	75%	50%	2.6	5.3	4.7	0.6	
334	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Food Sales	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	2%	10%	75%	46%	1.5	3.0	2.9	0.5	
335	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Food Sales	Retro	412	50%	206	0.025	0.024	4	\$10.22	100%	50%	1	16%	50%	61%	44%	3.8	7.5	6.9	0.5	
336	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Food Sales	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	1%	50%	61%	40%	2.8	5.6	5.5	0.5	
337	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Food Sales	Retro	1112	25%	278	0.034	0.033	15	\$431.00	100%	50%	3	11%	25%	61%	16%	0.3	0.7	1.1	0.3	
338	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Food Sales	Retro	831	50%	416	0.051	0.049	15	\$559.16	100%	50%	4	2%	10%	61%	19%	0.4	0.8	1.2	0.3	
339	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Food Sales	Retro	813	20%	163	0.020	0.019	15	\$477.00	100%	50%	5	37%	25%	61%	11%	0.2	0.4	0.8	0.2	
340	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Food Sales	Retro	2884	55%	1586	0.193	0.187	15	\$304.59	100%	50%	6	10%	80%	61%	40%	2.8	5.6	5.5	0.5	
341	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Food Sales	Retro	2236	32%	716	0.087	0.085	15	\$155.00	100%	50%	7	10%	25%	61%	40%	2.5	5.0	4.9	0.5	
342	Commercial	Refrigeration																							

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
361	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Food Sales	Retro	23903	82%	19579	2.855	2.763	15	\$4,230.00	100%	50%	4	100%	25%	75%	51%	2.7	5.3	4.9	0.5	
362	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Food Sales	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	75%	46%	1.4	2.8	2.9	0.5	
363	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Food Sales	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%		2	0%	20%	75%	56%	0.0	0.0	0.0	0.0	
364	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Food Sales	Retro	682	33%	228	0.000	0.000	10	\$187.50	100%	50%	3	100%	20%	75%	34%	0.8	0.6	2.4	0.2	
365	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Food Sales	Retro	701	44%	311	0.047	0.000	10	\$341.21	100%	50%	4	100%	20%	75%	30%	1.5	0.6	3.6	0.3	
366	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Food Sales	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	75%	53%	4.7	9.3	8.5	0.5	
367	Commercial	WholeBldg	WholeBlg - Com RET	Biz-NC/Retrofit	Food Sales	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	75%	46%	1.2	2.4	2.5	0.5	
368	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Food Sales	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	75%	25%	0.6	1.1	1.5	0.4	
369	Commercial	WholeBldg_NC	WholeBlg - Com NC	Biz-NC/Retrofit	Food Sales	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	75%	54%	6.0	12.0	10.6	0.6	
370	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Food Service	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	75%	54%	2.8	5.6	5.3	0.5	
371	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Food Service	ROB	1583	21%	329	0.039	0.037	13	\$127.00	100%	50%	2	100%	20%	75%	46%	1.2	2.5	2.7	0.5	
372	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Food Service	Retro	103919	35%	36372	4.295	4.095	10	\$1,150.00	100%	50%	3	100%	50%	75%	56%	12.5	25.0	22.7	0.6	
373	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Food Service	Retro	103919	2%	1970	0.233	0.222	13	\$244.00	100%	50%	4	100%	5%	75%	53%	3.9	7.7	7.5	0.5	
374	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Food Service	Retro	1480	50%	740	0.087	0.083	15	\$49.50	100%	50%	5	5%	20%	75%	55%	7.9	15.8	14.8	0.5	
375	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Food Service	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	75%	51%	1.9	3.7	3.8	0.5	
376	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Food Service	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	75%	50%	1.0	2.0	2.3	0.4	
377	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Food Service	ROB	17380	13%	2211	0.454	0.524	12	\$2,162.00	100%	50%	1	14%	17%	75%	31%	0.6	1.2	1.3	0.5	
378	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Food Service	ROB	9273	15%	1349	0.416	0.479	12	\$1,682.00	100%	50%	2	18%	53%	75%	28%	0.6	1.2	1.1	0.5	
379	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Food Service	ROB	27611	50%	13869	4.275	4.929	12	\$3,824.00	100%	50%	2	18%	53%	75%	49%	2.7	5.4	3.4	0.8	
380	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Food Service	ROB	18182	14%	2573	0.396	0.457	12	\$2,126.00	100%	50%	3	27%	24%	75%	34%	0.6	1.3	1.5	0.4	
381	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Food Service	ROB	19542	67%	13154	3.337	3.848	12	\$2,490.00	100%	50%	4	6%	45%	75%	51%	3.5	7.1	4.8	0.7	
382	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Food Service	ROB	10950	85%	9340	1.535	1.770	12	\$1,891.00	100%	50%	5	3%	16%	75%	51%	2.7	5.3	4.5	0.6	
383	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Food Service	ROB	4380	79%	3438	0.698	0.805	12	\$1,497.00	100%	50%	5	3%	16%	75%	45%	1.4	2.7	2.4	0.6	
384	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Food Service	ROB	56463	36%	20545	3.884	3.187	16	\$255.00	100%	50%	6	26%	61%	75%	56%	52.6	105.3	81.3	0.6	
385	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Food Service	ROB	47891	29%	13861	2.621	2.150	16	\$1,375.00	100%	50%	6	26%	61%	75%	54%	6.6	13.2	10.6	0.6	
386	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	554	14%	78	0.047	0.000	15	\$153.28	100%	50%	1	19%	10%	75%	20%	0.4	0.8	1.0	0.4	
387	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	554	19%	105	0.063	0.000	15	\$214.59	100%	50%	1	19%	10%	75%	20%	0.4	0.8	1.0	0.4	
388	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	554	30%	169	0.101	0.001	15	\$398.52	100%	50%	1	19%	10%	75%	18%	0.3	0.7	0.9	0.4	
389	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Service	ROB	622	9%	57	0.034	0.000	15	\$71.00	100%	50%	2	19%	10%	75%	27%	0.6	1.3	1.3	0.5	
390	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Service	ROB	622	13%	83	0.050	0.000	15	\$109.23	100%	50%	2	19%	10%	75%	27%	0.6	1.2	1.2	0.5	
391	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Service	ROB	622	24%	146	0.088	0.001	15	\$218.46	100%	50%	2	19%	10%	75%	24%	0.5	1.1	1.1	0.5	
392	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Food Service	Retro	674	7%	47	0.028	0.000	3	\$5.33	100%	50%	3	38%	50%	75%	53%	1.9	3.9	2.6	0.7	
393	Commercial	Cooling	Air Side Economizer	Biz-Custom	Food Service	Retro	558	20%	112	0.067	0.001	15	\$153.28	100%	50%	4	38%	25%	75%	26%	0.6	1.2	1.2	0.5	
394	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Food Service	Retro	584	20%	117	0.070	0.001	15	\$197.50	100%	50%	5	38%	20%	75%	21%	0.5	0.9	1.1	0.4	
395	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	578	13%	72	0.043	0.000	15	\$115.00	100%	50%	6	25%	10%	75%	23%	0.5	1.0	1.1	0.5	
396	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	578	22%	128	0.077	0.001	15	\$514.00	100%	50%	6	25%	10%	75%	14%	0.2	0.4	0.7	0.3	
397	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	578	33%	193	0.115	0.001	15	\$630.50	100%	50%	6	25%	10%	75%	15%	0.2	0.5	0.8	0.3	
398	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Food Service	ROB	2310	14%	327	0.196	0.002	11	\$175.00	100%	50%	7	25%	20%	75%	43%	1.2	2.4	1.9	0.6	
399	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Food Service	ROB	745	15%	109	0.065	0.001	8	\$84.00	100%	50%	8	38%	20%	75%	35%	0.7	1.3	1.3	0.5	
400	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Food Service	ROB	590	9%	53	0.032	0.000	23	\$126.00	100%	50%	9	0%	10%	75%	18%	0.4	0.9	1.0	0.4	
401	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Food Service	ROB	297	23%	67	0.040	0.000	23	\$126.00	100%	50%	10	0%	10%	75%	21%	0.5	1.1	1.2	0.5	
402	Commercial	Cooling	Window Film	Biz-Custom	Food Service	Retro	6000	4%	264	0.158	0.001	10	\$153.81	100%	50%	11	100%	25%	75%	41%	0.6	2.1	0.2	0.6	
403	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Food Service	Retro	6000	6%	360	0.216	0.002	25	\$700.00	100%	50%	11	100%	2%	75%	20%	0.5	1.1	1.2	0.5	
404	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Food Service	Retro	622	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	75%	56%	#DIV/0!	0.0	0.0	0.0	
405	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	4048	6%	223	0.045	0.044	15	\$135.00	100%	50%	1	31%	10%	75%	41%	1.1	2.2	2.1	0.5	
406	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	4048	11%	450	0.090	0.090	15	\$445.76	100%	50%	1	31%	10%	75%	31%	0.7	1.3	1.5	0.5	
407	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	4048	15%	609	0.122	0.121	15	\$520.06	100%	50%	1	31%	10%	75%	33%	0.8	1.5	1.6	0.5	
408	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4530	6%	262	0.053	0.052	15	\$100.00	100%	50%	2	16%	10%	75%	47%	1.7	3.5	3.0	0.6	
409	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4530	11%	492	0.099	0.098	15	\$171.08	100%	50%	2	16%	10%	75%	47%	1.9	3.8	3.3	0.6	
410	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4676	6%	283	0.057	0.056	15	\$100.00	100%	50%	3	15%	10%	75%	47%	1.9	3.7	3.2	0.6	
411	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4676	11%	526	0.106	0.105	15	\$182.26	100%	50%	3	15%	10%	75%	47%	1.9	3.8	3.3	0.6	
412	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4852	6%	305	0.061	0.061	15	\$100.00	100%	50%	4	15%	10%	75%	48%	2.0	4.0	3.4	0.6	
413	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4852	12%	566	0.114	0.113	15	\$201.80	100%	50%	4	15%	10%	75%	47%	1.9	3.7	3.2	0.6	
414	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Food Service	ROB	2985	3%	91	0.018	0.018	25	\$108.00	100%	50%	5	14%	20%	75%	28%	0.7	1.5	1.6	0.5	
415	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Food Service	ROB	2985	5%	141	0.028	0.028	25	\$108.00	100%	50%	5	14%	20%	75%	36%	1.2	2.3	2.2	0.5	
416	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Food Service	ROB	4905	4%	198	0.040	0.039	8	\$84.00	100%	50%	6	0%	20%	75%	46%	1.0	2.0	1.9	0.5	
417	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Food Service	ROB	2150	64%	1377	0.260	0.214	10	\$784.00	100%	50%	1	100%	25%	70%	37%	0.8	1.7	1.7	0.5	
418	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Food Service	Retro	2150	2%	43	0.008	0.007	20													

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MDU North Dakota																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
425	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Food Service	Retro	1742	66%	1154	0.000	0.157	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.0	2.1	2.6	0.4	
426	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Food Service	Retro	3235	60%	1953	0.000	0.266	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.2	1.7	0.3	
427	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Food Service	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
428	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Food Service	Retro	320	68%	216	0.033	0.027	9	\$27.00	100%	50%	1	6%	43%	71%	60%	3.1	6.3	5.7	0.6	
429	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Food Service	Retro	230	74%	170	0.026	0.021	9	\$59.00	100%	50%	1	6%	43%	71%	54%	1.1	2.3	2.4	0.5	
430	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Food Service	Retro	206	45%	92	0.014	0.012	9	\$1.88	100%	50%	2	94%	43%	71%	64%	19.2	38.5	32.1	0.6	
431	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Food Service	Retro	467	50%	234	0.035	0.029	9	\$70.00	100%	50%	2	94%	43%	71%	55%	1.3	2.6	2.7	0.5	
432	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Food Service	Retro	926	61%	563	0.085	0.071	9	\$44.00	100%	50%	3	0%	43%	71%	61%	5.0	10.0	8.7	0.6	
433	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Food Service	Retro	4346	68%	2957	0.449	0.371	9	\$330.00	100%	50%	4	0%	43%	71%	60%	3.5	7.0	6.3	0.6	
434	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Food Service	Retro	172	100%	172	0.026	0.022	11	\$12.00	100%	50%	5	94%	0%	71%	62%	6.5	13.1	11.4	0.6	
435	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Food Service	Retro	1005	30%	301	0.046	0.038	10	\$57.50	100%	50%	6	94%	11%	71%	58%	2.2	4.5	4.2	0.5	
436	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Food Service	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	94%	11%	71%	54%	1.7	3.5	3.4	0.5	
437	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Food Service	Retro	785	30%	235	0.036	0.030	15	\$138.87	100%	50%	6	94%	11%	71%	46%	1.0	1.9	2.1	0.5	
438	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Food Service	Retro	66	43%	28	0.004	0.004	5	\$32.50	100%	50%	7	1%	85%	71%	29%	0.2	0.4	0.8	0.3	
439	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Food Service	Retro	385	61%	237	0.028	0.027	5	\$230.00	100%	50%	1	5%	30%	75%	32%	0.2	0.5	0.9	0.3	
440	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Food Service	Retro	9932	50%	4966	0.586	0.559	20	\$1,586.00	100%	50%	2	25%	22%	75%	48%	2.0	4.0	4.1	0.5	
441	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Food Service	Retro	1909	83%	1585	0.187	0.178	10	\$483.00	100%	50%	3	1%	10%	75%	48%	1.3	2.6	2.8	0.5	
442	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Food Service	Retro	2984	25%	746	0.088	0.084	10	\$20,309.70	100%	50%	4	0%	10%	75%	14%	1.3	0.0	3.2	0.0	
443	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Food Service	ROB	3096	3%	85	0.010	0.010	15	\$59.00	100%	50%	5	0%	70%	75%	38%	0.8	1.5	1.9	0.4	
444	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Food Service	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	32%	10%	75%	17%	0.4	0.9	0.8	0.6	
445	Commercial	Motors	Cogged V-Belt	Biz-Custom	Food Service	Retro	17237	3%	534	0.067	0.070	15	\$383.81	100%	50%	1	50%	10%	75%	37%	0.8	1.5	1.8	0.4	
446	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Food Service	Retro	3805	34%	1290	0.161	0.168	15	\$168.00	100%	50%	2	100%	10%	75%	53%	4.2	8.4	7.9	0.5	
447	Commercial	Motors	Power Drive Systems	Biz-Custom	Food Service	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	75%	53%	4.2	8.4	7.9	0.5	
448	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Food Service	Retro	33406	31%	10222	1.276	1.332	15	\$527.50	100%	50%	2	100%	1%	75%	55%	10.7	21.3	19.1	0.6	
449	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Food Service	Retro	551	26%	110	0.013	0.012	6	\$0.00	100%		1	5%	90%	75%	56%	#DIV/0!	0.0	0.0	0.0	
450	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Food Service	Retro	1398	10%	140	0.000	0.142	5	\$40.00	100%	50%	2	31%	20%	75%	49%	1.8	3.6	1.9	1.0	
451	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Food Service	Retro	1126	15%	169	0.000	0.108	8	\$70.00	100%	50%	2	31%	20%	75%	46%	1.3	2.7	1.9	0.7	
452	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Food Service	ROB	1621	23%	368	0.042	0.041	8	\$118.00	100%	50%	3	31%	25%	75%	48%	1.0	2.1	2.3	0.4	
453	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Food Service	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	31%	25%	75%	46%	0.8	1.7	2.0	0.4	
454	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Food Service	Retro	86783	18%	15778	1.863	1.776	15	\$480.00	100%	50%	3	31%	25%	75%	56%	17.4	34.8	32.0	0.5	
455	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Food Service	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	31%	25%	75%	48%	1.9	3.8	4.0	0.5	
456	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Food Service	Retro	764	47%	358	0.042	0.040	15	\$82.00	100%	50%	4	31%	25%	75%	50%	2.3	4.6	4.7	0.5	
457	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Food Service	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	1%	10%	75%	46%	1.3	2.6	2.9	0.5	
458	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Food Service	Retro	88	50%	44	0.006	0.005	4	\$10.22	100%	50%	1	10%	50%	61%	39%	0.8	1.6	1.9	0.4	
459	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Food Service	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	61%	40%	2.9	5.7	5.5	0.5	
460	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Food Service	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	7%	25%	61%	16%	0.4	0.7	1.1	0.3	
461	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Food Service	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	61%	19%	0.4	0.8	1.2	0.3	
462	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Food Service	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	22%	25%	61%	11%	0.2	0.4	0.8	0.2	
463	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Food Service	Retro	2884	55%	1586	0.222	0.174	15	\$304.59	100%	50%	6	6%	80%	61%	40%	2.8	5.7	5.5	0.5	
464	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Food Service	Retro	2236	32%	716	0.100	0.079	15	\$155.00	100%	50%	7	6%	25%	61%	40%	2.5	5.0	4.9	0.5	
465	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom																					

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
507	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Health	ROB	56463	36%	20545	3.847	2.246	16	\$255.00	100%	50%	6	26%	61%	75%	56%	49.0	98.0	81.3	0.6	
508	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Health	ROB	47891	29%	13861	2.595	1.515	16	\$1,375.00	100%	50%	6	26%	61%	75%	54%	6.1	12.3	10.6	0.6	
509	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Health	ROB	702	14%	99	0.035	0.002	15	\$153.28	100%	50%	1	25%	10%	75%	23%	0.4	0.8	1.1	0.4	
510	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Health	ROB	702	19%	133	0.047	0.002	15	\$214.59	100%	50%	1	25%	10%	75%	22%	0.4	0.8	1.1	0.4	
511	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Health	ROB	702	30%	214	0.077	0.004	15	\$398.52	100%	50%	1	25%	10%	75%	21%	0.3	0.7	1.0	0.3	
512	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Health	ROB	788	9%	72	0.026	0.001	15	\$71.00	100%	50%	2	25%	10%	75%	31%	0.6	1.3	1.5	0.4	
513	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Health	ROB	788	13%	105	0.038	0.002	15	\$109.23	100%	50%	2	25%	10%	75%	31%	0.6	1.2	1.4	0.4	
514	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Health	ROB	788	24%	185	0.066	0.003	15	\$218.46	100%	50%	2	25%	10%	75%	29%	0.5	1.1	1.3	0.4	
515	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Health	Retro	854	7%	60	0.021	0.001	3	\$5.33	100%	50%	3	50%	50%	75%	54%	1.9	3.8	3.2	0.6	
516	Commercial	Cooling	Air Side Economizer	Biz-Custom	Health	Retro	707	20%	141	0.051	0.002	15	\$153.28	100%	50%	4	50%	25%	75%	30%	0.6	1.2	1.4	0.4	
517	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Health	Retro	741	20%	148	0.053	0.003	15	\$197.50	100%	50%	5	50%	20%	75%	26%	0.5	0.9	1.2	0.4	
518	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	732	13%	92	0.033	0.002	15	\$115.00	100%	50%	6	0%	10%	75%	27%	0.5	1.0	1.3	0.4	
519	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	732	22%	163	0.058	0.003	15	\$514.00	100%	50%	6	0%	10%	75%	15%	0.2	0.4	0.8	0.2	
520	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	732	33%	244	0.087	0.004	15	\$630.50	100%	50%	6	0%	10%	75%	18%	0.2	0.5	0.9	0.3	
521	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Health	ROB	2928	14%	415	0.149	0.007	11	\$175.00	100%	50%	7	0%	20%	75%	46%	1.2	2.4	2.3	0.5	
522	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Health	ROB	945	15%	138	0.049	0.002	8	\$84.00	100%	50%	8	0%	20%	75%	40%	0.7	1.3	1.5	0.4	
523	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Health	ROB	748	9%	67	0.024	0.001	23	\$126.00	100%	50%	9	45%	10%	75%	21%	0.4	0.9	1.2	0.4	
524	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Health	ROB	376	23%	85	0.031	0.001	23	\$126.00	100%	50%	10	5%	10%	75%	24%	0.5	1.1	1.4	0.4	
525	Commercial	Cooling	Window Film	Biz-Custom	Health	Retro	6000	4%	264	0.095	0.004	10	\$153.81	100%	50%	11	100%	25%	75%	41%	0.4	1.6	0.2	0.5	
526	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Health	Retro	6000	6%	360	0.129	0.006	25	\$700.00	100%	50%	11	100%	2%	75%	20%	0.4	0.9	1.2	0.4	
527	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Health	Retro	788	0%	0	0.309	0.015	15	\$0.00	100%	0%	12	100%	2%	75%	56%	#DIV/0!	0.0	0.0	0.0	
528	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	4720	6%	265	0.032	0.056	15	\$135.00	100%	50%	1	0%	10%	75%	43%	1.2	2.4	2.4	0.5	
529	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	4720	11%	533	0.064	0.113	15	\$445.76	100%	50%	1	0%	10%	75%	33%	0.7	1.5	1.6	0.4	
530	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	4720	15%	723	0.086	0.153	15	\$520.06	100%	50%	1	0%	10%	75%	37%	0.8	1.7	1.8	0.5	
531	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	5274	6%	306	0.037	0.065	15	\$100.00	100%	50%	2	11%	10%	75%	48%	1.9	3.7	3.4	0.5	
532	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	5274	11%	574	0.069	0.122	15	\$171.08	100%	50%	2	11%	10%	75%	49%	2.0	4.1	3.7	0.6	
533	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	5445	6%	331	0.040	0.070	15	\$100.00	100%	50%	3	11%	10%	75%	48%	2.0	4.0	3.7	0.6	
534	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	5445	11%	615	0.074	0.130	15	\$182.26	100%	50%	3	11%	10%	75%	49%	2.1	4.1	3.7	0.6	
535	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	5654	6%	358	0.043	0.076	15	\$100.00	100%	50%	4	11%	10%	75%	49%	2.2	4.4	3.9	0.6	
536	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	5654	12%	662	0.079	0.140	15	\$201.80	100%	50%	4	11%	10%	75%	48%	2.0	4.0	3.6	0.5	
537	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Health	ROB	3489	3%	107	0.013	0.023	25	\$108.00	100%	50%	5	0%	20%	75%	31%	0.8	1.6	1.8	0.4	
538	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Health	ROB	3489	5%	170	0.020	0.036	25	\$108.00	100%	50%	5	0%	20%	75%	40%	1.3	2.6	2.6	0.5	
539	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Health	ROB	5713	4%	244	0.029	0.052	8	\$84.00	100%	50%	6	0%	20%	75%	47%	1.1	2.2	2.2	0.5	
540	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Health	ROB	2205	64%	1412	0.264	0.154	10	\$784.00	100%	50%	1	100%	0%	70%	38%	0.8	1.6	1.8	0.4	
541	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Health	Retro	2205	2%	44	0.008	0.005	20	\$60.00	100%	50%	2	100%	80%	70%	22%	0.5	1.0	1.4	0.4	
542	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Health	ROB	3303	32%	1041	0.195	0.114	5	\$92.90	100%	50%	3	20%	85%	70%	50%	2.8	5.5	4.8	0.6	
543	Commercial	HotWater	Faucet Aerator	Biz-Custom	Health	Retro	647	22%	142	0.027	0.016	10	\$6.70	100%	50%	4	20%	85%	70%	51%	9.3	18.6	15.4	0.6	
544	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Health	ROB	2239	29%	660	0.124	0.072	11	\$190.00	100%	50%	5	25%	33%	70%	45%	1.6	3.3	3.1	0.5	
545	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Health	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	1	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
546	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Health	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	2	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
547	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Health	Retro	1589	60%	959	0.000	0.128	12	\$756.00	100%	50%	3	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
548	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Health	Retro	1742	66%	1154	0.000	0.154	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.0	2.1	2.6	0.4	
549	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Health	Retro	3235	60%	1953	0.000	0.261	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.1	1.7	0.3	
550	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Health	Retro	1589	60%	959	0.000	0.128	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
551	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Health	Retro	349	68%	236	0.032	0.023	9	\$27.00	100%	50%	1	18%	43%	71%	60%	3.2	6.4	6.1	0.5	
552	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Health	Retro	251	74%	185	0.025	0.018	9	\$59.00	100%	50%	1	18%	43%	71%	55%	1.2	2.3	2.5	0.5	
553	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Health	Retro	225	45%	101	0.014	0.010	9	\$1.88	100%	50%	2	81%	43%	71%	64%	19.6	39.3	35.0	0.6	
554	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Health	Retro	509	50%	255	0.035	0.024	9	\$70.00	100%	50%	2	81%	43%	71%	56%	1.3	2.7	2.8	0.5	
555	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Health	Retro	1009	61%	613	0.084	0.059	9	\$44.00	100%	50%	3	0%	43%	71%	62%	5.1	10.2	9.5	0.5	
556	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Health	Retro	4737	68%	3223	0.443	0.309	9	\$330.00	100%	50%	4	0%	43%	71%	61%	3.6	7.2	6.8	0.5	
557	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Health	Retro	187	100%	187	0.026	0.018	11	\$12.00	100%	50%	5	81%	0%	71%	62%	6.7	13.4	12.3	0.5	
558	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Health	Retro	1095	30%	329	0.045	0.031	10	\$57.50	100%	50%	6	82%	11%	71%	58%	2.3	4.6	4.5	0.5	
559	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Health	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	82%	11%	71%	55%	1.8	3.5	3.7	0.5	
560	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Health	Retro	855	30%	257	0.035	0.025	15	\$151.37	100%	50%	6	82%	11%	71%	46%	0.9	1.8	2.1	0.4	
561	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Health	Retro	70	43%	30	0.004	0.003	5	\$32.50	100%	50%	7	1%	85%	71%	30%	0.2	0.4	0.9	0.2	
562	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Health	Retro	385	61%	237	0.031	0.026	5	\$230.00	100%	50%	1	5%	30%	75%	32%	0.2	0.5	0.9	0.3	
563	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Health	Retro	9932	50%	4966	0.646	0.538	20	\$1,586.00	100%	50%	2	37%	22%	75%	48%	2.0	4.0	4.1	0.5	
564	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Health	Retro	1909	83%	1585	0.206	0.172	10	\$483.00	100%	50%	3</									

C&I Measure Summary: North Dakota

MDU_North Dakota																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
578	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Health	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	47%	25%	75%	48%	1.9	3.8	4.0	0.5	
579	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Health	Retro	764	47%	358	0.047	0.039	15	\$82.00	100%	50%	4	47%	25%	75%	50%	2.3	4.7	4.7	0.5	
580	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Health	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	4%	10%	75%	46%	1.3	2.7	2.9	0.5	
581	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Health	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	9%	50%	61%	45%	#DIV/0!	0.0	0.0	0.0	
582	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Health	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	61%	40%	2.9	5.9	5.5	0.5	
583	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Health	Retro	1112	25%	278	0.043	0.032	15	\$431.00	100%	50%	3	6%	25%	61%	16%	0.4	0.7	1.1	0.3	
584	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Health	Retro	831	50%	416	0.064	0.048	15	\$559.16	100%	50%	4	2%	10%	61%	19%	0.4	0.8	1.2	0.3	
585	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Health	Retro	813	20%	163	0.025	0.019	15	\$477.00	100%	50%	5	20%	25%	61%	11%	0.2	0.4	0.8	0.2	
586	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Health	Retro	2884	55%	1586	0.245	0.184	15	\$304.59	100%	50%	6	5%	80%	61%	40%	2.9	5.8	5.5	0.5	
587	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Health	Retro	2236	32%	716	0.111	0.083	15	\$155.00	100%	50%	7	5%	25%	61%	40%	2.6	5.2	4.9	0.5	
588	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Health	Retro	2960	50%	1480	0.229	0.172	15	\$1,170.00	100%	50%	8	7%	25%	61%	26%	0.7	1.4	1.7	0.4	
589	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Health	Retro	631	67%	423	0.065	0.049	12	\$200.00	100%	50%	9	14%	25%	61%	33%	1.0	2.0	2.2	0.5	
590	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Health	Retro	622	59%	368	0.057	0.043	12	\$127.00	100%	50%	10	4%	25%	61%	36%	1.4	2.8	2.8	0.5	
591	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Health	Retro	2884	55%	1586	0.245	0.184	15	\$304.59	100%	50%	11	2%	80%	61%	40%	2.9	5.8	5.5	0.5	
592	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Health	Retro	441	34%	149	0.023	0.017	10	\$90.40	100%	50%	12	2%	2%	61%	30%	0.7	1.4	1.7	0.4	
593	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Health	ROB	2140	29%	629	0.097	0.073	12	\$1,238.50	100%	50%	13	14%	54%	61%	14%	0.2	0.5	0.9	0.3	
594	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Health	ROB	1410	20%	281	0.043	0.033	12	\$1,210.50	100%	50%	13	14%	54%	61%	9%	0.1	0.2	0.7	0.2	
595	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Health	Retro	1113	75%	832	0.129	0.097	12	\$200.00	100%	50%	14	5%	25%	61%	39%	2.0	4.0	3.9	0.5	
596	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Health	Retro	2512	59%	1486	0.230	0.173	12	\$127.00	100%	50%	15	5%	25%	61%	43%	5.6	11.3	10.0	0.6	
597	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Health	ROB	6374	20%	1275	0.197	0.148	12	\$1,650.50	100%	50%	16	5%	54%	61%	19%	0.4	0.7	1.1	0.3	
598	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Health	ROB	4522	7%	305	0.047	0.035	12	\$1,520.50	100%	50%	16	5%	54%	61%	9%	0.1	0.2	0.7	0.1	
599	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Health	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	91%	25%	61%	11%	0.5	1.0	0.8	0.7	
600	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Health	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	91%	25%	61%	40%	1.1	2.2	2.3	0.5	
601	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Health	ROB	6993	10%	721	0.112	0.084	10	\$222.00	100%	50%	19	6%	44%	61%	37%	1.4	2.7	2.8	0.5	
602	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Health	ROB	1278	12%	153	0.024	0.018	14	\$500.00	100%	50%	20	3%	30%	61%	10%	0.2	0.3	0.8	0.2	
603	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Health	Retro	115	74%	84	0.013	0.010	9	\$11.00	100%	50%	21	8%	35%	61%	42%	3.0	6.0	5.4	0.5	
604	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Health	Retro	9151	63%	5719	0.000	0.000	15	\$147.41	100%	50%	1	22%	35%	75%	56%	15.3	27.5	41.0	0.4	
605	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Health	Retro	19919	82%	16287	2.111	1.873	15	\$4,130.00	100%	50%	2	100%	25%	75%	50%	2.1	4.3	4.3	0.5	
606	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Health	Retro	21909	83%	18277	2.369	2.102	15	\$4,190.00	100%	50%	3	100%	25%	75%	50%	2.4	4.7	4.7	0.5	
607	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Health	Retro	23903	82%	19579	2.537	2.252	15	\$4,230.00	100%	50%	4	100%	25%	75%	51%	2.5	5.0	4.9	0.5	
608	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Health	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	75%	46%	1.4	2.7	2.9	0.5	
609	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Health	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	2	85%	20%	75%	56%	0.0	0.0	0.0	0.0		
610	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Health	Retro	827	27%	226	0.000	0.000	10	\$187.50	100%	50%	3	100%	35%	75%	34%	1.5	0.6	3.8	0.2	
611	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Health	Retro	0	0%	0	0.000	0.000	10	\$0.00	100%	0%	4	100%	35%	75%	56%	#DIV/0!	0.0	0.0	0.0	
612	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Health	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	75%	53%	4.6	9.1	8.5	0.5	
613	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Health	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	75%	46%	1.2	2.4	2.5	0.5	
614	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Health	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	75%	25%	0.6	1.1	1.5	0.4	
615	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Health	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	75%	54%	5.9	11.8	10.6	0.6	
616	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Lodging	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	75%	54%	2.9	5.7	5.3	0.5	
617	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Lodging	ROB	1583	21%	329	0.038	0.042	13	\$127.00	100%	50%	2	100%	20%	75%	46%	1.3	2.5	2.7	0.5	
618	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Lodging	Retro	103919	35%	36372	4.205	4.612	10	\$1,150.00	100%	50%	3	100%	50%	75%	56%	12.8	25.6	22.7	0.6	
619	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Lodging	Retro	103919	2%	1970	0.228	0.250	13	\$244.00	100%	50%	4	100%	5%	75%	53%	4.0	7.9	7.5	0.5	
620	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Lodging	Retro	1480	50%	740	0.086	0.094	15	\$49.50	100%	50%	5	5%	20%	75%	55%	8.1	16.2	14.8	0.5	
621	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Lodging	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	75%	51%	1.9	3.8	3.8	0.5	
622	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Lodging	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	75%	50%	1.0	2.1	2.3	0.5	
623	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Lodging	ROB	17380	13%	2211	0.454	0.141	12	\$2,162.00	100%	50%	1	14%	17%	75%	31%	0.5	1.0	1.3	0.4	
624	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Lodging	ROB	9273	15%	1349	0.416	0.129	12	\$1,682.00	100%	50%	2	18%	53%	75%	28%	0.5	0.9	1.1	0.4	
625	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Lodging	ROB	27611	50%	13869	4.275	1.326	12	\$3,824.00	100%	50%	2	18%	53%	75%	49%	2.1	4.1	3.4	0.6	
626	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Lodging	ROB	18182	14%	2573	0.396	0.123	12	\$2,126.00	100%	50%	3	27%	24%	75%	34%	0.5	1.0	1.5	0.4	
627	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Lodging	ROB	19542	67%	13154	3.337	1.035	12	\$2,490.00	100%	50%	4	6%	45%	75%	51%	2.7	5.5	4.8	0.6	
628	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Lodging	ROB	10950	85%	9340	1.535	0.476	12	\$1,891.00	100%	50%	5	3%	16%	75%	51%	2.2	4.4	4.5	0.5	
629	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Lodging	ROB	4380	79%	3438	0.698	0.216	12	\$1,497.00	100%	50%	5	3%	16%	75%	45%	1.1	2.2	2.4	0.5	
630	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Lodging	ROB	56463	36%	20545	1.450	3.976	16	\$255.00	100%	50%	6	26%	61%	75%	56%	47.2	94.4	81.3	0.6	
631	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Lodging	ROB	47891	29%	13861	0.978	2.682	16	\$1,375.00	100%	50%	6	26%	61%	75%	54%	5.9	11.8	10.6	0.6	
632	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	623	14%	88	0.034	0.002	15	\$153.28	100%	50%	1	14%	10%	75%	21%	0.4	0.8	1.0	0.4	
633	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	623	19%	118	0.045	0.003	15	\$214.59	100%	50%	1	14%	10%	75%	21%	0.4	0.7	1.0	0.4	
634	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	623	30%	190	0.073	0.004	15	\$398.52	100%	50%	1	14%	10%	75%	20%	0.3	0.6	1.0	0.3	
635	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Lodging	ROB	699	9%	64	0.024	0.001	15	\$71.00	100%	50%	2	14%	10%	75%	29%	0.6	1.2	1.4	0.4	
636	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Lodging	ROB	699	13%	93	0.036	0.002	15	\$109.23												

C&I Measure Summary: North Dakota

MDU_North Dakota																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
647	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Lodging	ROB	333	23%	76	0.029	0.002	23	\$126.00	100%	50%	10	5%	10%	75%	22%	0.5	1.0	1.3	0.4	
648	Commercial	Cooling	Window Film	Biz-Custom	Lodging	Retro	6000	4%	264	0.101	0.006	10	\$153.81	100%	50%	11	100%	25%	75%	41%	0.5	1.7	0.2	0.5	
649	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Lodging	Retro	6000	6%	360	0.138	0.008	25	\$700.00	100%	50%	11	100%	2%	75%	20%	0.5	0.9	1.2	0.4	
650	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Lodging	Retro	699	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	75%	56%	#DIV/0!	0.0	0.0	0.0	
651	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	4920	5%	267	0.035	0.057	15	\$135.00	100%	50%	1	0%	10%	75%	44%	1.2	2.5	2.4	0.5	
652	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	4920	11%	541	0.070	0.116	15	\$445.76	100%	50%	1	0%	10%	75%	34%	0.8	1.5	1.7	0.5	
653	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	4920	15%	729	0.094	0.157	15	\$520.06	100%	50%	1	0%	10%	75%	37%	0.9	1.7	1.8	0.5	
654	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5512	6%	318	0.041	0.068	15	\$100.00	100%	50%	2	9%	10%	75%	48%	2.0	3.9	3.5	0.6	
655	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5512	11%	597	0.077	0.128	15	\$171.08	100%	50%	2	9%	10%	75%	49%	2.2	4.3	3.8	0.6	
656	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5689	6%	343	0.044	0.074	15	\$100.00	100%	50%	3	9%	10%	75%	49%	2.1	4.3	3.8	0.6	
657	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5689	11%	638	0.083	0.137	15	\$182.26	100%	50%	3	9%	10%	75%	49%	2.2	4.4	3.9	0.6	
658	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5901	6%	369	0.048	0.079	15	\$100.00	100%	50%	4	9%	10%	75%	49%	2.3	4.6	4.0	0.6	
659	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5901	12%	686	0.089	0.148	15	\$201.80	100%	50%	4	9%	10%	75%	49%	2.1	4.2	3.8	0.6	
660	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Lodging	ROB	3620	3%	109	0.014	0.023	25	\$108.00	100%	50%	5	15%	20%	75%	31%	0.8	1.7	1.8	0.5	
661	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Lodging	ROB	3620	5%	165	0.021	0.036	25	\$108.00	100%	50%	5	15%	20%	75%	39%	1.3	2.5	2.5	0.5	
662	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Lodging	ROB	5967	4%	229	0.030	0.049	8	\$84.00	100%	50%	6	15%	20%	75%	47%	1.1	2.1	2.1	0.5	
663	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Lodging	ROB	1132	64%	725	0.051	0.140	10	\$784.00	100%	50%	1	100%	29%	70%	26%	0.4	0.8	1.1	0.3	
664	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Lodging	Retro	1132	2%	23	0.002	0.004	20	\$60.00	100%	50%	2	100%	80%	70%	14%	0.3	0.5	0.9	0.3	
665	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Lodging	ROB	3303	32%	1041	0.073	0.201	5	\$92.90	100%	50%	3	20%	85%	70%	50%	2.7	5.3	4.8	0.6	
666	Commercial	HotWater	Faucet Aerator	Biz-Custom	Lodging	Retro	647	22%	142	0.010	0.028	10	\$6.70	100%	50%	4	20%	85%	70%	51%	8.9	17.9	15.4	0.6	
667	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Lodging	ROB	2239	29%	660	0.047	0.128	11	\$190.00	100%	50%	5	25%	33%	70%	45%	1.6	3.1	3.1	0.5	
668	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Lodging	Retro	856	66%	567	0.000	0.081	12	\$248.00	100%	50%	1	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
669	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Lodging	Retro	856	66%	567	0.000	0.081	12	\$248.00	100%	50%	2	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
670	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Lodging	Retro	1589	60%	959	0.000	0.137	12	\$756.00	100%	50%	3	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
671	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Lodging	Retro	1742	66%	1154	0.000	0.164	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.1	2.1	2.6	0.4	
672	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Lodging	Retro	3235	60%	1953	0.000	0.278	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.2	1.7	0.3	
673	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Lodging	Retro	1589	60%	959	0.000	0.137	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
674	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Lodging	Retro	356	68%	241	0.023	0.027	8	\$27.00	100%	50%	1	53%	43%	71%	60%	2.9	5.7	5.7	0.5	
675	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Lodging	Retro	256	74%	189	0.018	0.021	8	\$59.00	100%	50%	1	53%	43%	71%	55%	1.0	2.1	2.4	0.4	
676	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Lodging	Retro	229	45%	103	0.010	0.012	8	\$188	100%	50%	2	46%	43%	71%	64%	17.6	35.1	32.4	0.5	
677	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Lodging	Retro	519	50%	260	0.025	0.029	8	\$70.00	100%	50%	2	46%	43%	71%	56%	1.2	2.4	2.7	0.4	
678	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Lodging	Retro	1029	61%	626	0.060	0.070	8	\$44.00	100%	50%	3	1%	43%	71%	62%	4.6	9.1	8.8	0.5	
679	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Lodging	Retro	4832	68%	3288	0.317	0.369	8	\$330.00	100%	50%	4	0%	43%	71%	61%	3.2	6.4	6.3	0.5	
680	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Lodging	Retro	191	100%	191	0.018	0.021	11	\$12.00	100%	50%	5	46%	0%	71%	62%	6.6	13.1	12.6	0.5	
681	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Lodging	Retro	1117	30%	335	0.032	0.038	10	\$57.50	100%	50%	6	47%	11%	71%	58%	2.2	4.5	4.6	0.5	
682	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Lodging	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	47%	11%	71%	55%	1.7	3.5	3.7	0.5	
683	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Lodging	Retro	872	30%	262	0.025	0.029	15	\$154.42	100%	50%	6	47%	11%	71%	46%	0.9	1.7	2.1	0.4	
684	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Lodging	Retro	67	43%	29	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	71%	29%	0.2	0.4	0.8	0.2	
685	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Lodging	Retro	385	61%	237	0.027	0.030	5	\$230.00	100%	50%	1	5%	30%	75%	32%	0.2	0.5	0.9	0.3	
686	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Lodging	Retro	9932	50%	4966	0.574	0.630	20	\$1586.00	100%	50%	2	31%	22%	75%	48%	2.0	4.1	4.1	0.5	
687	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Lodging	Retro	262	83%	217	0.025	0.028	10	\$483.00	100%	50%	3	1%	10%	75%	19%	0.2	0.4	0.8	0.2	
688	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Lodging	Retro	2984	25%	746	0.086	0.095	10	\$20,309.70	100%	50%	4	2%	10%	75%	14%	1.3	0.0	3.2	0.0	
689	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Lodging	ROB	3096	3%	85	0.010	0.011	15	\$59.00	100%	50%	5	0%	70%	75%	38%	0.8	1.6	1.9	0.4	
690	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Lodging	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	38%	10%	75%	17%	0.5	0.9	0.8	0.6	
691	Commercial	Motors	Cogged V-Belt	Biz-Custom	Lodging	Retro	29207	3%	905	0.117	0.100	15	\$383.81	100%	50%	1	50%	10%	75%	46%	1.3	2.5	2.8	0.5	
692	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Lodging	Retro	3805	34%	1290	0.166	0.143	15	\$168.00	100%	50%	2	100%	10%	75%	53%	4.1	8.2	7.9	0.5	
693	Commercial	Motors	Power Drive Systems	Biz-Custom	Lodging	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	75%	53%	4.1	8.2	7.9	0.5	
694	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Lodging	Retro	56602	31%	17320	2.234	1.916	15	\$527.50	100%	50%	2	100%	1%	75%	56%	17.6	35.3	31.9	0.6	
695	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Lodging	Retro	551	26%	110	0.013	0.014	6	\$0.00	100%	50%	1	9%	90%	75%	56%	#DIV/0!	0.0	0.0	0.0	
696	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Lodging	Retro	1398	10%	140	0.000	0.160	5	\$40.00	100%	50%	2	53%	20%	75%	49%	2.0	3.9	1.9	1.1	
697	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Lodging	Retro	1126	15%	169	0.000	0.121	8	\$70.00	100%	50%	2	53%	20%	75%	46%	1.4	2.9	1.9	0.8	
698	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Lodging	ROB	1621	23%	368	0.042	0.047	8	\$118.00	100%	50%	3	8%	25%	75%	48%	1.1	2.1	2.3	0.5	
699	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Lodging	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	8%	25%	75%	46%	0.8	1.7	2.0	0.4	
700	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Lodging	Retro	86783	18%	15778	1.824	2.001	15	\$480.00	100%	50%	3	8%	25%	75%	56%	17.8	35.6	32.0	0.6	
701	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Lodging	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	8%	25%	75%	48%	1.9	3.8	4.0	0.5	
702	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Lodging	Retro	764	47%	358	0.041	0.045	15	\$82.00	100%	50%	4	8%	25%	75%	50%	2.4	4.7	4.7	0.5	
703	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Lodging	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	0%	10%	75%	46%	1.4	2.7	2.9	0.5	
704	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Lodging	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	8%	50%	61%	45%	#DIV/0!	0.0	0.0	0.0	
705	Commercial	Refrigeration	Bare Suction Line	Biz-Custom																					

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
724	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Lodging	ROB	6993	10%	721	0.099	0.081	10	\$222.00	100%	50%	19	9%	44%	61%	37%	1.3	2.6	2.8	0.5
725	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Lodging	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	5%	30%	61%	10%	0.2	0.3	0.8	0.2
726	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Lodging	Retro	115	74%	84	0.012	0.010	9	\$11.00	100%	50%	21	8%	35%	61%	42%	2.9	5.8	5.4	0.5
727	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Lodging	Retro	21990	63%	13744	0.000	0.000	15	\$147.41	100%	50%	1	35%	25%	75%	56%	34.7	66.2	93.1	0.4
728	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Lodging	Retro	19919	82%	16287	2.120	2.070	15	\$4,130.00	100%	50%	2	100%	25%	75%	50%	2.2	4.4	4.3	0.5
729	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Lodging	Retro	21909	83%	18277	2.379	2.323	15	\$4,190.00	100%	50%	3	100%	25%	75%	50%	2.4	4.8	4.7	0.5
730	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Lodging	Retro	23903	82%	19579	2.548	2.489	15	\$4,230.00	100%	50%	4	100%	25%	75%	51%	2.6	5.1	4.9	0.5
731	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Lodging	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	15%	20%	75%	46%	1.4	2.8	2.9	0.5
732	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Lodging	Retro	5999	19%	1157	0.173	0.133	5	\$260.00	100%	50%	2	0%	20%	75%	50%	1.0	2.1	2.2	0.5
733	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Lodging	Retro	733	36%	261	0.000	0.000	10	\$187.50	100%	50%	3	100%	25%	75%	37%	0.9	0.7	2.6	0.2
734	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Lodging	Retro	0	0%	0	0.000	0.000	10	\$0.00	100%	0%	4	100%	25%	75%	56%	#DIV/0!	0.0	0.0	0.0
735	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Lodging	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	75%	53%	4.6	9.3	8.5	0.5
736	Commercial	WholeBldg	WholeBlg - Com RET	Biz-NC/Retrofit	Lodging	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	75%	46%	1.2	2.4	2.5	0.5
737	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Lodging	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	75%	25%	0.6	1.1	1.5	0.4
738	Commercial	WholeBldg_NC	WholeBlg - Com NC	Biz-NC/Retrofit	Lodging	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	75%	54%	6.0	11.9	10.6	0.6
739	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Retail	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	75%	54%	2.8	5.5	5.3	0.5
740	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	ROB	ROB	1583	21%	329	0.036	0.037	13	\$127.00	100%	50%	2	100%	20%	75%	46%	1.2	2.5	2.7	0.5
741	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Retail	Retro	103919	35%	36372	3.988	4.094	10	\$1,150.00	100%	50%	3	100%	50%	75%	56%	12.4	24.8	22.7	0.5
742	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Retail	Retro	103919	2%	1970	0.216	0.222	13	\$244.00	100%	50%	4	100%	5%	75%	53%	3.8	7.7	7.5	0.5
743	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Retail	Retro	1480	50%	740	0.081	0.083	15	\$49.50	100%	50%	5	5%	20%	75%	55%	7.8	15.7	14.8	0.5
744	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Retail	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	75%	51%	1.8	3.7	3.8	0.5
745	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Retail	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	75%	50%	1.0	2.0	2.3	0.4
746	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Retail	ROB	11904	13%	1514	0.454	0.198	12	\$2,162.00	100%	50%	1	14%	17%	75%	25%	0.4	0.8	1.1	0.4
747	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Retail	ROB	6351	15%	924	0.416	0.181	12	\$1,682.00	100%	50%	2	18%	53%	75%	21%	0.4	0.8	0.9	0.4
748	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Retail	ROB	18912	50%	9499	4.275	1.863	12	\$3,824.00	100%	50%	2	18%	53%	75%	46%	1.8	3.6	2.5	0.7
749	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Retail	ROB	12454	14%	1762	0.396	0.173	12	\$2,126.00	100%	50%	3	27%	24%	75%	28%	0.4	0.9	1.2	0.4
750	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Retail	ROB	13385	67%	9010	3.337	1.454	12	\$2,490.00	100%	50%	4	6%	45%	75%	49%	2.4	4.7	3.4	0.7
751	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Retail	ROB	7500	85%	6398	1.535	0.669	12	\$1,891.00	100%	50%	5	3%	16%	75%	49%	1.8	3.6	3.2	0.6
752	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Retail	ROB	3000	79%	2355	0.698	0.304	12	\$1,497.00	100%	50%	5	3%	16%	75%	40%	0.9	1.8	1.8	0.5
753	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Retail	ROB	41082	34%	14133	2.672	2.193	16	\$255.00	100%	50%	6	26%	61%	75%	56%	36.2	72.4	56.1	0.6
754	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Retail	ROB	35485	26%	9319	1.762	1.446	16	\$1,375.00	100%	50%	6	26%	61%	75%	52%	4.4	8.9	7.3	0.6
755	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Retail	ROB	347	14%	49	0.026	0.000	15	\$153.28	100%	50%	1	15%	10%	75%	15%	0.2	0.5	0.8	0.3
756	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Retail	ROB	347	19%	66	0.035	0.000	15	\$214.59	100%	50%	1	15%	10%	75%	15%	0.2	0.5	0.8	0.3
757	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Retail	ROB	347	30%	106	0.057	0.001	15	\$398.52	100%	50%	1	15%	10%	75%	14%	0.2	0.4	0.8	0.3
758	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Retail	ROB	390	9%	35	0.019	0.000	15	\$71.00	100%	50%	2	15%	10%	75%	20%	0.4	0.8	1.0	0.4
759	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Retail	ROB	390	13%	52	0.028	0.000	15	\$109.23	100%	50%	2	15%	10%	75%	20%	0.4	0.7	1.0	0.4
760	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Retail	ROB	390	24%	92	0.049	0.001	15	\$218.46	100%	50%	2	15%	10%	75%	18%	0.3	0.6	0.9	0.4
761	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Retail	Retro	422	7%	30	0.016	0.000	3	\$5.33	100%	50%	3	29%	50%	75%	51%	1.1	2.3	1.8	0.6
762	Commercial	Cooling	Air Side Economizer	Biz-Custom	Retail	Retro	350	20%	70	0.037	0.001	15	\$153.28	100%	50%	4	29%	25%	75%	19%	0.3	0.7	0.9	0.4
763	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Retail	Retro	366	20%	73	0.039	0.001	15	\$197.50	100%	50%	5	29%	20%	75%	17%	0.3	0.6	0.9	0.3
764	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	362	13%	45	0.024	0.000	15	\$115.00	100%	50%	6	24%	10%	75%	18%	0.3	0.6	0.9	0.3
765	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	362	22%	80	0.043	0.001	15	\$514.00	100%	50%	6	24%	10%	75%	14%	0.1	0.2	0.6	0.2
766	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	362	33%	121	0.065	0.001	15	\$630.50	100%	50%	6	24%	10%	75%	14%	0.1	0.3	0.7	0.2
767	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Retail	ROB	1448	14%	205	0.110	0.001	11	\$175.00	100%	50%	7	24%	20%	75%	33%	0.7	1.4	1.4	0.5
768	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Retail	ROB	467	15%	68	0.036	0.000	8	\$84.00	100%	50%	8	18%	20%	75%	28%	0.4	0.8	1.0	0.4
769	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Retail	ROB	370	9%	33	0.018	0.000	23	\$126.00	100%	50%	9	26%	10%	75%	14%	0.3	0.5	0.8	0.3
770	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Retail	ROB	186	23%	42	0.023	0.000	23	\$126.00	100%	50%	10	3%	10%	75%	16%	0.3	0.6	0.9	0.3
771	Commercial	Cooling	Window Film	Biz-Custom	Retail	Retro	6000	4%	264	0.141	0.002	10	\$153.81	100%	50%	11	100%	25%	75%	41%	0.5	2.0	0.2	0.6
772	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Retail	Retro	6000	6%	360	0.193	0.003	25	\$700.00	100%	50%	11	100%	2%	75%	20%	0.5	1.0	1.2	0.4
773	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Retail	Retro	390	0%	0	0.159	0.002	15	\$0.00	100%	0%	12	100%	2%	75%	56%	#DIV/0!	0.0	0.0	0.0
774	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	3817	5%	195	0.035	0.042	15	\$135.00	100%	50%	1	28%	10%	75%	38%	1.0	1.9	1.9	0.5
775	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	3817	11%	401	0.072	0.086	15	\$445.76	100%	50%	1	28%	10%	75%	30%	0.6	1.2	1.4	0.4
776	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	3817	14%	535	0.096	0.115	15	\$520.06	100%	50%	1	28%	10%	75%	32%	0.7	1.4	1.5	0.5
777	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	4295	6%	245	0.044	0.053	15	\$100.00	100%	50%	2	12%	10%	75%	46%	1.6	3.2	2.8	0.6
778	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	4295	11%	462	0.082	0.099	15	\$171.08	100%	50%	2	12%	10%	75%	47%	1.8	3.5	3.1	0.6
779	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	4431	6%	263	0.047	0.056	15	\$100.00	100%	50%	3	12%	10%	75%	47%	1.7	3.5	3.0	0.6
780	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	4431	11%	492	0.088	0.106	15	\$182.26	100%	50%	3	12%	10%	75%	47%	1.8	3.5	3.1	0.6
781	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	4588	6%	282	0.050	0.061	15	\$100.00	100%	50%	4	12%	10%	75%	47%	1.9	3.7	3.	

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
786	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Retail	ROB	1755	64%	1124	0.212	0.174	10	\$784.00	100%	50%	1	100%	23%	70%	34%	0.7	1.3	1.5	0.4	
787	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Retail	Retro	1755	2%	35	0.007	0.005	20	\$60.00	100%	50%	2	100%	80%	70%	18%	0.4	0.9	1.2	0.4	
788	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Retail	ROB	2262	32%	713	0.135	0.111	5	\$92.90	100%	50%	3	20%	85%	70%	49%	2.0	4.1	3.5	0.6	
789	Commercial	HotWater	Faucet Aerator	Biz-Custom	Retail	Retro	647	22%	142	0.027	0.022	10	\$6.70	100%	50%	4	20%	85%	70%	51%	10.0	20.0	15.4	0.6	
790	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Retail	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	70%	45%	1.8	3.5	3.1	0.6	
791	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Retail	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	1	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
792	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Retail	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	2	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
793	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Retail	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	3	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
794	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Retail	Retro	1742	66%	1154	0.000	0.157	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.0	2.1	2.6	0.4	
795	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Retail	Retro	3235	60%	1953	0.000	0.266	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.2	1.7	0.3	
796	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Retail	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
797	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Retail	Retro	238	68%	161	0.018	0.016	12	\$27.00	100%	50%	1	22%	43%	71%	58%	2.6	5.3	5.3	0.5	
798	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Retail	Retro	171	74%	126	0.014	0.013	12	\$59.00	100%	50%	1	22%	43%	71%	51%	0.9	1.9	2.2	0.4	
799	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Retail	Retro	153	45%	68	0.008	0.007	12	\$1.88	100%	50%	2	76%	43%	71%	63%	16.2	32.4	30.0	0.5	
800	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Retail	Retro	346	50%	173	0.020	0.018	12	\$70.00	100%	50%	2	76%	43%	71%	53%	1.1	2.2	2.5	0.4	
801	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Retail	Retro	687	61%	417	0.048	0.042	12	\$44.00	100%	50%	3	1%	43%	71%	60%	4.2	8.4	8.2	0.5	
802	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Retail	Retro	3225	68%	2194	0.251	0.222	12	\$330.00	100%	50%	4	1%	43%	71%	59%	3.0	5.9	5.9	0.5	
803	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Retail	Retro	128	100%	128	0.015	0.013	11	\$12.00	100%	50%	5	76%	0%	71%	61%	4.4	8.9	8.6	0.5	
804	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Retail	Retro	746	30%	224	0.026	0.023	10	\$57.50	100%	50%	6	78%	11%	71%	56%	1.5	3.0	3.2	0.5	
805	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Retail	Retro	3	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	78%	11%	71%	52%	1.2	2.4	2.7	0.4	
806	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Retail	Retro	582	30%	175	0.020	0.018	15	\$103.05	100%	50%	6	78%	11%	71%	46%	0.9	1.8	2.1	0.4	
807	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Retail	Retro	67	43%	29	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	71%	29%	0.2	0.4	0.8	0.2	
808	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Retail	Retro	385	61%	237	0.026	0.027	5	\$230.00	100%	50%	1	23%	30%	75%	32%	0.2	0.5	0.9	0.3	
809	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Retail	Retro	9932	50%	4966	0.545	0.559	20	\$1,586.00	100%	50%	2	0%	22%	75%	48%	2.0	3.9	4.1	0.5	
810	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Retail	Retro	1909	83%	1585	0.174	0.178	10	\$483.00	100%	50%	3	1%	10%	75%	48%	1.3	2.6	2.8	0.5	
811	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Retail	Retro	2984	25%	746	0.082	0.084	10	\$20,309.70	100%	50%	4	0%	10%	75%	14%	1.3	0.0	3.2	0.0	
812	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Retail	ROB	3096	3%	85	0.009	0.010	15	\$59.00	100%	50%	5	3%	70%	75%	38%	0.8	1.5	1.9	0.4	
813	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Retail	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	42%	10%	75%	17%	0.4	0.9	0.8	0.6	
814	Commercial	Motors	Cogged V-Belt	Biz-Custom	Retail	Retro	14670	3%	455	0.076	0.044	15	\$383.81	100%	50%	1	50%	10%	75%	33%	0.7	1.3	1.6	0.4	
815	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Retail	Retro	3805	34%	1290	0.216	0.125	15	\$168.00	100%	50%	2	100%	10%	75%	53%	4.3	8.5	7.9	0.5	
816	Commercial	Motors	Power Drive Systems	Biz-Custom	Retail	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	75%	53%	4.3	8.5	7.9	0.5	
817	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Retail	Retro	28430	31%	8700	1.460	0.845	15	\$527.50	100%	50%	2	100%	1%	75%	55%	9.2	18.3	16.3	0.6	
818	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Retail	Retro	551	26%	110	0.012	0.012	6	\$0.00	100%	50%	1	2%	90%	75%	56%	#DIV/0!	0.0	0.0	0.0	
819	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Retail	Retro	1398	10%	140	0.000	0.142	5	\$40.00	100%	50%	2	14%	20%	75%	49%	1.8	3.6	1.9	1.0	
820	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Retail	Retro	1126	15%	169	0.000	0.108	8	\$70.00	100%	50%	2	14%	20%	75%	46%	1.3	2.7	1.9	0.7	
821	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Retail	ROB	1621	23%	368	0.042	0.041	8	\$118.00	100%	50%	3	50%	25%	75%	48%	1.0	2.1	2.3	0.4	
822	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Retail	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	50%	25%	75%	46%	0.8	1.6	2.0	0.4	
823	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Retail	Retro	86783	18%	15778	1.730	1.776	15	\$480.00	100%	50%	3	50%	25%	75%	56%	17.2	34.5	32.0	0.5	
824	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Retail	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	50%	25%	75%	48%	1.9	3.8	4.0	0.5	
825	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Retail	Retro	764	47%	358	0.039	0.040	15	\$82.00	100%	50%	4	50%	25%	75%	50%	2.3	4.6	4.7	0.5	
826	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Retail	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	4%	10%	75%	46%	1.3	2.6	2.9	0.5	
827	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Retail	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	7%	50%	61%	45%	#DIV/0!	0.0	0.0	0.0	
828	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Retail	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	61%	40%	2.9	5.7	5.5	0.5	
829	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Retail	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	4%	25%	61%	16%	0.4	0.7	1.1	0.3	
830	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Retail	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	61%	19%	0.4	0.8	1.2	0.3	
831	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Retail	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	15%	25%	61%	11%	0.2	0.4	0.8	0.2	
832	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Retail	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	4%	80%	61%	40%	2.8	5.7	5.5	0.5	
833	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Retail	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	4%	25%	61%	40%	2.5	5.0	4.9	0.5	
834	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Retail	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	6%	25%	61%	26%	0.7	1.4	1.7	0.4	
835	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Retail	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	17%	25%	61%	33%	1.0	2.0	2.2	0.4	
836	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Retail	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	61%	36%	1.4	2.7	2.8	0.5	
837	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Retail	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	3%	80%	61%	40%	2.8	5.7	5.5	0.5	
838	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Retail	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	3%	2%	61%	30%	0.7	1.3	1.7	0.4	
839	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Retail	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	16%	54%	61%	14%	0.2	0.5	0.9	0.3	
840	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Retail	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	16%	54%	61%	9%	0.1	0.2	0.7	0.2	
841	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Retail	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	6%	75%	61%	39%	1.9	3.9	3.9	0.5	
842	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Retail	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	6%	25%	61%	43%	5.5	10.9	10.0	0.5	
843	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Retail	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	5%	54%	61%	19%	0.4	0.7	1.1	0.3	
844	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Retail	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	5%	54%	61%	9%	0.1	0.2	0.7	0.1	
845	Commercial	Refriger																							

C&I Measure Summary: North Dakota

MDU_North Dakota																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
871	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Office	ROB	18912	50%	9499	4.275	1.055	12	\$3,824.00	100%	50%	2	18%	53%	75%	46%	1.7	3.3	2.5	0.7	
872	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Office	ROB	12454	14%	1762	0.396	0.098	12	\$2,126.00	100%	50%	3	27%	24%	75%	28%	0.4	0.8	1.2	0.3	
873	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Office	ROB	13385	67%	9010	3.337	0.824	12	\$2,490.00	100%	50%	4	6%	45%	75%	49%	2.2	4.4	3.4	0.6	
874	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Office	ROB	7500	85%	6398	1.535	0.379	12	\$1,891.00	100%	50%	5	3%	16%	75%	49%	1.7	3.4	3.2	0.5	
875	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Office	ROB	3000	79%	2355	0.698	0.172	12	\$1,497.00	100%	50%	5	3%	16%	75%	40%	0.9	1.7	1.8	0.5	
876	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Office	ROB	41082	34%	14133	2.741	1.230	16	\$255.00	100%	50%	6	26%	61%	75%	56%	33.0	65.9	56.1	0.6	
877	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Office	ROB	35485	26%	9319	1.808	0.811	16	\$1,375.00	100%	50%	6	26%	61%	75%	52%	4.0	8.1	7.3	0.6	
878	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Office	ROB	971	14%	137	0.090	0.000	15	\$153.28	100%	50%	1	26%	10%	75%	29%	0.8	1.5	1.4	0.6	
879	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Office	ROB	971	19%	183	0.121	0.000	15	\$214.59	100%	50%	1	26%	10%	75%	29%	0.7	1.4	1.3	0.5	
880	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Office	ROB	971	30%	296	0.195	0.001	15	\$398.52	100%	50%	1	26%	10%	75%	26%	0.6	1.3	1.2	0.5	
881	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Office	ROB	1091	9%	99	0.065	0.000	15	\$71.00	100%	50%	2	26%	10%	75%	37%	1.2	2.4	1.8	0.6	
882	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Office	ROB	1091	13%	145	0.096	0.000	15	\$109.23	100%	50%	2	26%	10%	75%	36%	1.1	2.2	1.8	0.6	
883	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Office	ROB	1091	24%	257	0.169	0.001	15	\$218.46	100%	50%	2	26%	10%	75%	33%	1.0	2.0	1.6	0.6	
884	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Office	Retro	1181	7%	83	0.054	0.000	3	\$5.33	100%	50%	3	51%	50%	75%	55%	3.6	7.2	4.3	0.8	
885	Commercial	Cooling	Air Side Economizer	Biz-Custom	Office	Retro	978	20%	196	0.129	0.000	15	\$153.28	100%	50%	4	51%	25%	75%	35%	1.1	2.2	1.7	0.6	
886	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Office	Retro	1025	20%	205	0.135	0.000	15	\$197.50	100%	50%	5	51%	20%	75%	32%	0.9	1.7	1.5	0.6	
887	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	1013	13%	127	0.083	0.000	15	\$115.00	100%	50%	6	7%	10%	75%	32%	0.9	1.9	1.6	0.6	
888	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	1013	22%	225	0.148	0.001	15	\$514.00	100%	50%	6	7%	10%	75%	19%	0.4	0.7	0.9	0.4	
889	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	1013	33%	338	0.222	0.001	15	\$630.50	100%	50%	6	7%	10%	75%	21%	0.5	0.9	1.0	0.4	
890	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Office	ROB	4051	14%	574	0.378	0.001	11	\$175.00	100%	50%	7	7%	20%	75%	48%	2.2	4.5	3.0	0.8	
891	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Office	ROB	1307	15%	190	0.125	0.000	8	\$84.00	100%	50%	8	7%	20%	75%	45%	1.2	2.4	1.8	0.7	
892	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Office	ROB	1035	9%	93	0.061	0.000	23	\$126.00	100%	50%	9	32%	10%	75%	26%	0.8	1.6	1.4	0.5	
893	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Office	ROB	520	23%	118	0.078	0.000	23	\$126.00	100%	50%	10	4%	10%	75%	30%	1.0	2.0	1.7	0.6	
894	Commercial	Cooling	Window Film	Biz-Custom	Office	Retro	6000	4%	264	0.174	0.001	10	\$153.81	100%	50%	11	100%	25%	75%	41%	0.6	2.2	0.2	0.6	
895	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Office	Retro	6000	6%	360	0.237	0.001	25	\$700.00	100%	50%	11	100%	2%	75%	20%	0.6	1.1	1.2	0.5	
896	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Office	Retro	1091	0%	0	0.589	0.002	15	\$0.00	100%	0%	12	100%	2%	75%	56%	#DIV/0!	0.0	0.0	0.0	
897	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	7873	5%	425	0.093	0.091	15	\$135.00	100%	50%	1	6%	10%	75%	48%	2.2	4.3	3.5	0.6	
898	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	7873	11%	862	0.189	0.184	15	\$445.76	100%	50%	1	6%	10%	75%	43%	1.3	2.7	2.4	0.6	
899	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	7873	15%	1161	0.255	0.248	15	\$520.06	100%	50%	1	6%	10%	75%	45%	1.5	3.1	2.6	0.6	
900	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	8824	6%	508	0.112	0.109	15	\$100.00	100%	50%	2	17%	10%	75%	51%	3.5	7.0	5.4	0.7	
901	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	8824	11%	955	0.210	0.204	15	\$171.08	100%	50%	2	17%	10%	75%	51%	3.8	7.7	5.8	0.7	
902	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	9107	6%	548	0.120	0.117	15	\$100.00	100%	50%	3	16%	10%	75%	51%	3.8	7.5	5.7	0.7	
903	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	9107	11%	1021	0.224	0.218	15	\$182.26	100%	50%	3	16%	10%	75%	52%	3.9	7.7	5.9	0.7	
904	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	9445	6%	590	0.130	0.126	15	\$100.00	100%	50%	4	16%	10%	75%	52%	4.1	8.1	6.2	0.7	
905	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	9445	12%	1096	0.241	0.235	15	\$201.80	100%	50%	4	16%	10%	75%	51%	3.7	7.5	5.7	0.7	
906	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Office	ROB	5789	3%	174	0.038	0.037	25	\$108.00	100%	50%	5	4%	20%	75%	40%	1.5	3.0	2.6	0.6	
907	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Office	ROB	5789	5%	262	0.057	0.056	25	\$108.00	100%	50%	5	4%	20%	75%	46%	2.2	4.4	3.7	0.6	
908	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Office	ROB	9551	4%	361	0.079	0.077	8	\$84.00	100%	50%	6	10%	20%	75%	50%	1.9	3.8	3.0	0.6	
909	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Office	ROB	1193	64%	764	0.148	0.066	10	\$784.00	100%	50%	1	100%	13%	70%	27%	0.4	0.8	1.2	0.4	
910	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Office	Retro	1193	2%	24	0.005	0.002	20	\$60.00	100%	50%	2	100%	80%	70%	15%	0.3	0.5	1.0	0.3	
911	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Office	ROB	2262	32%	713	0.138	0.062	5	\$92.90	100%	50%	3	20%	85%	70%	49%	1.9	3.7	3.5	0.5	
912	Commercial	HotWater	Faucet Aerator	Biz-Custom	Office	Retro	443	22%	97	0.019	0.008	10	\$6.70	100%	50%	4	20%	85%	70%	51%	6.2	12.4	10.7	0.6	
913	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Office	ROB	2239	29%	660	0.128	0.057	11	\$190.00	100%	50%	5	25%	33%	70%	45%	1.6	3.2	3.1	0.5	
914	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Office	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	1	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
915	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Office	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	2	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
916	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Office	Retro	1589	60%	959	0.000	0.129	12	\$756.00	100%	50%	3	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
917	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Office	Retro	1742	66%	1154	0.000	0.155	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.0	2.1	2.6	0.4	
918	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Office	Retro	3235	60%	1953	0.000	0.263	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.2	1.7	0.3	
919	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Office	Retro	1589	60%	959	0.000	0.129	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
920	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Office	Retro	179	68%	121	0.020	0.016	15	\$27.00	100%	50%	1	20%	43%	71%	57%	2.6	5.3	4.8	0.5	
921	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Office	Retro	128	74%	95	0.016	0.013	15	\$59.00	100%	50%	1	20%	43%	71%	45%	0.9	1.9	2.0	0.5	
922	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Office	Retro	115	45%	51	0.009	0.007	15	\$1.88	100%	50%	2	79%	43%	71%	63%	16.1	32.2	26.7	0.6	
923	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Office	Retro	260	50%	130	0.022	0.018	15	\$70.00	100%	50%	2	79%	43%	71%	49%	1.1	2.2	2.3	0.5	
924	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Office	Retro	516	61%	314	0.053	0.042	15	\$44.00	100%	50%	3	1%	43%	71%	59%	4.2	8.4	7.3	0.6	
925	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Office	Retro	2423	68%	1649	0.276	0.223	15	\$330.00	100%	50%	4	0%	43%	71%	57%	2.9	5.9	5.3	0.6	
926	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Office	Retro	96	100%	96	0.016	0.013	11	\$12.00	100%	50%	5	79%	0%	71%	60%	3.8	7.6	6.6	0.6	
927	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Office	Retro	560	30%	168	0.028	0.023	10	\$57.50	100%	50%	6	80%	1%	71%	54%	1.3	2.6	2.6	0.5	
928	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Office	Retro	2	49%	1	0.000	0.000	15													

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
937	Commercial	Motors	Cogged V-Belt	Biz-Custom	Office	Retro	9092	3%	282	0.034	0.038	15	\$383.81	100%	50%	1	50%	10%	75%	26%	0.4	0.8	1.2	0.3	
938	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Office	Retro	3805	34%	1290	0.156	0.174	15	\$168.00	100%	50%	2	100%	10%	75%	53%	4.2	8.5	7.9	0.5	
939	Commercial	Motors	Power Drive Systems	Biz-Custom	Office	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	75%	53%	4.2	8.5	7.9	0.5	
940	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Office	Retro	17620	31%	5392	0.653	0.727	15	\$527.50	100%	50%	2	100%	1%	75%	54%	5.6	11.3	10.3	0.5	
941	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Office	Retro	551	26%	110	0.015	0.013	6	\$0.00	100%		1	2%	90%	75%	56%	#DIV/0!	0.0	0.0	0.0	
942	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Office	Retro	1398	10%	140	0.000	0.145	5	\$40.00	100%	50%	2	10%	20%	75%	49%	1.8	3.6	1.9	1.0	
943	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Office	Retro	1126	15%	169	0.000	0.110	8	\$70.00	100%	50%	2	10%	20%	75%	46%	1.4	2.7	1.9	0.7	
944	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Office	ROB	1621	23%	368	0.042	0.042	8	\$118.00	100%	50%	3	54%	25%	75%	48%	1.0	2.1	2.3	0.4	
945	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Office	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	54%	25%	75%	46%	0.9	1.7	2.0	0.4	
946	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Office	Retro	86783	18%	15778	2.095	1.816	15	\$480.00	100%	50%	3	54%	25%	75%	56%	17.9	35.7	32.0	0.6	
947	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Office	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	54%	25%	75%	48%	1.9	3.8	4.0	0.5	
948	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Office	Retro	764	47%	358	0.048	0.041	15	\$82.00	100%	50%	4	54%	25%	75%	50%	2.4	4.7	4.7	0.5	
949	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Office	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	2%	10%	75%	46%	1.4	2.7	2.9	0.5	
950	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Office	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	4%	50%	61%	45%	#DIV/0!	0.0	0.0	0.0	
951	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Office	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	61%	40%	2.9	5.7	5.5	0.5	
952	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Office	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	3%	25%	61%	16%	0.4	0.7	1.1	0.3	
953	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Office	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	61%	19%	0.4	0.8	1.2	0.3	
954	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Office	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	10%	25%	61%	11%	0.2	0.4	0.8	0.2	
955	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Office	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	3%	80%	61%	40%	2.8	5.7	5.5	0.5	
956	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Office	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	3%	25%	61%	40%	2.5	5.0	4.9	0.5	
957	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Office	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	4%	25%	61%	26%	0.7	1.4	1.7	0.4	
958	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Office	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	16%	25%	61%	33%	1.0	2.0	2.2	0.4	
959	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Office	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	61%	36%	1.4	2.7	2.8	0.5	
960	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Office	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	2%	80%	61%	40%	2.8	5.7	5.5	0.5	
961	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Office	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	2%	2%	61%	30%	0.7	1.3	1.7	0.4	
962	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Office	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	16%	54%	61%	14%	0.2	0.5	0.9	0.3	
963	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Office	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	16%	54%	61%	9%	0.1	0.2	0.7	0.2	
964	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Office	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	5%	25%	61%	39%	1.9	3.9	3.9	0.5	
965	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Office	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	5%	25%	61%	43%	5.5	10.9	10.0	0.5	
966	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Office	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	5%	54%	61%	19%	0.4	0.7	1.1	0.3	
967	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Office	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	5%	54%	61%	9%	0.1	0.2	0.7	0.1	
968	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Office	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	82%	25%	61%	11%	0.5	0.9	0.8	0.6	
969	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Office	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	82%	25%	61%	40%	1.0	2.1	2.3	0.5	
970	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Office	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	9%	44%	61%	37%	1.3	2.7	2.8	0.5	
971	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Office	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	9%	30%	61%	10%	0.2	0.3	0.8	0.2	
972	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Office	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	10%	35%	61%	42%	2.9	5.8	5.4	0.5	
973	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Office	Retro	21289	63%	13306	0.000	0.000	15	\$147.41	100%	50%	1	32%	50%	75%	56%	32.5	64.4	87.6	0.4	
974	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Office	Retro	19919	82%	16287	2.828	2.027	15	\$4,130.00	100%	50%	2	100%	25%	75%	50%	2.3	4.6	4.3	0.5	
975	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Office	Retro	21909	83%	18277	3.173	2.275	15	\$4,190.00	100%	50%	3	100%	25%	75%	50%	2.5	5.1	4.7	0.5	
976	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Office	Retro	23903	82%	19579	3.399	2.437	15	\$4,230.00	100%	50%	4	100%	25%	75%	51%	2.7	5.4	4.9	0.5	
977	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Office	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	75%	46%	1.5	3.0	2.9	0.5	
978	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Office	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%		2	0%	20%	75%	56%	0.0	0.0	0.0	0.0	
979	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Office	Retro	1143	16%	185	0.000	0.000	10	\$187.50	100%	50%	3	100%	50%	75%	31%	0.8	0.5	2.4	0.2	
980	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Office	Retro	1372	50%	681	0.202	0.000	10	\$341.21	100%	50%	4	100%	50%	75%	44%	1.0	1.7	2.3	0.5	
981	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Office	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	75%	53%	5.0	9.9	8.5	0.6	
982	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Office	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	75%	46%	1.3	2.6	2.5	0.5	
983	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Office	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	75%	25%	0.6	1.2	1.5	0.4	
984	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Office	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	75%	54%	6.4	12.8	10.6	0.6	
985	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-NC/Retrofit	Warehouse	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	75%	54%	2.9	5.7	5.3	0.5	
986	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Warehouse	ROB	1583	21%	329	0.046	0.035	13	\$127.00	100%	50%	2	100%	20%	75%	46%	1.3	2.6	2.7	0.5	
987	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Warehouse	Retro	103919	35%	36372	5.116	3.893	10	\$1,150.00	100%	50%	3	100%	50%	75%	56%	12.9	25.7	22.7	0.6	
988	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Warehouse	Retro	103919	2%	1970	0.277	0.211	13	\$244.00	100%	50%	4	100%	5%	75%	53%	4.0	8.0	7.5	0.5	
989	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Warehouse	Retro	1480	50%	740	0.104	0.079	15	\$49.50	100%	50%	5	5%	20%	75%	55%	8.1	16.3	14.8	0.5	
990	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Warehouse	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	75%	51%	1.9	3.8	3.8	0.5	
991	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Warehouse	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	75%	50%	1.0	2.1	2.3	0.5	
992	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Warehouse	ROB	11904	13%	1514	0.454	0.198	12	\$2,162.00	100%	50%	1	14%	17%	75%	25%	0.4	0.8	1.1	0.4	
993	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Warehouse	ROB	6351	15%	924	0.416	0.181	12	\$1,682.00	100%	50%	2	18%	53%	75%	21%	0.4	0.8	0.9	0.4	
994	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Warehouse	ROB	18912	50%	9499	4.275	1.863	12	\$3,824.00	100%	50%	2	18%	53%	75%	46%	1.8	3.6	2.5	0.7	
995	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Warehouse	ROB	12454	14%	1762	0.396	0.173	12	\$2,126.00	100%	50%	3	27%	24%	75%	28%	0.4	0.9	1.2	0.4	
996	Commercial	Cooking																							

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
1010	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	150	13%	19	0.012	0.000	15	\$115.00	100%	50%	6	38%	10%	75%	14%	0.1	0.3	0.7	0.2	
1011	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	150	22%	33	0.022	0.000	15	\$514.00	100%	50%	6	38%	10%	75%	14%	0.1	0.1	0.6	0.1	
1012	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	150	33%	50	0.033	0.000	15	\$630.50	100%	50%	6	38%	10%	75%	14%	0.1	0.1	0.6	0.1	
1013	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Warehouse	ROB	600	14%	85	0.057	0.000	11	\$175.00	100%	50%	7	38%	20%	75%	20%	0.3	0.7	0.9	0.4	
1014	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Warehouse	ROB	193	15%	28	0.019	0.000	8	\$84.00	100%	50%	8	0%	20%	75%	16%	0.2	0.4	0.7	0.3	
1015	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Warehouse	ROB	153	9%	14	0.009	0.000	23	\$126.00	100%	50%	9	0%	10%	75%	14%	0.1	0.2	0.6	0.2	
1016	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Warehouse	ROB	77	23%	17	0.012	0.000	23	\$126.00	100%	50%	10	0%	10%	75%	14%	0.1	0.3	0.7	0.2	
1017	Commercial	Cooling	Window Film	Biz-Custom	Warehouse	Retro	6000	4%	264	0.176	0.000	10	\$153.81	100%	50%	11	100%	25%	75%	41%	0.6	2.2	0.2	0.6	
1018	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Warehouse	Retro	6000	6%	360	0.240	0.000	25	\$700.00	100%	50%	11	100%	2%	75%	20%	0.6	1.1	1.2	0.5	
1019	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Warehouse	Retro	161	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	75%	56%	#DIV/0!	0.0	0.0	0.0	
1020	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	3511	5%	165	0.037	0.037	15	\$135.00	100%	50%	1	19%	10%	75%	34%	0.9	1.7	1.7	0.5	
1021	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	3511	10%	345	0.077	0.078	15	\$445.76	100%	50%	1	19%	10%	75%	27%	0.5	1.1	1.2	0.4	
1022	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	3511	13%	453	0.101	0.103	15	\$520.06	100%	50%	1	19%	10%	75%	29%	0.6	1.2	1.3	0.5	
1023	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	3974	6%	223	0.050	0.051	15	\$100.00	100%	50%	2	10%	10%	75%	45%	1.6	3.1	2.6	0.6	
1024	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	3974	11%	422	0.094	0.096	15	\$171.08	100%	50%	2	10%	10%	75%	46%	1.7	3.4	2.9	0.6	
1025	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	4097	6%	238	0.053	0.054	15	\$100.00	100%	50%	3	10%	10%	75%	46%	1.7	3.3	2.8	0.6	
1026	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	4097	11%	448	0.100	0.102	15	\$182.26	100%	50%	3	10%	10%	75%	46%	1.7	3.4	2.9	0.6	
1027	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	4233	6%	254	0.056	0.058	15	\$100.00	100%	50%	4	10%	10%	75%	46%	1.8	3.5	2.9	0.6	
1028	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	4233	11%	477	0.106	0.108	15	\$201.80	100%	50%	4	10%	10%	75%	46%	1.6	3.3	2.8	0.6	
1029	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Warehouse	ROB	2537	3%	71	0.016	0.016	25	\$108.00	100%	50%	5	0%	20%	75%	24%	0.6	1.2	1.4	0.4	
1030	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Warehouse	ROB	2537	3%	84	0.019	0.019	25	\$108.00	100%	50%	5	0%	20%	75%	27%	0.7	1.4	1.5	0.5	
1031	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Warehouse	ROB	4290	2%	95	0.021	0.021	8	\$84.00	100%	50%	6	0%	20%	75%	33%	0.5	1.0	1.2	0.4	
1032	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Warehouse	ROB	526	64%	337	0.064	0.052	10	\$784.00	100%	50%	1	100%	0%	70%	15%	0.2	0.4	0.8	0.3	
1033	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Warehouse	Retro	526	2%	11	0.002	0.002	20	\$60.00	100%	50%	2	100%	80%	70%	12%	0.1	0.3	0.7	0.2	
1034	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Warehouse	ROB	2262	32%	713	0.135	0.111	5	\$92.90	100%	50%	3	20%	85%	70%	49%	2.0	4.1	3.5	0.6	
1035	Commercial	HotWater	Faucet Aerator	Biz-Custom	Warehouse	Retro	443	22%	97	0.018	0.015	10	\$6.70	100%	50%	4	20%	85%	70%	51%	6.8	13.7	10.7	0.6	
1036	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Warehouse	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	70%	45%	1.8	3.5	3.1	0.6	
1037	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Warehouse	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	1	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
1038	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Warehouse	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	2	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
1039	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Warehouse	Retro	1589	60%	959	0.000	0.130	12	\$756.00	100%	50%	3	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
1040	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Warehouse	Retro	1742	66%	1154	0.000	0.157	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.0	2.1	2.6	0.4	
1041	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Warehouse	Retro	3235	60%	1953	0.000	0.265	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.2	1.7	0.3	
1042	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Warehouse	Retro	1589	60%	959	0.000	0.130	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
1043	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Warehouse	Retro	170	68%	115	0.017	0.012	15	\$27.00	100%	50%	1	18%	43%	71%	57%	2.3	4.7	4.6	0.5	
1044	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Warehouse	Retro	122	74%	90	0.013	0.010	15	\$59.00	100%	50%	1	18%	43%	71%	43%	0.8	1.7	2.0	0.4	
1045	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Warehouse	Retro	110	45%	49	0.007	0.005	15	\$1.88	100%	50%	2	78%	43%	71%	63%	14.4	28.7	25.5	0.6	
1046	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Warehouse	Retro	248	50%	124	0.019	0.013	15	\$70.00	100%	50%	2	78%	43%	71%	48%	1.0	2.0	2.2	0.4	
1047	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Warehouse	Retro	492	61%	299	0.045	0.032	15	\$44.00	100%	50%	3	2%	43%	71%	59%	3.7	7.5	7.0	0.5	
1048	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Warehouse	Retro	2310	68%	1571	0.234	0.170	15	\$330.00	100%	50%	4	2%	43%	71%	57%	2.6	5.2	5.1	0.5	
1049	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Warehouse	Retro	91	100%	91	0.014	0.010	11	\$12.00	100%	50%	5	78%	0%	71%	60%	3.4	6.7	6.3	0.5	
1050	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Warehouse	Retro	534	30%	160	0.024	0.017	10	\$57.50	100%	50%	6	16%	11%	71%	54%	1.1	2.3	2.5	0.5	
1051	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Warehouse	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	82%	11%	71%	45%	0.9	1.8	2.1	0.4	
1052	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Warehouse	Retro	417	30%	125	0.019	0.013	15	\$73.81	100%	50%	6	12%	11%	71%	46%	0.9	1.9	2.1	0.4	
1053	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Warehouse	Retro	63	43%	27	0.004	0.003	5	\$32.50	100%	50%	7	1%	85%	71%	28%	0.2	0.4	0.8	0.2	
1054	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Warehouse	Retro	385	61%	237	0.033	0.025	5	\$230.00	100%	50%	1	5%	30%	75%	32%	0.2	0.5	0.9	0.3	
1055	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Warehouse	Retro	9932	50%	4966	0.698	0.531	20	\$1,586.00	100%	50%	2	0%	10%	75%	48%	2.0	4.1	4.1	0.5	
1056	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Warehouse	Retro	262	83%	217	0.031	0.023	15	\$483.00	100%	50%	3	1%	10%	75%	19%	0.2	0.4	0.8	0.2	
1057	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Warehouse	Retro	2984	25%	746	0.105	0.080	10	\$20,309.70	100%	50%	4	0%	10%	75%	14%	1.3	0.0	3.2	0.0	
1058	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Warehouse	ROB	3096	3%	85	0.012	0.009	15	\$59.00	100%	50%	5	1%	70%	75%	38%	0.8	1.6	1.9	0.4	
1059	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Warehouse	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	58%	10%	75%	17%	0.5	0.9	0.8	0.6	
1060	Commercial	Motors	Cogged V-Belt	Biz-Custom	Warehouse	Retro	20965	3%	650	0.098	0.096	15	\$383.81	100%	50%	1	50%	10%	75%	41%	1.0	2.0	2.1	0.5	
1061	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Warehouse	Retro	3805	34%	1290	0.194	0.191	15	\$168.00	100%	50%	2	100%	10%	75%	53%	4.5	8.9	7.9	0.6	
1062	Commercial	Motors	Power Drive Systems	Biz-Custom	Warehouse	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	75%	53%	4.5	8.9	7.9	0.6	
1063	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Warehouse	Retro	40630	31%	12433	1.868	1.845	15	\$527.50	100%	50%	2	100%	1%	75%	55%	13.7	27.5	23.1	0.6	
1064	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Warehouse	Retro	551	26%	110	0.015	0.012	6	\$0.00	100%		1	2%	90%	75%	56%	#DIV/0!	0.0	0.0	0.0	
1065	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Warehouse	Retro	1398	10%	140	0.000	0.135	5	\$40.00	100%	50%	2	11%	20%	75%	49%	1.7	3.5	1.9	0.9	
1066	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Warehouse	Retro	1126	15%	169	0.000	0.102	8	\$70.00	100%	50%	2	11%	20%	75%	46%	1.3	2.6	1.9	0.7	
1067	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Warehouse	ROB	1621	23%	368	0.042	0.039	8	\$118.00	100%	50%	3	53%	25%	75%	48%	1.0	2.0	2.3	0.4</	

C&I Measure Summary: North Dakota

MDU_North Dakota																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
1086	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Warehouse	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	12%	54%	61%	9%	0.1	0.2	0.7	0.2	
1087	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Warehouse	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	4%	25%	61%	39%	1.9	3.9	3.9	0.5	
1088	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Warehouse	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	4%	25%	61%	43%	5.5	10.9	10.0	0.5	
1089	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Warehouse	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	4%	54%	61%	19%	0.4	0.7	1.1	0.3	
1090	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Warehouse	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	4%	54%	61%	9%	0.1	0.2	0.7	0.1	
1091	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Warehouse	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	91%	25%	61%	11%	0.5	0.9	0.8	0.6	
1092	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Warehouse	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	91%	25%	61%	40%	1.0	2.1	2.3	0.5	
1093	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Warehouse	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	0%	44%	61%	37%	1.3	2.7	2.8	0.5	
1094	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Warehouse	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	9%	30%	61%	10%	0.2	0.3	0.8	0.2	
1095	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Warehouse	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	7%	35%	61%	42%	2.9	5.8	5.4	0.5	
1096	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Warehouse	Retro	25733	63%	16083	0.000	0.000	15	\$147.41	100%	50%	1	40%	14%	75%	56%	40.2	77.3	108.3	0.4	
1097	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Warehouse	Retro	19919	82%	16287	1.802	2.333	15	\$4,130.00	100%	50%	2	100%	25%	75%	50%	2.2	4.3	4.3	0.5	
1098	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Warehouse	Retro	21909	83%	18277	2.023	2.618	15	\$4,190.00	100%	50%	3	100%	25%	75%	50%	2.4	4.8	4.7	0.5	
1099	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Warehouse	Retro	23903	82%	19579	2.167	2.805	15	\$4,230.00	100%	50%	4	100%	25%	75%	51%	2.5	5.1	4.9	0.5	
1100	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Warehouse	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	75%	46%	1.4	2.7	2.9	0.5	
1101	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Warehouse	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%		2	0%	20%	75%	56%	0.0	0.0	0.0	0.0	
1102	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Warehouse	Retro	651	38%	246	0.000	0.000	10	\$187.50	100%	50%	3	100%	14%	75%	36%	1.9	0.7	4.7	0.2	
1103	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Warehouse	Retro	0	0%	0	0.000	0.000	10	\$0.00	100%	0%	4	100%	14%	75%	56%	#DIV/0!	0.0	0.0	0.0	
1104	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Warehouse	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	75%	53%	4.5	9.0	8.5	0.5	
1105	Commercial	WholeBldg	WholeBldg - Corn RET	Biz-NC/Retrofit	Warehouse	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	75%	46%	1.2	2.3	2.5	0.5	
1106	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Warehouse	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	75%	25%	0.6	1.1	1.5	0.4	
1107	Commercial	WholeBldg_NC	WholeBldg - Corn NC	Biz-NC/Retrofit	Warehouse	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	75%	54%	5.8	11.6	10.6	0.5	
1108	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Other	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	75%	54%	2.8	5.6	5.3	0.5	
1109	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Other	ROB	1583	21%	329	0.038	0.038	13	\$127.00	100%	50%	2	100%	20%	75%	46%	1.2	2.5	2.7	0.5	
1110	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Other	Retro	103919	35%	36372	4.217	4.192	10	\$1,150.00	100%	50%	3	100%	50%	75%	56%	12.5	25.1	22.7	0.6	
1111	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Other	Retro	103919	2%	1970	0.228	0.227	10	\$244.00	100%	50%	4	100%	5%	75%	53%	3.2	6.4	6.2	0.5	
1112	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Other	Retro	1480	50%	740	0.086	0.085	15	\$49.50	100%	50%	5	5%	20%	75%	55%	7.9	15.9	14.8	0.5	
1113	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Other	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	75%	51%	1.9	3.7	3.8	0.5	
1114	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Other	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	75%	50%	1.0	2.0	2.3	0.5	
1115	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Other	ROB	11904	13%	1514	0.454	0.347	12	\$2,162.00	100%	50%	1	14%	17%	75%	56%	0.5	0.9	1.1	0.4	
1116	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Other	ROB	6351	15%	924	0.416	0.317	12	\$1,682.00	100%	50%	2	18%	53%	75%	56%	0.5	0.9	0.9	0.5	
1117	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Other	ROB	18912	50%	9499	4.275	3.263	12	\$3,824.00	100%	50%	2	18%	53%	75%	56%	2.1	4.1	2.5	0.8	
1118	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Other	ROB	12454	14%	1762	0.396	0.303	12	\$2,126.00	100%	50%	3	27%	24%	75%	56%	0.5	0.9	1.2	0.4	
1119	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Other	ROB	13385	67%	9010	3.337	2.547	12	\$2,490.00	100%	50%	4	6%	45%	75%	56%	2.7	5.3	3.4	0.8	
1120	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Other	ROB	7500	85%	6398	1.535	1.172	12	\$1,891.00	100%	50%	5	3%	16%	75%	56%	2.0	3.9	3.2	0.6	
1121	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Other	ROB	3000	79%	2355	0.698	0.533	12	\$1,497.00	100%	50%	5	3%	16%	75%	56%	1.0	2.0	1.8	0.6	
1122	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Other	ROB	41082	34%	14133	2.672	2.193	16	\$255.00	100%	50%	6	26%	61%	75%	56%	36.2	72.4	56.1	0.6	
1123	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Other	ROB	35485	26%	9319	1.762	1.446	16	\$1,375.00	100%	50%	6	26%	61%	75%	52%	4.4	8.9	7.3	0.6	
1124	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Other	ROB	553	14%	78	0.044	0.001	15	\$153.28	100%	50%	1	29%	10%	75%	20%	0.4	0.8	1.0	0.4	
1125	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Other	ROB	553	19%	104	0.059	0.001	15	\$214.59	100%											

C&I Measure Summary: North Dakota

MDU_North Dakota																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
1150	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	5957	6%	370	0.070	0.081	15	\$100.00	100%	50%	4	17%	10%	75%	56%	2.5	5.0	4.0	0.6	
1151	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	5957	12%	688	0.131	0.150	25	\$201.80	100%	50%	4	17%	10%	75%	56%	3.0	6.1	5.1	0.6	
1152	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Other	ROB	3639	3%	108	0.021	0.024	25	\$108.00	100%	50%	5	0%	20%	75%	56%	0.9	1.8	1.8	0.5	
1153	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Other	ROB	3639	4%	158	0.030	0.035	25	\$108.00	100%	50%	5	0%	20%	75%	56%	1.3	2.6	2.5	0.5	
1154	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Other	ROB	6026	4%	214	0.041	0.047	8	\$84.00	100%	50%	6	0%	20%	75%	56%	1.1	2.2	2.0	0.5	
1155	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Other	ROB	456	64%	292	0.055	0.045	10	\$784.00	100%	50%	1	100%	20%	70%	14%	0.2	0.4	0.8	0.2	
1156	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Other	Retro	456	2%	9	0.002	0.001	20	\$60.00	100%	50%	2	100%	80%	70%	12%	0.1	0.2	0.7	0.2	
1157	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Other	ROB	2262	32%	713	0.135	0.111	5	\$92.90	100%	50%	3	20%	85%	70%	49%	2.0	4.1	3.5	0.6	
1158	Commercial	HotWater	Faucet Aerator	Biz-Custom	Other	Retro	443	22%	97	0.018	0.015	10	\$6.70	100%	50%	4	20%	85%	70%	51%	6.8	13.7	10.7	0.6	
1159	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Other	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	70%	45%	1.8	3.5	3.1	0.6	
1160	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Other	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	1	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
1161	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Other	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	2	14%	69%	75%	54%	0.9	1.8	2.4	0.4	
1162	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Other	Retro	1589	60%	959	0.000	0.132	12	\$756.00	100%	50%	3	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
1163	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Other	Retro	1742	66%	1154	0.000	0.159	6	\$248.00	100%	50%	4	14%	69%	75%	61%	1.0	2.1	2.6	0.4	
1164	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Other	Retro	3235	60%	1953	0.000	0.269	6	\$756.00	100%	50%	5	14%	69%	75%	56%	0.6	1.2	1.7	0.3	
1165	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Other	Retro	1589	60%	959	0.000	0.132	12	\$756.00	100%	50%	6	14%	69%	75%	42%	0.5	1.0	1.5	0.3	
1166	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Other	Retro	194	68%	131	0.017	0.016	15	\$27.00	100%	50%	1	10%	43%	71%	57%	2.6	5.3	5.2	0.5	
1167	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Other	Retro	140	74%	103	0.013	0.012	15	\$59.00	100%	50%	1	10%	43%	71%	47%	0.9	1.9	2.2	0.4	
1168	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Other	Retro	125	45%	56	0.007	0.007	15	\$1.88	100%	50%	2	87%	43%	71%	63%	16.2	32.3	29.0	0.6	
1169	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Other	Retro	283	50%	142	0.018	0.017	15	\$70.00	100%	50%	2	87%	43%	71%	51%	1.1	2.2	2.4	0.5	
1170	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Other	Retro	561	61%	341	0.043	0.040	15	\$44.00	100%	50%	3	2%	43%	71%	60%	4.2	8.4	7.9	0.5	
1171	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Other	Retro	2636	68%	1793	0.226	0.213	15	\$330.00	100%	50%	4	1%	43%	71%	58%	2.9	5.9	5.7	0.5	
1172	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Other	Retro	104	100%	104	0.013	0.012	11	\$12.00	100%	50%	5	87%	0%	71%	60%	3.8	7.6	7.1	0.5	
1173	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Other	Retro	609	30%	183	0.023	0.022	10	\$57.50	100%	50%	6	90%	11%	71%	55%	1.3	2.6	2.7	0.5	
1174	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Other	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	90%	11%	71%	49%	1.0	2.0	2.3	0.4	
1175	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Other	Retro	476	30%	143	0.018	0.017	15	\$84.23	100%	50%	6	90%	11%	71%	46%	0.9	1.8	2.1	0.4	
1176	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Other	Retro	66	43%	28	0.004	0.003	5	\$32.50	100%	50%	7	1%	85%	71%	29%	0.2	0.4	0.8	0.2	
1177	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Other	Retro	385	61%	237	0.027	0.027	5	\$230.00	100%	50%	1	5%	30%	75%	32%	0.2	0.5	0.9	0.3	
1178	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Other	Retro	9932	50%	4966	0.576	0.572	20	\$1,586.00	100%	50%	2	0%	10%	75%	48%	2.0	4.0	4.1	0.5	
1179	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Other	Retro	262	83%	217	0.025	0.025	10	\$483.00	100%	50%	3	1%	10%	75%	19%	0.2	0.4	0.8	0.2	
1180	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Other	Retro	2984	25%	746	0.086	0.086	10	\$20,309.70	100%	50%	4	0%	10%	75%	14%	1.3	0.0	3.2	0.0	
1181	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Other	ROB	3096	3%	85	0.010	0.010	15	\$59.00	100%	50%	5	1%	70%	75%	38%	0.8	1.5	1.9	0.4	
1182	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Other	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	34%	10%	75%	17%	0.4	0.9	0.8	0.6	
1183	Commercial	Motors	Cogged V-Belt	Biz-Custom	Other	Retro	17237	3%	534	0.081	0.063	15	\$383.81	100%	50%	1	50%	10%	75%	37%	0.8	1.6	1.8	0.4	
1184	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Other	Retro	3805	34%	1290	0.196	0.151	15	\$168.00	100%	50%	2	100%	10%	75%	53%	4.3	8.6	7.9	0.5	
1185	Commercial	Motors	Power Drive Systems	Biz-Custom	Other	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	75%	53%	4.3	8.6	7.9	0.5	
1186	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Other	Retro	33406	31%	10222	1.557	1.197	15	\$527.50	100%	50%	2	100%	1%	75%	55%	10.9	21.7	19.1	0.6	
1187	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Other	Retro	551	26%	110	0.013	0.013	6	\$0.00	100%	50%	1	4%	90%	75%	56%	#DIV/0!	0.0	0.0	0.0	
1188	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Other	Retro	1398	10%	140	0.000	0.145	5	\$40.00	100%	50%	2	26%	20%	75%	49%	1.8	3.6	1.9	1.0	
1189	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Other	Retro	1126	15%	169	0.000	0.110	8	\$70.00	100%	50%	2	26%	20%	75%	46%	1.4	2.7	1.9	0.7	
1190	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Other	ROB	1621	23%	368	0.042	0.042	8	\$118.00	100%	50%	3	37%	25%	75%	48%	1.0	2.1	2.3	0.4	
1191	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Other	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	37%	25%	75%	46%	0.8	1.7	2.0	0.4	
1192	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Other	Retro	86783	18%	15778	1.829	1.818	15	\$480.00	100%	50%	3	37%	25%	75%	56%	17.5	34.9	32.0	0.5	
1193	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Other	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	37%	25%	75%	48%	1.9	3.8	4.0	0.5	
1194	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Other	Retro	764	47%	358	0.042	0.041	15	\$82.00	100%	50%	4	37%	25%	75%	50%	2.3	4.6	4.7	0.5	
1195	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Other	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	1%	10%	75%	46%	1.3	2.7	2.9	0.5	
1196	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Other	Retro	37	50%	18	0.003	0.002	4	\$10.22	100%	50%	1	4%	50%	61%	31%	0.3	0.7	1.1	0.3	
1197	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Other	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	61%	40%	2.9	5.7	5.5	0.5	
1198	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Other	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	3%	25%	61%	16%	0.4	0.7	1.1	0.3	
1199	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Other	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	61%	19%	0.4	0.8	1.2	0.3	
1200	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Other	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	10%	25%	61%	11%	0.2	0.4	0.8	0.2	
1201	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Other	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	3%	80%	61%	40%	2.8	5.7	5.5	0.5	
1202	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Other	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	3%	25%	61%	40%	2.5	5.0	4.9	0.5	
1203	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Other	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	4%	25%	61%	26%	0.7	1.4	1.7	0.4	
1204	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Other	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	17%	25%	61%	33%	1.0	2.0	2.2	0.4	
1205	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Other	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	61%	36%	1.4	2.7	2.8	0.5	
1206	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Other	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	3%	80%	61%	40%	2.8	5.7	5.5	0.5	
1207	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Other	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	3%	2%	61%	30%	0.7	1.3	1.7	0.4	
1208	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Other	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50												

C&I Measure Summary: North Dakota

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1232	Industrial	CompressedAir	Efficient Air Compressor Equipment	Biz-Custom	Industrial	ROB	9	11%	1	0.000	0.000	13	\$0.41	100%	24%	1	100%	25%	75%	35%	1.2	5.1	1.9	0.6
1233	Industrial	CompressedAir	Efficient Air Compressor Controls	Biz-Custom	Industrial	Retro	15	7%	1	0.000	0.000	3	\$0.12	100%	83%	2	100%	25%	75%	55%	1.2	1.5	2.4	0.5
1234	Industrial	HVAC	Efficient HVAC Equipment	Biz-Prescriptive HVAC	Industrial	ROB	8	13%	1	0.000	0.000	15	\$0.19	100%	100%	1	100%	25%	75%	56%	4.3	4.3	5.0	0.9
1235	Industrial	HVAC	Efficient HVAC O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.10	100%	50%	2	100%	25%	75%	53%	2.3	4.6	2.4	0.9
1236	Industrial	Lighting	Efficient Lighting Equipment	Biz-Prescriptive Light	Industrial	Retro	2	50%	1	0.000	0.000	15	\$0.17	100%	50%	1	100%	25%	71%	57%	3.8	7.5	5.0	0.8
1237	Industrial	Lighting	Efficient Lighting O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.07	100%	50%	2	100%	25%	71%	61%	2.5	4.9	3.3	0.8
1238	Industrial	Machine Drive	Efficient MachDr Equipment	Biz-Custom	Industrial	ROB	5	20%	1	0.000	0.000	15	\$0.17	100%	53%	1	100%	25%	75%	51%	3.3	6.2	5.0	0.7
1239	Industrial	Machine Drive	Efficient MachDr O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.10	100%	50%	2	100%	25%	75%	53%	1.5	3.0	2.4	0.6
1240	Industrial	Process Heat	Efficient ProcHeat Equipment	Biz-Custom	Industrial	ROB	10	10%	1	0.000	0.000	15	\$0.17	100%	53%	1	100%	25%	75%	51%	3.3	6.2	5.0	0.7
1241	Industrial	Process Heat	Efficient ProcHeat O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.08	100%	50%	2	100%	25%	75%	54%	1.9	3.7	2.9	0.6
1242	Industrial	Process Refrig	Efficient ProcRefrig Equipment	Biz-Custom	Industrial	ROB	6	17%	1	0.000	0.000	15	\$0.18	100%	50%	1	100%	25%	75%	50%	3.1	6.2	4.7	0.7
1243	Industrial	Process Refrig	Efficient ProcRefrig O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.11	100%	50%	2	100%	25%	75%	53%	1.4	2.7	2.3	0.6
1244	Industrial	Other Process	Efficient Other Facility Process Equipment	Biz-Custom	Industrial	ROB	4	25%	1	0.000	0.000	11	\$0.35	100%	26%	1	100%	25%	75%	39%	1.3	5.0	2.0	0.6
1245	Industrial	Other Process	Efficient Other Facility Process O&M	Biz-Custom	Industrial	Retro	14	7%	1	0.000	0.000	11	\$0.30	100%	30%	2	100%	25%	75%	43%	1.5	5.0	2.3	0.6
1246	Industrial	WholeBldg	Power Distribution (Transformers)	Biz-Custom	Industrial	Retro	179	1%	1	0.000	0.000	30	\$1.17	100%	13%	1	100%	25%	75%	18%	0.7	5.5	1.1	0.6
1247	Industrial	WholeBldg	Strategic Energy Management	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.09	100%	50%	2	100%	25%	75%	53%	1.7	3.3	2.6	0.6
1248	Agriculture	Motors	Efficient Motor Pmp Equipment - Q1 Cost	Biz-Agriculture	Agriculture	ROB	8	13%	1	0.000	0.000	15	\$0.01	100%	100%	1	100%	20%	75%	56%	50.7	50.7	77.4	0.7
1249	Agriculture	Motors	Efficient Motor Pmp Equipment - Q2 Cost	Biz-Agriculture	Agriculture	ROB	8	13%	1	0.000	0.000	15	\$0.02	100%	100%	1	100%	20%	75%	56%	25.3	25.3	39.2	0.6
1250	Agriculture	Motors	Efficient Motor Pmp Equipment - Q3 Cost	Biz-Agriculture	Agriculture	ROB	8	13%	1	0.000	0.000	15	\$0.05	100%	100%	1	100%	20%	75%	56%	10.1	10.1	16.3	0.6
1251	Agriculture	Motors	Efficient Motor Pmp O&M	Biz-Agriculture	Agriculture	Retro	33	3%	1	0.000	0.000	3	\$0.10	100%	50%	2	100%	20%	75%	53%	1.3	2.7	2.4	0.6
1252	Agriculture	Refrigeration	Efficient Refrigeration Equipment	Biz-Agriculture	Agriculture	ROB	6	16%	1	0.000	0.000	15	\$0.18	100%	44%	1	100%	20%	61%	39%	2.5	5.7	4.7	0.5
1253	Agriculture	Lighting	Efficient Lighting	Biz-Agriculture	Agriculture	Retro	2	42%	1	0.000	0.000	15	\$0.17	100%	47%	1	100%	20%	71%	47%	2.7	5.7	5.0	0.5
1254	Agriculture	Lighting	Grow Lighting	Biz-Agriculture	Agriculture	Retro	3	39%	1	0.000	0.000	15	\$0.27	100%	30%	2	100%	40%	71%	43%	2.0	6.8	3.1	0.6
1255	Agriculture	Ventilation	Efficient Ventilation	Biz-Agriculture	Agriculture	Retro	2	53%	1	0.000	0.000	10	\$0.32	100%	44%	1	100%	20%	75%	45%	1.2	2.7	2.2	0.5
1256	Agriculture	HVAC	HVAC	Biz-Agriculture	Agriculture	ROB	8	13%	1	0.000	0.000	15	\$0.19	100%	74%	1	100%	20%	75%	53%	2.7	3.6	4.8	0.6

C&I Measure Summary: South Dakota

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Assembly	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	2.8	5.6	5.9	0.5
2	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Assembly	ROB	1583	21%	329	0.039	0.038	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.3	2.5	3.0	0.4
3	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Assembly	Retro	103919	35%	36372	4.274	4.217	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	12.7	25.3	25.5	0.5
4	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Assembly	Retro	103919	2%	1970	0.231	0.228	13	\$244.00	100%	50%	4	100%	5%	76%	54%	3.9	7.9	8.3	0.5
5	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Assembly	Retro	1480	50%	740	0.087	0.086	15	\$49.50	100%	50%	5	5%	20%	76%	55%	8.0	16.1	16.7	0.5
6	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Assembly	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	1.9	3.8	4.2	0.4
7	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Assembly	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.0	2.0	2.5	0.4
8	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Assembly	ROB	11904	13%	1514	0.454	0.198	12	\$2,162.00	100%	50%	1	14%	17%	76%	29%	0.4	0.8	1.1	0.4
9	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Assembly	ROB	6351	15%	924	0.416	0.181	12	\$1,682.00	100%	50%	2	18%	53%	76%	24%	0.4	0.8	1.0	0.4
10	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Assembly	ROB	18912	50%	9499	4.275	1.863	12	\$3,824.00	100%	50%	2	18%	53%	76%	48%	1.8	3.7	2.8	0.7
11	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Assembly	ROB	12454	14%	1762	0.396	0.173	12	\$2,126.00	100%	50%	3	27%	24%	76%	32%	0.4	0.9	1.3	0.3
12	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Assembly	ROB	13385	67%	9010	3.337	1.454	12	\$2,490.00	100%	50%	4	6%	45%	76%	51%	2.4	4.8	3.8	0.6
13	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Assembly	ROB	7500	85%	6398	1.535	0.669	12	\$1,891.00	100%	50%	5	3%	16%	76%	50%	1.8	3.6	3.6	0.5
14	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Assembly	ROB	3000	79%	2355	0.698	0.304	12	\$1,497.00	100%	50%	5	3%	16%	76%	42%	0.9	1.9	1.9	0.5
15	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Assembly	ROB	41082	34%	14133	2.144	2.820	16	\$255.00	100%	50%	6	26%	61%	76%	57%	37.0	73.9	63.3	0.6
16	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Assembly	ROB	35485	26%	9319	1.414	1.859	16	\$1,375.00	100%	50%	6	26%	61%	76%	54%	4.5	9.0	8.2	0.6
17	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	500	14%	71	0.041	0.001	15	\$153.28	100%	50%	1	21%	10%	76%	22%	0.4	0.7	1.0	0.4
18	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	500	19%	94	0.054	0.001	15	\$214.59	100%	50%	1	21%	10%	76%	21%	0.3	0.7	1.0	0.4
19	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	500	30%	152	0.088	0.001	15	\$398.52	100%	50%	1	21%	10%	76%	20%	0.3	0.6	0.9	0.3
20	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Assembly	ROB	561	9%	51	0.029	0.000	15	\$71.00	100%	50%	2	21%	10%	76%	29%	0.6	1.1	1.3	0.4
21	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Assembly	ROB	561	13%	75	0.043	0.001	15	\$109.23	100%	50%	2	21%	10%	76%	28%	0.5	1.1	1.2	0.4
22	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Assembly	ROB	561	24%	132	0.076	0.001	15	\$218.46	100%	50%	2	21%	10%	76%	26%	0.5	1.0	1.2	0.4
23	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Assembly	Retro	608	7%	43	0.024	0.000	3	\$5.13	100%	50%	3	43%	50%	76%	54%	1.8	3.6	2.8	0.7
24	Commercial	Cooling	Air Side Economizer	Biz-Custom	Assembly	Retro	503	20%	101	0.058	0.001	15	\$153.28	100%	50%	4	43%	25%	76%	28%	0.5	1.0	1.2	0.4
25	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Assembly	Retro	527	20%	105	0.061	0.001	15	\$197.50	100%	50%	5	43%	20%	76%	23%	0.4	0.8	1.1	0.4
26	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	521	13%	65	0.037	0.001	15	\$115.00	100%	50%	6	29%	10%	76%	24%	0.4	0.9	1.1	0.4
27	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	521	22%	116	0.067	0.001	15	\$514.00	100%	50%	6	29%	10%	76%	15%	0.2	0.4	0.7	0.2
28	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	521	33%	174	0.100	0.001	15	\$630.50	100%	50%	6	29%	10%	76%	16%	0.2	0.4	0.8	0.3
29	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Assembly	ROB	2084	14%	295	0.170	0.002	11	\$175.00	100%	50%	7	29%	20%	76%	43%	1.1	2.2	1.9	0.6
30	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Assembly	ROB	672	15%	98	0.056	0.001	8	\$84.00	100%	50%	8	0%	20%	76%	37%	0.6	1.2	1.3	0.5
31	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Assembly	ROB	533	9%	48	0.028	0.000	23	\$126.00	100%	50%	9	26%	10%	76%	20%	0.4	0.8	1.0	0.4
32	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Assembly	ROB	268	23%	61	0.035	0.000	23	\$126.00	100%	50%	10	3%	10%	76%	22%	0.5	1.0	1.2	0.4
33	Commercial	Cooling	Window Film	Biz-Custom	Assembly	Retro	6000	4%	264	0.152	0.002	10	\$153.81	100%	50%	11	100%	25%	76%	44%	0.6	2.0	0.0	0.6
34	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Assembly	Retro	6000	6%	360	0.207	0.003	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.5	1.1	1.3	0.4
35	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Assembly	Retro	561	0%	0	0.037	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
36	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	4483	5%	237	0.046	0.052	15	\$135.00	100%	50%	1	31%	10%	76%	44%	1.2	2.4	2.4	0.5
37	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	4483	11%	483	0.093	0.106	15	\$445.76	100%	50%	1	31%	10%	76%	36%	0.7	1.5	1.7	0.4
38	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Assembly	ROB	4483	14%	649	0.125	0.142	15	\$445.76	100%	50%	1	31%	10%	76%	41%	1.0	2.0	2.1	0.5
39	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5031	6%	289	0.056	0.063	15	\$100.00	100%	50%	2	16%	10%	76%	49%	2.0	3.9	3.6	0.5
40	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5031	11%	543	0.105	0.119	15	\$171.08	100%	50%	2	16%	10%	76%	50%	2.2	4.3	3.9	0.5
41	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5191	6%	311	0.060	0.068	15	\$100.00	100%	50%	3	15%	10%	76%	50%	2.1	4.2	3.9	0.5
42	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5191	11%	580	0.112	0.127	15	\$182.26	100%	50%	3	15%	10%	76%	50%	2.2	4.3	3.9	0.5
43	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5381	6%	334	0.065	0.073	15	\$100.00	100%	50%	4	15%	10%	76%	50%	2.3	4.5	4.1	0.6
44	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Assembly	ROB	5381	12%	622	0.120	0.136	15	\$201.80	100%	50%	4	15%	10%	76%	50%	2.1	4.2	3.8	0.5
45	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Assembly	ROB	3288	3%	98	0.019	0.021	25	\$108.00	100%	50%	5	7%	20%	76%	33%	0.8	1.6	1.9	0.4
46	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Assembly	ROB	3288	4%	143	0.028	0.031	25	\$108.00	100%	50%	5	7%	20%	76%	40%	1.2	2.4	2.5	0.5
47	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Assembly	ROB	5443	4%	193	0.037	0.042	8	\$84.00	100%	50%	6	0%	20%	76%	47%	1.0	2.0	2.0	0.5
48	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Assembly	ROB	312	64%	200	0.030	0.040	10	\$784.00	100%	50%	1	100%	0%	69%	11%	0.1	0.2	0.7	0.2
49	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Assembly	Retro	312	2%	6	0.001	0.001	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.1	0.2	0.6	0.1
50	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Assembly	ROB	2262	32%	713	0.108	0.142	5	\$92.90	100%	50%	3	20%	85%	69%	48%	2.1	4.2	3.8	0.5
51	Commercial	HotWater	Faucet Aerator	Biz-Custom	Assembly	Retro	443	22%	97	0.015	0.019	10	\$6.70	100%	50%	4	20%	85%	69%	50%	7.0	13.9	12.0	0.6
52	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Assembly	ROB	2239	29%	660	0.100	0.132	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.8	3.6	3.5	0.5
53	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Assembly	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.3
54	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Assembly	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.3
55	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Assembly	Retro	1589	60%	959	0.000	0.133	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3
56	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Assembly	Retro	1742	66%	1154	0.000	0.160	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.0	2.1	2.9	0.4
57	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Assembly	Retro	3235	60%	1953	0.000	0.270	6	\$756.00	100%	50%	5	14%	69%	76%	58%	0.6	1.2	1.8	0.3
58	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Assembly	Retro	1589	60%	959	0.000	0.133	12	\$756.00	100%	50%	6	14%	69%	76%	47%	0.5	1.0	1.7	0.3
59																								

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
64	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Assembly	Retro	1687	68%	1147	0.148	0.141	15	\$330.00	100%	50%	4	1%	45%	74%	57%	1.9	3.8	4.3	0.5
65	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Assembly	Retro	67	100%	67	0.009	0.008	11	\$12.00	100%	50%	5	56%	0%	74%	59%	2.5	4.9	5.2	0.5
66	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Assembly	Retro	390	30%	117	0.015	0.014	10	\$57.50	100%	50%	6	60%	11%	74%	53%	0.8	1.7	2.1	0.4
67	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Assembly	Retro	1	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	60%	11%	74%	41%	0.7	1.3	1.8	0.4
68	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Assembly	Retro	305	30%	91	0.012	0.011	15	\$53.90	100%	50%	6	60%	11%	74%	51%	0.9	1.9	2.3	0.4
69	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Assembly	Retro	69	43%	29	0.004	0.004	5	\$32.50	100%	50%	7	1%	85%	74%	35%	0.2	0.4	0.9	0.2
70	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Assembly	Retro	385	61%	237	0.028	0.027	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.2	0.5	0.9	0.2
71	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Assembly	Retro	9932	50%	4966	0.583	0.576	20	\$1,586.00	100%	50%	2	37%	21%	76%	50%	2.0	4.0	4.6	0.4
72	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Assembly	Retro	262	83%	217	0.026	0.025	10	\$483.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.9	0.2
73	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Assembly	Retro	2984	25%	746	0.088	0.086	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	1.3	0.0	3.3	0.0
74	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Assembly	ROB	3096	3%	85	0.010	0.010	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.8	1.5	2.1	0.4
75	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Assembly	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	39%	10%	76%	20%	0.4	0.9	0.8	0.6
76	Commercial	Motors	Cogged V-Belt	Biz-Custom	Assembly	Retro	17237	3%	534	0.079	0.065	15	\$383.81	100%	50%	1	50%	10%	76%	41%	0.8	1.6	2.0	0.4
77	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Assembly	Retro	3805	34%	1290	0.191	0.157	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.3	8.7	8.8	0.5
78	Commercial	Motors	Power Drive Systems	Biz-Custom	Assembly	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.3	8.7	8.8	0.5
79	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Assembly	Retro	33406	31%	10222	1.517	1.248	15	\$527.50	100%	50%	2	100%	1%	76%	56%	11.0	21.9	21.4	0.5
80	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Assembly	Retro	551	26%	110	0.013	0.013	6	\$0.00	100%	50%	1	5%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
81	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Assembly	Retro	1398	10%	140	0.000	0.146	5	\$40.00	100%	50%	2	27%	20%	76%	50%	1.8	3.7	2.0	0.9
82	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Assembly	Retro	1126	15%	169	0.000	0.111	8	\$70.00	100%	50%	2	27%	20%	76%	47%	1.4	2.7	2.1	0.7
83	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Assembly	ROB	1621	23%	368	0.042	0.043	8	\$118.00	100%	50%	3	36%	25%	76%	50%	1.0	2.1	2.5	0.4
84	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Assembly	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	36%	25%	76%	48%	0.8	1.7	2.1	0.4
85	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Assembly	Retro	86783	18%	15778	1.854	1.829	15	\$480.00	100%	50%	3	36%	25%	76%	56%	17.7	35.3	36.0	0.5
86	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Assembly	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	36%	25%	76%	49%	1.9	3.9	4.5	0.4
87	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Assembly	Retro	764	47%	358	0.042	0.042	15	\$82.00	100%	50%	4	36%	25%	76%	52%	2.3	4.7	5.2	0.4
88	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Assembly	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	1%	10%	76%	48%	1.3	2.7	3.2	0.4
89	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Assembly	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	5%	50%	64%	48%	#DIV/0!	0.0	0.0	0.0
90	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Assembly	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	2.9	5.8	6.2	0.5
91	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Assembly	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	3%	25%	64%	19%	0.4	0.7	1.2	0.3
92	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Assembly	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.4	0.8	1.3	0.3
93	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Assembly	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	11%	25%	64%	12%	0.2	0.4	0.9	0.2
94	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Assembly	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	3%	80%	64%	41%	2.9	5.7	6.1	0.5
95	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Assembly	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	3%	25%	64%	41%	2.5	5.1	5.5	0.5
96	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Assembly	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	4%	25%	64%	29%	0.7	1.4	1.9	0.4
97	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Assembly	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	18%	25%	64%	37%	1.0	2.0	2.4	0.4
98	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Assembly	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	64%	39%	1.4	2.7	3.1	0.4
99	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Assembly	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	3%	80%	64%	41%	2.9	5.7	6.1	0.5
100	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Assembly	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	3%	2%	64%	34%	0.7	1.4	1.8	0.4
101	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Assembly	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	18%	54%	64%	15%	0.2	0.5	1.0	0.2
102	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Assembly	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	18%	54%	64%	10%	0.1	0.2	0.7	0.2
103	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Assembly	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	6%	25%	64%	41%	2.0	3.9	4.3	0.5
104	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Assembly	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	6%	25%	64%	45%	5.5	11.0	11.2	0.5
105	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Assembly	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	6%	54%	64%	22%	0.4	0.7	1.2	0.3
106	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Assembly	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	6%	54%	64%	10%	0.1	0.2	0.7	0.1
107	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Assembly	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	92%	25%	64%	13%	0.5	0.9	0.8	0.6
108	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Assembly	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	92%	25%	64%	41%	1.1	2.1	2.5	0.4
109	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Assembly	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	6%	44%	64%	39%	1.3	2.7	3.1	0.4
110	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Assembly	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	2%	30%	64%	12%	0.2	0.3	0.8	0.2
111	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Assembly	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	11%	35%	64%	43%	2.9	5.8	6.1	0.5
112	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Assembly	Retro	3443	63%	2152	0.000	0.000	15	\$147.41	100%	50%	1	75%	14%	76%	55%	5.2	10.5	16.3	0.3
113	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Assembly	Retro	19919	82%	16287	2.451	2.138	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.3	4.5	4.8	0.5
114	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Assembly	Retro	21909	83%	18277	2.751	2.400	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.5	5.0	5.2	0.5
115	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Assembly	Retro	23903	82%	19579	2.947	2.571	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	2.7	5.3	5.5	0.5
116	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Assembly	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.5	3.0	3.2	0.5
117	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Assembly	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	50%	2	0%	20%	76%	57%	0.0	0.0	0.0	0.0
118	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Assembly	Retro	508	73%	371	0.000	0.000	10	\$187.50	100%	50%	3	100%	14%	76%	45%	5.0	1.0	12.0	0.3
119	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Assembly	Retro	610	16%	99	0.073	0.000	10	\$341.21	100%	50%	4	3%	100%	76%	16%	1.6	0.4	3.7	0.3
120	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Assembly	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.0	9.9	9.5	0.5
121	Commercial	WholeBldg	WholeBlg - Com RET	Biz-NC/Retrofit	Assembly	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.3	2.6	2.8	0.5
122	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Assembly	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	29%	0.6	1.2	1.7	0.4
123	Commercial	WholeBldg_NC	WholeBlg - Com NC	Biz-NC/Retrofit	Assembly	NC	4	25%	1	0.000	0.000	12												

C&I Measure Summary: South Dakota

MDU_South Dakota																									
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
141	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Education	ROB	354	19%	67	0.044	0.000	15	\$214.59	100%	50%	1	25%	10%	76%	17%	0.3	0.5	0.8	0.3	
142	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Education	ROB	354	30%	108	0.071	0.000	15	\$398.52	100%	50%	1	25%	10%	76%	15%	0.2	0.5	0.8	0.3	
143	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Education	ROB	398	9%	36	0.024	0.000	15	\$71.00	100%	50%	2	25%	10%	76%	22%	0.4	0.9	1.1	0.4	
144	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Education	ROB	398	13%	53	0.035	0.000	15	\$109.23	100%	50%	2	25%	10%	76%	22%	0.4	0.8	1.0	0.4	
145	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Education	ROB	398	24%	94	0.062	0.000	15	\$218.46	100%	50%	2	25%	10%	76%	21%	0.4	0.7	1.0	0.4	
146	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Education	Retro	431	7%	30	0.020	0.000	3	\$5.33	100%	50%	3	50%	50%	76%	53%	1.3	2.6	2.0	0.6	
147	Commercial	Cooling	Air Side Economizer	Biz-Custom	Education	Retro	356	20%	71	0.047	0.000	15	\$153.28	100%	50%	4	50%	25%	76%	22%	0.4	0.8	1.0	0.4	
148	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Education	Retro	374	20%	75	0.049	0.000	15	\$197.50	100%	50%	5	50%	20%	76%	20%	0.3	0.6	0.9	0.4	
149	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	369	13%	46	0.030	0.000	15	\$115.00	100%	50%	6	0%	10%	76%	20%	0.3	0.7	0.9	0.4	
150	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	369	22%	82	0.054	0.000	15	\$514.00	100%	50%	6	0%	10%	76%	15%	0.1	0.3	0.7	0.2	
151	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	369	33%	123	0.081	0.000	15	\$630.50	100%	50%	6	0%	10%	76%	15%	0.2	0.3	0.7	0.2	
152	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Education	ROB	1477	14%	209	0.138	0.000	11	\$175.00	100%	50%	7	0%	20%	76%	38%	0.8	1.6	1.5	0.5	
153	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Education	ROB	476	15%	69	0.046	0.000	8	\$84.00	100%	50%	8	0%	20%	76%	32%	0.4	0.9	1.0	0.4	
154	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Education	ROB	377	9%	34	0.022	0.000	23	\$126.00	100%	50%	9	45%	10%	76%	15%	0.3	0.6	0.9	0.3	
155	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Education	ROB	190	23%	43	0.028	0.000	23	\$126.00	100%	50%	10	5%	10%	76%	18%	0.4	0.7	1.0	0.4	
156	Commercial	Cooling	Window Film	Biz-Custom	Education	Retro	6000	4%	264	0.174	0.000	10	\$153.81	100%	50%	11	100%	25%	76%	44%	0.6	2.2	0.0	0.6	
157	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Education	Retro	6000	6%	360	0.237	0.000	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.6	1.2	1.3	0.5	
158	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Education	Retro	398	0%	0	0.068	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0	0.0
159	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	3167	5%	168	0.037	0.042	15	\$135.00	100%	50%	1	0%	10%	76%	39%	0.9	1.8	1.8	0.5	
160	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	3167	11%	342	0.076	0.085	15	\$445.76	100%	50%	1	0%	10%	76%	31%	0.6	1.1	1.3	0.4	
161	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Education	ROB	3167	14%	459	0.102	0.114	15	\$520.06	100%	50%	1	0%	10%	76%	33%	0.6	1.3	1.5	0.4	
162	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3554	6%	204	0.045	0.051	15	\$100.00	100%	50%	2	28%	10%	76%	46%	1.5	3.0	2.7	0.5	
163	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3554	11%	384	0.085	0.095	15	\$171.08	100%	50%	2	28%	10%	76%	47%	1.6	3.2	2.9	0.6	
164	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3667	6%	220	0.049	0.054	15	\$100.00	100%	50%	3	27%	10%	76%	47%	1.6	3.2	2.9	0.6	
165	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3667	11%	410	0.091	0.101	15	\$182.26	100%	50%	3	27%	10%	76%	47%	1.6	3.2	2.9	0.6	
166	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3801	6%	236	0.053	0.059	15	\$100.00	100%	50%	4	27%	10%	76%	47%	1.7	3.4	3.1	0.6	
167	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Education	ROB	3801	12%	439	0.098	0.109	15	\$201.80	100%	50%	4	27%	10%	76%	46%	1.6	3.1	2.9	0.6	
168	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Education	ROB	2323	3%	69	0.015	0.017	25	\$108.00	100%	50%	5	9%	20%	76%	27%	0.6	1.2	1.5	0.4	
169	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Education	ROB	2323	4%	101	0.022	0.025	25	\$108.00	100%	50%	5	9%	20%	76%	34%	0.9	1.8	1.9	0.5	
170	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Education	ROB	3845	4%	137	0.030	0.034	8	\$84.00	100%	50%	6	0%	20%	76%	43%	0.7	1.5	1.6	0.5	
171	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Education	ROB	632	64%	405	0.061	0.081	10	\$784.00	100%	50%	1	100%	17%	69%	16%	0.2	0.5	0.9	0.3	
172	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Education	Retro	632	2%	13	0.002	0.003	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.2	0.3	0.8	0.2	
173	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Education	ROB	1610	32%	570	0.087	0.114	5	\$92.90	100%	50%	3	20%	85%	69%	47%	1.7	3.3	3.2	0.5	
174	Commercial	HotWater	Faucet Aerator	Biz-Custom	Education	Retro	355	22%	78	0.012	0.016	10	\$6.70	100%	50%	4	20%	85%	69%	49%	5.6	11.1	9.7	0.6	
175	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Education	ROB	2239	29%	660	0.100	0.132	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.8	3.6	3.5	0.5	
176	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Education	Retro	856	66%	567	0.000	0.079	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.3	
177	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Education	Retro	856	66%	567	0.000	0.079	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.3	
178	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Education	Retro	1589	60%	959	0.000	0.134	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3	
179	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Education	Retro	1742	66%	1154	0.000	0.161	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.1	2.1	2.9	0.4	
180	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Education	Retro	3235	60%	1953	0.000	0.273	6	\$756.00	100%	50%	5	14%	69%	76%	58%	0.6	1.2	1.8	0.3	
181	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Education	Retro	1589	60%	959	0.000	0.134	12	\$756.00	100%	50%	6	14%	69%	76%	47%	0.5	1.0	1.7	0.3	
182	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Education	Retro	180	68%	121	0.012	0.014	15	\$27.00	100%	50%	1	10%	45%	74%	58%	2.4	4.7	5.4	0.4	
183	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Education	Retro	129	74%	95	0.010	0.011	15	\$59.00	100%	50%	1	10%	45%	74%	49%	0.9	1.7	2.2	0.4	
184	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Education	Retro	116	45%	52	0.005	0.006	15	\$1.88	100%	50%	2	88%	45%	74%	65%	14.5	29.1	30.3	0.5	
185	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Education	Retro	262	50%	131	0.013	0.016	15	\$70.00	100%	50%	2	88%	45%	74%	52%	1.0	2.0	2.5	0.4	
186	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Education	Retro	520	61%	316	0.032	0.037	15	\$44.00	100%	50%	3	1%	45%	74%	61%	3.8	7.6	8.3	0.5	
187	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Education	Retro	2440	68%	1660	0.167	0.196	15	\$330.00	100%	50%	4	1%	45%	74%	59%	2.7	5.3	5.9	0.4	
188	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Education	Retro	97	100%	97	0.010	0.011	11	\$12.00	100%	50%	5	88%	0%	74%	62%	3.4	6.8	7.4	0.5	
189	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Education	Retro	564	30%	169	0.017	0.020	10	\$57.50	100%	50%	6	90%	11%	74%	56%	1.2	2.3	2.8	0.4	
190	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Education	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	90%	11%	74%	51%	0.9	1.8	2.3	0.4	
191	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Education	Retro	440	30%	132	0.013	0.016	15	\$77.97	100%	50%	6	90%	11%	74%	51%	0.9	1.8	2.3	0.4	
192	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Education	Retro	66	43%	28	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	34%	0.2	0.4	0.9	0.2	
193	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Education	Retro	385	61%	237	0.024	0.026	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.2	0.4	0.9	0.2	
194	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Education	Retro	9932	50%	4966	0.514	0.542	20	\$1586.00	100%	50%	2	46%	21%	76%	50%	2.0	3.9	4.6	0.4	
195	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Education	Retro	2093	83%	1737	0.180	0.190	10	\$483.00	100%	50%	3	1%	10%	76%	51%	1.4	2.8	3.3	0.4	
196	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Education	Retro	2984	25%	746	0.077	0.081	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	1.3	0.0	3.3	0.0	
197	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Education	ROB	3096	3%	85	0.009	0.009	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.8	1.5	2.1	0.4	
198	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Education	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	0%	10%	76%	20%	0.4	0.8	0.8	0.5	

C&I Measure Summary: South Dakota

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
214	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Education	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	6%	25%	64%	19%	0.4	0.7	1.2	0.3
215	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Education	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.4	0.8	1.3	0.3
216	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Education	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	21%	25%	64%	12%	0.2	0.4	0.9	0.2
217	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Education	Retro	2884	55%	1586	0.222	0.177	15	\$304.59	100%	50%	6	6%	80%	64%	41%	2.9	5.7	6.1	0.5
218	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Education	Retro	2236	32%	716	0.100	0.080	15	\$155.00	100%	50%	7	6%	25%	64%	41%	2.5	5.1	5.5	0.5
219	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Education	Retro	2960	50%	1480	0.207	0.166	15	\$1,170.00	100%	50%	8	8%	25%	64%	29%	0.7	1.4	1.9	0.4
220	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Education	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	14%	25%	64%	37%	1.0	2.0	2.4	0.4
221	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Education	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	4%	25%	64%	39%	1.4	2.7	3.1	0.4
222	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Education	Retro	2884	55%	1586	0.222	0.177	15	\$304.59	100%	50%	11	2%	80%	64%	41%	2.9	5.7	6.1	0.5
223	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Education	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	2%	2%	64%	34%	0.7	1.4	1.8	0.4
224	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Education	ROB	2140	29%	629	0.088	0.070	12	\$1,238.50	100%	50%	13	13%	54%	64%	15%	0.2	0.5	1.0	0.2
225	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Education	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	13%	54%	64%	10%	0.1	0.2	0.7	0.2
226	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Education	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	5%	75%	64%	41%	2.0	3.9	4.3	0.5
227	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Education	Retro	2512	59%	1486	0.208	0.166	12	\$127.00	100%	50%	15	5%	25%	64%	45%	5.5	11.0	11.2	0.5
228	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Education	ROB	6374	20%	1275	0.178	0.143	12	\$1,650.50	100%	50%	16	4%	54%	64%	22%	0.4	0.7	1.2	0.3
229	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Education	ROB	4522	7%	305	0.043	0.034	12	\$1,520.50	100%	50%	16	4%	54%	64%	10%	0.1	0.2	0.7	0.1
230	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Education	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	93%	25%	64%	13%	0.5	0.9	0.8	0.6
231	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Education	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	93%	25%	64%	41%	1.1	2.1	2.5	0.4
232	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Education	ROB	6993	10%	721	0.101	0.081	10	\$222.00	100%	50%	19	4%	44%	64%	39%	1.3	2.7	3.1	0.4
233	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Education	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	3%	30%	64%	12%	0.2	0.3	0.8	0.2
234	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Education	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	8%	35%	64%	43%	2.9	5.8	6.1	0.5
235	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Education	Retro	4291	63%	2682	0.000	0.000	15	\$147.41	100%	50%	1	40%	23%	76%	56%	6.5	13.1	20.2	0.3
236	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Education	Retro	19919	82%	16287	2.387	2.298	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.3	4.6	4.8	0.5
237	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Education	Retro	21909	83%	18277	2.678	2.579	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.5	5.1	5.2	0.5
238	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Education	Retro	23903	82%	19579	2.869	2.763	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	2.7	5.4	5.5	0.5
239	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Education	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.5	3.0	3.2	0.5
240	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Education	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	50%	2	0%	20%	76%	57%	0.0	0.0	0.0	0.0
241	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Education	Retro	360	76%	272	0.000	0.000	10	\$187.50	100%	50%	3	100%	23%	76%	41%	3.6	0.8	8.7	0.2
242	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Education	Retro	432	61%	262	0.052	0.000	10	\$341.21	100%	50%	4	100%	23%	76%	31%	1.4	0.6	3.6	0.3
243	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Education	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.0	9.9	9.5	0.5
244	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Education	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.3	2.5	2.8	0.5
245	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Education	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	29%	0.6	1.2	1.7	0.4
246	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Education	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	6.4	12.7	11.9	0.5
247	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Food Sales	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	3.0	5.9	5.9	0.5
248	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Food Sales	ROB	1583	21%	329	0.051	0.038	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.3	2.6	3.0	0.4
249	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Food Sales	Retro	103919	35%	36372	5.616	4.169	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	13.3	26.6	25.5	0.5
250	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Food Sales	Retro	103919	2%	1970	0.304	0.226	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.1	8.3	8.3	0.5
251	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Food Sales	Retro	1480	50%	740	0.114	0.085	15	\$49.50	100%	50%	5	5%	20%	76%	55%	8.4	16.9	16.7	0.5
252	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Food Sales	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	2.0	4.0	4.2	0.5
253	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Food Sales	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.1	2.2	2.5	0.4
254	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Food Sales	ROB	17380	13%	2211	0.454	0.282	12	\$2,162.00	100%	50%	1	14%	17%	76%	35%	0.5	1.1	1.4	0.4
255	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Food Sales	ROB	9273	15%	1349	0.416	0.258	12	\$1,682.00	100%	50%	2	18%	53%	76%	31%	0.5	1.0	1.2	0.4
256	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Food Sales	ROB	27611	50%	13869	4.275	2.657	12	\$3,824.00	100%	50%	2	18%	53%	76%	51%	2.3	4.6	3.8	0.6
257	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Food Sales	ROB	18182	14%	2573	0.396	0.246	12	\$2,126.00	100%	50%	3	27%	24%	76%	38%	0.6	1.1	1.6	0.4
258	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Food Sales	ROB	19542	67%	13154	3.337	2.074	12	\$2,490.00	100%	50%	4	6%	45%	76%	53%	3.1	6.1	5.3	0.6
259	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Food Sales	ROB	10950	85%	9340	1.535	0.954	12	\$1,891.00	100%	50%	5	3%	16%	76%	52%	2.4	4.8	5.0	0.5
260	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Food Sales	ROB	4380	79%	3438	0.698	0.434	12	\$1,497.00	100%	50%	5	3%	16%	76%	47%	1.2	2.4	2.6	0.5
261	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Food Sales	ROB	56463	36%	20545	3.884	3.187	16	\$255.00	100%	50%	6	26%	61%	76%	57%	53.1	106.2	91.7	0.6
262	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Food Sales	ROB	47891	29%	13861	2.621	2.150	16	\$1,375.00	100%	50%	6	26%	61%	76%	55%	6.6	13.3	11.9	0.6
263	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	574	14%	81	0.053	0.000	15	\$153.28	100%	50%	1	18%	10%	76%	23%	0.4	0.9	1.1	0.4
264	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	574	19%	108	0.071	0.000	15	\$214.59	100%	50%	1	18%	10%	76%	22%	0.4	0.9	1.0	0.4
265	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	574	30%	175	0.115	0.000	15	\$398.52	100%	50%	1	18%	10%	76%	21%	0.4	0.7	1.0	0.4
266	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	644	9%	59	0.038	0.000	15	\$71.00	100%	50%	2	18%	10%	76%	32%	0.7	1.4	1.4	0.5
267	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	644	13%	86	0.056	0.000	15	\$109.23	100%	50%	2	18%	10%	76%	31%	0.7	1.3	1.4	0.5
268	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	644	24%	152	0.099	0.000	15	\$218.46	100%	50%	2	18%	10%	76%	29%	0.6	1.2	1.3	0.5
269	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Food Sales	Retro	698	7%	49	0.032	0.000	3	\$5.33	100%	50%	3	37%	50%	76%	54%	2.1	4.3	3.0	0.7
270	Commercial	Cooling	Air Side Economizer	Biz-Custom	Food Sales	Retro	578	20%	116	0.076	0.000	15	\$153.28	100%	50%	4	37%	25%	76%	30%	0.6	1.3	1.3	0.5
271	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Food Sales	Retro	606	20%	121	0.079	0.000	15	\$197.50	100%	50%	5	37%	20%	76%	26%	0.5	1.0	1.2	0.4
272	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	598	13%	75															

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282	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	3954	6%	221	0.048	0.058	15	\$135.00	100%	50%	1	31%	10%	76%	43%	1.2	2.4	2.3	0.5
283	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	3954	11%	444	0.097	0.118	15	\$445.76	100%	50%	1	31%	10%	76%	35%	0.7	1.5	1.6	0.5
284	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Sales	ROB	3954	15%	602	0.132	0.160	15	\$520.06	100%	50%	1	31%	10%	76%	37%	0.9	1.7	1.8	0.5
285	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	4420	6%	256	0.056	0.068	15	\$100.00	100%	50%	2	15%	10%	76%	48%	1.9	3.8	3.3	0.6
286	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	4420	11%	481	0.105	0.127	15	\$171.08	100%	50%	2	15%	10%	76%	49%	2.1	4.1	3.5	0.6
287	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	4563	6%	277	0.061	0.073	15	\$100.00	100%	50%	3	14%	10%	76%	49%	2.0	4.1	3.5	0.6
288	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	4563	11%	515	0.112	0.136	15	\$182.26	100%	50%	3	14%	10%	76%	49%	2.1	4.1	3.6	0.6
289	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	4737	6%	299	0.065	0.079	15	\$100.00	100%	50%	4	14%	10%	76%	49%	2.2	4.4	3.7	0.6
290	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Sales	ROB	4737	12%	554	0.121	0.147	15	\$201.80	100%	50%	4	14%	10%	76%	49%	2.0	4.0	3.5	0.6
291	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Food Sales	ROB	2920	3%	89	0.020	0.024	25	\$108.00	100%	50%	5	8%	20%	76%	32%	0.8	1.6	1.8	0.5
292	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Food Sales	ROB	2920	5%	141	0.031	0.037	25	\$108.00	100%	50%	5	8%	20%	76%	39%	1.3	2.6	2.5	0.5
293	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Food Sales	ROB	4787	4%	201	0.044	0.053	8	\$84.00	100%	50%	6	10%	20%	76%	47%	1.1	2.2	2.1	0.5
294	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Food Sales	ROB	599	64%	383	0.072	0.059	10	\$784.00	100%	50%	1	100%	0%	69%	16%	0.2	0.5	0.9	0.3
295	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Food Sales	Retro	599	2%	12	0.002	0.002	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.2	0.3	0.8	0.2
296	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Food Sales	ROB	3303	32%	1041	0.197	0.161	5	\$92.90	100%	50%	3	20%	85%	69%	49%	3.0	6.0	5.4	0.6
297	Commercial	HotWater	Faucet Aerator	Biz-Custom	Food Sales	Retro	647	22%	142	0.027	0.022	10	\$6.70	100%	50%	4	20%	85%	69%	51%	10.0	20.1	17.3	0.6
298	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Food Sales	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.8	3.5	3.5	0.5
299	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Food Sales	Retro	856	66%	567	0.013	0.072	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.4
300	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Food Sales	Retro	856	66%	567	0.013	0.072	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.4
301	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Food Sales	Retro	1589	60%	959	0.023	0.121	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3
302	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Food Sales	Retro	1742	66%	1154	0.027	0.146	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.1	2.1	2.9	0.4
303	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Food Sales	Retro	3235	60%	1953	0.046	0.247	6	\$756.00	100%	50%	5	14%	69%	76%	58%	0.6	1.2	1.8	0.3
304	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Food Sales	Retro	1589	60%	959	0.023	0.121	12	\$756.00	100%	50%	6	14%	69%	76%	47%	0.5	1.0	1.7	0.3
305	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Food Sales	Retro	306	68%	206	0.025	0.024	9	\$27.00	100%	50%	1	12%	45%	74%	61%	2.8	5.7	6.0	0.5
306	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Food Sales	Retro	220	74%	162	0.020	0.019	9	\$59.00	100%	50%	1	12%	45%	74%	56%	1.0	2.0	2.5	0.4
307	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Food Sales	Retro	197	45%	88	0.011	0.010	9	\$1.88	100%	50%	2	88%	45%	74%	66%	17.4	34.9	34.4	0.5
308	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Food Sales	Retro	445	50%	223	0.027	0.026	9	\$70.00	100%	50%	2	88%	45%	74%	57%	1.2	2.4	2.8	0.4
309	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Food Sales	Retro	883	61%	537	0.065	0.063	9	\$44.00	100%	50%	3	0%	45%	74%	63%	4.5	9.1	9.3	0.5
310	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Food Sales	Retro	4147	68%	2821	0.342	0.332	9	\$330.00	100%	50%	4	0%	45%	74%	62%	3.2	6.4	6.7	0.5
311	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Food Sales	Retro	164	100%	164	0.020	0.019	11	\$12.00	100%	50%	5	88%	0%	74%	64%	5.9	11.9	12.2	0.5
312	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Food Sales	Retro	959	30%	288	0.035	0.034	10	\$57.50	100%	50%	6	88%	11%	74%	59%	2.0	4.0	4.5	0.5
313	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Food Sales	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	88%	11%	74%	56%	1.6	3.2	3.6	0.4
314	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Food Sales	Retro	749	30%	225	0.027	0.026	15	\$132.52	100%	50%	6	88%	11%	74%	51%	0.9	1.8	2.3	0.4
315	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Food Sales	Retro	64	43%	28	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	34%	0.2	0.4	0.9	0.2
316	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Food Sales	Retro	385	61%	237	0.048	0.030	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.3	0.5	0.9	0.3
317	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Food Sales	Retro	9932	50%	4966	1.009	0.627	20	\$1586.00	100%	50%	2	16%	21%	76%	50%	2.3	4.6	4.6	0.5
318	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Food Sales	Retro	3819	83%	3170	0.644	0.400	10	\$483.00	100%	50%	3	1%	10%	76%	53%	3.0	6.0	5.7	0.5
319	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Food Sales	Retro	2984	25%	746	0.152	0.094	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	1.3	0.0	3.3	0.0
320	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Food Sales	ROB	3096	3%	85	0.017	0.011	15	\$59.00	100%	50%	5	0%	70%	76%	41%	0.9	1.8	2.1	0.4
321	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Food Sales	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	45%	10%	76%	20%	0.6	1.2	0.8	0.7
322	Commercial	Motors	Cogged V-Belt	Biz-Custom	Food Sales	Retro	19471	3%	604	0.000	0.137	15	\$383.81	100%	50%	1	50%	10%	76%	42%	0.8	1.7	2.2	0.4
323	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Food Sales	Retro	3805	34%	1290	0.000	0.293	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.1	8.3	8.8	0.5
324	Commercial	Motors	Power Drive Systems	Biz-Custom	Food Sales	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.1	8.3	8.8	0.5
325	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Food Sales	Retro	37735	31%	11547	0.000	2.628	15	\$527.50	100%	50%	2	100%	1%	76%	56%	11.8	23.6	24.2	0.5
326	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Food Sales	Retro	551	26%	110	0.022	0.014	6	\$0.00	100%	50%	1	4%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
327	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Food Sales	Retro	1398	10%	140	0.000	0.159	5	\$40.00	100%	50%	2	23%	20%	76%	50%	2.0	3.9	2.0	1.0
328	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Food Sales	Retro	1126	15%	169	0.000	0.121	8	\$70.00	100%	50%	2	23%	20%	76%	47%	1.4	2.9	2.1	0.7
329	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Food Sales	ROB	1621	23%	368	0.042	0.046	8	\$118.00	100%	50%	3	40%	25%	76%	50%	1.1	2.1	2.5	0.4
330	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Food Sales	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	40%	25%	76%	48%	1.0	1.9	2.1	0.4
331	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Food Sales	Retro	86783	18%	15778	3.205	1.992	15	\$480.00	100%	50%	3	40%	25%	76%	56%	20.1	40.2	36.0	0.6
332	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Food Sale	ROB	8940	25%	2265	0.400	0.259	20	\$750.00	100%	50%	4	40%	25%	76%	49%	1.9	3.9	4.5	0.4
333	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Food Sales	Retro	764	47%	358	0.073	0.045	15	\$82.00	100%	50%	4	40%	25%	76%	52%	2.7	5.3	5.2	0.5
334	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Food Sales	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	2%	10%	76%	48%	1.5	3.1	3.2	0.5
335	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Food Sales	Retro	412	50%	206	0.025	0.024	4	\$10.22	100%	50%	1	16%	50%	64%	46%	3.8	7.5	7.6	0.5
336	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Food Sales	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	1%	50%	64%	41%	2.8	5.7	6.2	0.5
337	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Food Sales	Retro	1112	25%	278	0.034	0.033	15	\$431.00	100%	50%	3	11%	25%	64%	19%	0.3	0.7	1.2	0.3
338	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Food Sales	Retro	831	50%	416	0.051	0.049	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.4	0.8	1.3	0.3
339	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Food Sales	Retro	813	20%	163	0.020	0.019	15	\$477.00	100%	50%	5	37%	25%	64%	12%	0.2	0.4	0.9	0.2
340	Commercial	Refrigeration																						

C&I Measure Summary: South Dakota

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
357	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Food Sales	Retro	115	74%	84	0.010	0.010	9	\$11.00	100%	50%	21	5%	35%	64%	43%	2.9	5.7	6.1	0.5
358	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Food Sales	Retro	11094	63%	6934	0.000	0.000	15	\$147.41	100%	50%	1	30%	20%	76%	56%	16.9	33.9	51.3	0.3
359	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Food Sales	Retro	19919	82%	16287	2.375	2.298	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.3	4.6	4.8	0.5
360	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Food Sales	Retro	21909	83%	18277	2.665	2.579	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.5	5.1	5.2	0.5
361	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Food Sales	Retro	23903	82%	19579	2.855	2.763	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	2.7	5.4	5.5	0.5
362	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Food Sales	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.4	2.8	3.2	0.4
363	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Food Sales	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%		2	0%	20%	76%	57%	0.0	0.0	0.0	0.0
364	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Food Sales	Retro	682	33%	228	0.000	0.000	10	\$187.50	100%	50%	3	100%	20%	76%	38%	0.8	0.6	2.5	0.2
365	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Food Sales	Retro	701	44%	311	0.047	0.000	10	\$341.21	100%	50%	4	100%	20%	76%	33%	1.5	0.6	3.7	0.3
366	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Food Sales	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	4.7	9.4	9.5	0.5
367	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Food Sales	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.2	2.4	2.8	0.4
368	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Food Sales	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	29%	0.6	1.2	1.7	0.3
369	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Food Sales	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	6.0	12.1	11.9	0.5
370	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Food Service	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	2.8	5.6	5.9	0.5
371	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Food Service	ROB	1583	21%	329	0.039	0.037	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.3	2.5	3.0	0.4
372	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Food Service	Retro	103919	35%	36372	4.295	4.095	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	12.6	25.1	25.5	0.5
373	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Food Service	Retro	103919	2%	1970	0.233	0.222	13	\$244.00	100%	50%	4	100%	5%	76%	54%	3.9	7.8	8.3	0.5
374	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Food Service	Retro	1480	50%	740	0.087	0.083	15	\$49.50	100%	50%	5	5%	20%	76%	55%	8.0	15.9	16.7	0.5
375	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Food Service	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	1.9	3.7	4.2	0.4
376	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Food Service	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.0	2.0	2.5	0.4
377	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Food Service	ROB	17380	13%	2211	0.454	0.524	12	\$2,162.00	100%	50%	1	14%	17%	76%	35%	0.6	1.2	1.4	0.4
378	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Food Service	ROB	9273	15%	1349	0.416	0.479	12	\$1,682.00	100%	50%	2	18%	53%	76%	31%	0.6	1.2	1.2	0.5
379	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Food Service	ROB	27611	50%	13869	4.275	4.929	12	\$3,824.00	100%	50%	2	18%	53%	76%	51%	2.7	5.5	3.8	0.7
380	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Food Service	ROB	18182	14%	2573	0.396	0.457	12	\$2,126.00	100%	50%	3	27%	24%	76%	38%	0.6	1.3	1.6	0.4
381	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Food Service	ROB	19542	67%	13154	3.337	3.848	12	\$2,490.00	100%	50%	4	6%	45%	76%	53%	3.6	7.1	5.3	0.7
382	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Food Service	ROB	10950	85%	9340	1.535	1.770	12	\$1,891.00	100%	50%	5	3%	16%	76%	52%	2.7	5.4	5.0	0.5
383	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Food Service	ROB	4380	79%	3438	0.698	0.805	12	\$1,497.00	100%	50%	5	3%	16%	76%	47%	1.4	2.8	2.6	0.5
384	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Food Service	ROB	56463	36%	20545	3.884	3.187	16	\$255.00	100%	50%	6	26%	61%	76%	57%	53.1	106.2	91.7	0.6
385	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Food Service	ROB	47891	29%	13861	2.621	2.150	16	\$1,375.00	100%	50%	6	26%	61%	76%	55%	6.6	13.3	11.9	0.6
386	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	641	14%	90	0.054	0.000	15	\$153.28	100%	50%	1	19%	10%	76%	25%	0.5	1.0	1.1	0.4
387	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	641	19%	121	0.073	0.001	15	\$214.59	100%	50%	1	19%	10%	76%	24%	0.5	0.9	1.1	0.4
388	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	641	30%	195	0.117	0.001	15	\$398.52	100%	50%	1	19%	10%	76%	22%	0.4	0.8	1.0	0.4
389	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Service	ROB	720	9%	65	0.039	0.000	15	\$71.00	100%	50%	2	19%	10%	76%	33%	0.7	1.5	1.5	0.5
390	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Service	ROB	720	13%	96	0.057	0.000	15	\$109.23	100%	50%	2	19%	10%	76%	33%	0.7	1.4	1.4	0.5
391	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Food Service	ROB	720	24%	169	0.101	0.001	15	\$218.46	100%	50%	2	19%	10%	76%	31%	0.6	1.3	1.3	0.5
392	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Food Service	Retro	780	7%	55	0.033	0.000	3	\$5.33	100%	50%	3	38%	50%	76%	55%	2.3	4.5	3.3	0.7
393	Commercial	Cooling	Air Side Economizer	Biz-Custom	Food Service	Retro	645	20%	129	0.077	0.001	15	\$153.28	100%	50%	4	38%	25%	76%	32%	0.7	1.4	1.4	0.5
394	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Food Service	Retro	676	20%	135	0.081	0.001	15	\$197.50	100%	50%	5	38%	20%	76%	28%	0.6	1.1	1.2	0.4
395	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	668	13%	84	0.050	0.000	15	\$115.00	100%	50%	6	25%	10%	76%	30%	0.6	1.2	1.3	0.5
396	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	668	22%	149	0.089	0.001	15	\$514.00	100%	50%	6	25%	10%	76%	16%	0.2	0.5	0.8	0.3
397	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	668	33%	223	0.133	0.001	15	\$630.50	100%	50%	6	25%	10%	76%	19%	0.3	0.6	0.9	0.3
398	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Food Service	ROB	2674	14%	379	0.227	0.002	11	\$175.00	100%	50%	7	25%	20%	76%	46%	1.4	2.8	2.3	0.6
399	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Food Service	ROB	862	15%	126	0.075	0.001	8	\$84.00	100%	50%	8	38%	20%	76%	42%	0.8	1.5	1.5	0.5
400	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Food Service	ROB	683	9%	62	0.037	0.000	23	\$126.00	100%	50%	9	0%	10%	76%	22%	0.5	1.0	1.2	0.4
401	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Food Service	ROB	343	23%	78	0.047	0.000	23	\$126.00	100%	50%	10	0%	10%	76%	26%	0.6	1.3	1.4	0.5
402	Commercial	Cooling	Window Film	Biz-Custom	Food Service	Retro	6000	4%	264	0.158	0.001	10	\$153.81	100%	50%	11	00%	25%	76%	44%	0.6	2.1	0.0	0.6
403	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Food Service	Retro	6000	6%	360	0.216	0.002	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.6	1.1	1.3	0.4
404	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Food Service	Retro	720	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
405	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	3542	6%	208	0.042	0.041	15	\$135.00	100%	50%	1	31%	10%	76%	42%	1.0	2.1	2.2	0.5
406	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	3542	12%	415	0.083	0.083	15	\$445.76	100%	50%	1	31%	10%	76%	34%	0.6	1.2	1.5	0.4
407	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Food Service	ROB	3542	16%	568	0.114	0.113	15	\$520.06	100%	50%	1	31%	10%	76%	36%	0.7	1.5	1.7	0.4
408	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	3942	6%	231	0.046	0.046	15	\$100.00	100%	50%	2	16%	10%	76%	47%	1.5	3.1	3.0	0.5
409	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	3942	11%	432	0.087	0.086	15	\$171.08	100%	50%	2	16%	10%	76%	48%	1.7	3.4	3.2	0.5
410	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4071	6%	251	0.050	0.050	15	\$100.00	100%	50%	3	15%	10%	76%	48%	1.7	3.3	3.2	0.5
411	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4071	11%	464	0.093	0.092	15	\$182.26	100%	50%	3	15%	10%	76%	48%	1.7	3.4	3.3	0.5
412	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4233	6%	272	0.055	0.054	15	\$100.00	100%	50%	4	15%	10%	76%	49%	1.8	3.6	3.4	0.5
413	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Food Service	ROB	4233	12%	501	0.101	0.100	15	\$201.80	100%	50%	4	15%	10%	76%	48%	1.7	3.3	3.2	0.5
414	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Food Service	ROB	2635	3%	83	0.017	0.016	25	\$108.00											

C&I Measure Summary: South Dakota

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
420	Commercial	HotWater	Faucet Aerator	Biz-Custom	Food Service	Retro	647	22%	142	0.027	0.022	10	\$6.70	100%	50%	4	20%	85%	69%	51%	10.0	20.1	17.3	0.6
421	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Food Service	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.8	3.5	3.5	0.5
422	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Food Service	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.3
423	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Food Service	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.3
424	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Food Service	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3
425	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Food Service	Retro	1742	66%	1154	0.000	0.157	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.0	2.1	2.9	0.4
426	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Food Service	Retro	3235	60%	1953	0.000	0.266	6	\$756.00	100%	50%	5	14%	69%	76%	58%	0.6	1.2	1.8	0.3
427	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Food Service	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	6	14%	69%	76%	47%	0.5	1.0	1.7	0.3
428	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Food Service	Retro	320	68%	216	0.033	0.027	9	\$27.00	100%	50%	1	6%	45%	74%	62%	3.2	6.3	6.3	0.5
429	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Food Service	Retro	230	74%	170	0.026	0.021	9	\$59.00	100%	50%	1	6%	45%	74%	56%	1.1	2.3	2.6	0.4
430	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Food Service	Retro	206	45%	92	0.014	0.012	9	\$1.88	100%	50%	2	94%	45%	74%	66%	19.3	38.7	36.1	0.5
431	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Food Service	Retro	467	50%	234	0.035	0.029	9	\$70.00	100%	50%	2	94%	45%	74%	57%	1.3	2.6	2.9	0.5
432	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Food Service	Retro	926	61%	563	0.085	0.071	9	\$44.00	100%	50%	3	0%	45%	74%	63%	5.0	10.1	9.8	0.5
433	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Food Service	Retro	4346	68%	2957	0.449	0.371	9	\$330.00	100%	50%	4	0%	45%	74%	62%	3.5	7.1	7.0	0.5
434	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Food Service	Retro	172	100%	172	0.026	0.022	11	\$12.00	100%	50%	5	94%	0%	74%	64%	6.6	13.2	12.7	0.5
435	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Food Service	Retro	1005	30%	301	0.046	0.038	10	\$57.50	100%	50%	6	94%	11%	74%	59%	2.2	4.5	4.6	0.5
436	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Food Service	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	94%	11%	74%	56%	1.7	3.5	3.8	0.5
437	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Food Service	Retro	785	30%	235	0.036	0.030	15	\$138.87	100%	50%	6	94%	11%	74%	51%	1.0	1.9	2.3	0.4
438	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Food Service	Retro	66	43%	28	0.004	0.004	5	\$32.50	100%	50%	7	1%	85%	74%	34%	0.2	0.4	0.9	0.2
439	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Food Service	Retro	385	61%	237	0.028	0.027	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.2	0.5	0.9	0.2
440	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Food Service	Retro	9932	50%	4966	0.586	0.559	20	\$1,586.00	100%	50%	2	25%	21%	76%	50%	2.0	4.0	4.6	0.4
441	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Food Service	Retro	1909	83%	1585	0.187	0.178	10	\$483.00	100%	50%	3	1%	10%	76%	50%	1.3	2.6	3.1	0.4
442	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Food Service	Retro	2984	25%	746	0.088	0.084	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	1.3	0.0	3.3	0.0
443	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Food Service	ROB	3096	3%	85	0.010	0.010	15	\$59.00	100%	50%	5	0%	70%	76%	41%	0.8	1.5	2.1	0.4
444	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Food Service	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	32%	10%	76%	20%	0.4	0.9	0.8	0.6
445	Commercial	Motors	Cogged V-Belt	Biz-Custom	Food Service	Retro	17237	3%	534	0.067	0.070	15	\$383.81	100%	50%	1	50%	10%	76%	41%	0.8	1.5	2.0	0.4
446	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Food Service	Retro	3805	34%	1290	0.161	0.168	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.3	8.5	8.8	0.5
447	Commercial	Motors	Power Drive Systems	Biz-Custom	Food Service	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.3	8.5	8.8	0.5
448	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Food Service	Retro	33406	31%	10222	1.276	1.332	15	\$527.50	100%	50%	2	100%	1%	76%	56%	10.8	21.5	21.4	0.5
449	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Food Service	Retro	551	26%	110	0.013	0.012	6	\$0.00	100%		1	5%	90%	76%	57%	#DIV/0!			0.0
450	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Food Service	Retro	1398	10%	140	0.000	0.142	5	\$40.00	100%	50%	2	31%	20%	76%	50%	1.8	3.6	2.0	0.9
451	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Food Service	Retro	1126	15%	169	0.000	0.108	8	\$70.00	100%	50%	2	31%	20%	76%	47%	1.3	2.7	2.1	0.6
452	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Food Service	ROB	1621	23%	368	0.042	0.041	8	\$118.00	100%	50%	3	31%	25%	76%	50%	1.0	2.1	2.5	0.4
453	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Food Service	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	31%	25%	76%	48%	0.8	1.7	2.1	0.4
454	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Food Service	Retro	86783	18%	15778	1.863	1.776	15	\$480.00	100%	50%	3	31%	25%	76%	56%	17.5	35.1	36.0	0.5
455	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Food Service	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	31%	25%	76%	49%	1.9	3.9	4.5	0.4
456	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Food Service	Retro	764	47%	358	0.042	0.040	15	\$82.00	100%	50%	4	31%	25%	76%	52%	2.3	4.7	5.2	0.4
457	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Food Service	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	1%	10%	76%	48%	1.3	2.7	3.2	0.4
458	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Food Service	Retro	88	50%	44	0.006	0.005	4	\$10.22	100%	50%	1	100%	50%	64%	41%	0.8	1.6	2.0	0.4
459	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Food Service	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	2.9	5.8	6.2	0.5
460	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Food Service	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	7%	25%	64%	19%	0.4	0.7	1.2	0.3
461	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Food Service	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.4	0.8	1.3	0.3
462	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Food Service	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	16%	25%	64%	12%	0.2	0.4	0.9	0.2
463	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Food Service	Retro	2884	55%	1586	0.222	0.174	15	\$304.59	100%	50%	6	6%	80%	64%	41%	2.9	5.7	6.1	0.5
464	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Food Service	Retro	2236	32%	716	0.100	0.079	15	\$155.00	100%	50%	7	6%	25%	64%	41%	2.5	5.1	5.5	0.5
465	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Food Service	Retro	2960	50%	1480	0.208	0.163	15	\$1,170.00	100%	50%	8	8%	25%	64%	29%	0.7	1.4	1.9	0.4
466	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Food Service	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	14%	25%	64%	37%	1.0	2.0	2.4	0.4
467	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Food Service	Retro	622	59%	368	0.052	0.040	12	\$127.00	100%	50%	10	4%	25%	64%	39%	1.4	2.7	3.1	0.4
468	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Food Service	Retro	2884	55%	1586	0.222	0.174	15	\$304.59	100%	50%	11	2%	80%	64%	41%	2.9	5.7	6.1	0.5
469	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Food Service	Retro	641	38%	242	0.034	0.027	10	\$101.60	100%	50%	12	2%	2%	64%	38%	1.0	2.0	2.4	0.4
470	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Food Service	ROB	2140	29%	629	0.088	0.069	12	\$1,238.50	100%	50%	13	13%	54%	64%	15%	0.2	0.5	1.0	0.2
471	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Food Service	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	13%	54%	64%	10%	0.1	0.2	0.7	0.2
472	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Food Service	Retro	1113	75%	832	0.117	0.092	12	\$200.00	100%	50%	14	5%	75%	64%	41%	2.0	3.9	4.3	0.5
473	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Food Service	Retro	2512	59%	1486	0.208	0.164	12	\$127.00	100%	50%	15	5%	25%	64%	45%	5.5	11.0	11.2	0.5
474	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Food Service	ROB	6374	20%	1275	0.179	0.140	12	\$1,650.50	100%	50%	16	4%	54%	64%	22%	0.4	0.7	1.2	0.3
475	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Food Service	ROB	4522	7%	305	0.043	0.034	12	\$1,520.50	100%	50%	16	4%	54%	64%	10%	0.1	0.2	0.7	0.1
476	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Food Service	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	95%	25%	64%	13%	0.5	0.9	0.8	0.6
477	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Food Service	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	95%	25%	64%	41%	1.0	2.1	2.5	0.4
478	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Food Service	ROB	6993	10%	721	0.101	0.079	10	\$222.00	100%	50%	19	5%	44%	64%					

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
503	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Health	ROB	18182	14%	2573	0.396	0.133	12	\$2,126.00	100%	50%	3	27%	24%	76%	38%	0.5	1.1	1.6	0.3	
504	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Health	ROB	19542	67%	13154	3.337	1.115	12	\$2,490.00	100%	50%	4	6%	45%	76%	53%	2.8	5.6	5.3	0.5	
505	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Health	ROB	10950	85%	9340	1.535	0.513	12	\$1,891.00	100%	50%	5	3%	16%	76%	52%	2.2	4.4	5.0	0.4	
506	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Health	ROB	4380	79%	3438	0.698	0.233	12	\$1,497.00	100%	50%	5	3%	16%	76%	47%	1.1	2.2	2.6	0.4	
507	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Health	ROB	56463	36%	20545	3.847	2.246	16	\$255.00	100%	50%	6	26%	61%	76%	57%	49.5	98.9	91.7	0.5	
508	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Health	ROB	47891	29%	13861	2.595	1.515	16	\$1,375.00	100%	50%	6	26%	61%	76%	55%	6.2	12.4	11.9	0.5	
509	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Health	ROB	812	14%	115	0.041	0.002	15	\$153.28	100%	50%	1	25%	10%	76%	30%	0.5	1.0	1.3	0.4	
510	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Health	ROB	812	19%	153	0.055	0.003	15	\$214.59	100%	50%	1	25%	10%	76%	29%	0.5	0.9	1.3	0.4	
511	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Health	ROB	812	30%	248	0.089	0.004	15	\$398.52	100%	50%	1	25%	10%	76%	26%	0.4	0.8	1.2	0.3	
512	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Health	ROB	912	9%	83	0.030	0.001	15	\$71.00	100%	50%	2	25%	10%	76%	37%	0.7	1.5	1.8	0.4	
513	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Health	ROB	912	13%	122	0.044	0.002	15	\$109.23	100%	50%	2	25%	10%	76%	36%	0.7	1.4	1.7	0.4	
514	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Health	ROB	912	24%	215	0.077	0.004	15	\$218.46	100%	50%	2	25%	10%	76%	34%	0.6	1.3	1.6	0.4	
515	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Health	Retro	988	7%	69	0.025	0.001	3	\$5.33	100%	50%	3	50%	50%	76%	55%	2.2	4.4	4.0	0.6	
516	Commercial	Cooling	Air Side Economizer	Biz-Custom	Health	Retro	818	20%	164	0.059	0.003	15	\$153.28	100%	50%	4	50%	25%	76%	36%	0.7	1.4	1.7	0.4	
517	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Health	Retro	857	20%	171	0.061	0.003	15	\$197.50	100%	50%	5	50%	20%	76%	33%	0.6	1.1	1.4	0.4	
518	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	847	13%	106	0.038	0.002	15	\$115.00	100%	50%	6	0%	10%	76%	33%	0.6	1.2	1.5	0.4	
519	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	847	22%	188	0.067	0.003	15	\$514.00	100%	50%	6	0%	10%	76%	19%	0.2	0.5	0.9	0.3	
520	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	847	33%	282	0.101	0.005	15	\$630.50	100%	50%	6	0%	10%	76%	21%	0.3	0.6	1.0	0.3	
521	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Health	ROB	3389	14%	480	0.172	0.008	11	\$175.00	100%	50%	7	0%	20%	76%	49%	1.4	2.8	2.8	0.5	
522	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Health	ROB	1093	15%	159	0.057	0.003	8	\$84.00	100%	50%	8	0%	20%	76%	45%	0.8	1.5	1.7	0.4	
523	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Health	ROB	866	9%	78	0.028	0.001	23	\$126.00	100%	50%	9	45%	10%	76%	26%	0.5	1.0	1.4	0.4	
524	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Health	ROB	435	23%	99	0.035	0.002	23	\$126.00	100%	50%	10	5%	10%	76%	31%	0.6	1.3	1.6	0.4	
525	Commercial	Cooling	Window Film	Biz-Custom	Health	Retro	6000	4%	264	0.095	0.004	10	\$153.81	100%	50%	11	100%	25%	76%	44%	0.4	1.6	0.0	0.4	
526	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Health	Retro	6000	6%	360	0.129	0.006	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.4	0.9	1.3	0.3	
527	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Health	Retro	912	0%	0	0.309	0.015	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0	0.0
528	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	4149	6%	249	0.030	0.053	15	\$135.00	100%	50%	1	0%	10%	76%	45%	1.1	2.3	2.5	0.5	
529	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	4149	12%	495	0.059	0.105	15	\$445.76	100%	50%	1	0%	10%	76%	36%	0.7	1.4	1.7	0.4	
530	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Health	ROB	4149	16%	679	0.081	0.144	15	\$520.06	100%	50%	1	0%	10%	76%	39%	0.8	1.6	1.9	0.4	
531	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4609	6%	271	0.032	0.057	15	\$100.00	100%	50%	2	11%	10%	76%	49%	1.7	3.3	3.4	0.5	
532	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4609	11%	507	0.061	0.107	15	\$171.08	100%	50%	2	11%	10%	76%	49%	1.8	3.7	3.7	0.5	
533	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4761	6%	295	0.035	0.062	15	\$100.00	100%	50%	3	11%	10%	76%	49%	1.8	3.6	3.7	0.5	
534	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4761	11%	545	0.065	0.115	15	\$182.26	100%	50%	3	11%	10%	76%	49%	1.8	3.7	3.7	0.5	
535	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4955	6%	320	0.038	0.068	15	\$100.00	100%	50%	4	11%	10%	76%	50%	2.0	3.9	4.0	0.5	
536	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Health	ROB	4955	12%	590	0.071	0.125	15	\$201.80	100%	50%	4	11%	10%	76%	49%	1.8	3.6	3.7	0.5	
537	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Health	ROB	3097	3%	98	0.012	0.021	25	\$108.00	100%	50%	5	0%	20%	76%	33%	0.8	1.5	1.9	0.4	
538	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Health	ROB	3097	6%	172	0.021	0.036	25	\$108.00	100%	50%	5	0%	20%	76%	43%	1.3	2.6	2.9	0.5	
539	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Health	ROB	5000	5%	259	0.031	0.055	8	\$84.00	100%	50%	6	0%	20%	76%	50%	1.2	2.4	2.5	0.5	
540	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Health	ROB	2205	64%	1412	0.264	0.154	10	\$784.00	100%	50%	1	100%	0%	69%	39%	0.8	1.6	1.9	0.4	
541	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Health	Retro	2205	2%	44	0.008	0.005	20	\$60.00	100%	50%	2	100%	80%	69%	23%	0.5	1.0	1.5	0.4	
542	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Health	ROB	3303	32%	1041	0.195	0.114	5	\$92.90	100%	50%	3	20%	85%	69%	49%	2.8	5.6	5.4	0.5	
543	Commercial	HotWater	Faucet Aerator	Biz-Custom	Health	Retro	647	22%	142	0.027	0.016	10	\$6.70	100%	50%	4	20%	85%	69%	51%	9.3	18.7	17.3	0.5	
544	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Health	ROB	2239	29%	660	0.124	0.072	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.6	3.3	3.5	0.5	
545	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Health	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.3	
546	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Health	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.3	
547	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Health	Retro	1589	60%	959	0.000	0.128	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3	
548	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Health	Retro	1742	66%	1154	0.000	0.154	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.0	2.1	2.9	0.4	
549	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Health	Retro	3235	60%	1953	0.000	0.261	6	\$756.00	100%	50%	5	14%	69%	76%	58%	0.6	1.2	1.8	0.3	
550	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Health	Retro	1589	60%	959	0.000	0.128	12	\$756.00	100%	50%	6	14%	69%	76%	47%	0.5	1.0	1.7	0.3	
551	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Health	Retro	349	68%	236	0.032	0.023	9	\$27.00	100%	50%	1	18%	45%	74%	62%	3.2	6.4	6.8	0.5	
552	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Health	Retro	251	74%	185	0.025	0.018	9	\$59.00	100%	50%	1	18%	45%	74%	56%	1.2	2.3	2.8	0.4	
553	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Health	Retro	225	45%	101	0.014	0.010	9	\$1.88	100%	50%	2	81%	45%	74%	66%	19.7	39.5	39.3	0.5	
554	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Health	Retro	509	50%	255	0.035	0.024	9	\$70.00	100%	50%	2	81%	45%	74%	57%	1.3	2.7	3.1	0.4	
555	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Health	Retro	1009	61%	613	0.084	0.059	9	\$44.00	100%	50%	3	0%	45%	74%	64%	5.1	10.3	10.6	0.5	
556	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Health	Retro	4737	68%	3223	0.443	0.309	9	\$330.00	100%	50%	4	0%	45%	74%	62%	3.6	7.2	7.6	0.5	
557	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Health	Retro	187	100%	187	0.026	0.018	11	\$12.00	100%	50%	5	181%	0%	74%	64%	6.7	13.5	13.8	0.5	
558	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Health	Retro	1095	30%	329	0.045	0.031	10	\$57.50	100%	50%	6	82%	11%	74%	60%	2.3	4.6	5.0	0.5	
559	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Health	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	82%	11%	74%	57%	1.8	3.6	4.1	0.4	
560	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Health	Retro	855	30%	257	0.035	0.025	15	\$151.3												

C&I Measure Summary: South Dakota

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
569	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Health	Retro	3805	34%	1290	0.212	0.096	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.1	8.3	8.8	0.5
570	Commercial	Motors	Power Drive Systems	Biz-Custom	Health	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.1	8.3	8.8	0.5
571	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Health	Retro	33406	31%	10222	1.684	0.763	15	\$527.50	100%	50%	2	100%	1%	76%	56%	10.4	20.9	21.4	0.5
572	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Health	Retro	551	26%	110	0.014	0.012	6	\$0.00	100%		1	3%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
573	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Health	Retro	1398	10%	140	0.000	0.136	5	\$40.00	100%	50%	2	16%	20%	76%	50%	1.7	3.5	2.0	0.9
574	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Health	Retro	1126	15%	169	0.000	0.104	8	\$70.00	100%	50%	2	16%	20%	76%	47%	1.3	2.6	2.1	0.6
575	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Health	ROB	1621	23%	368	0.042	0.040	8	\$118.00	100%	50%	3	47%	25%	76%	50%	1.0	2.1	2.5	0.4
576	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Health	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	47%	25%	76%	48%	0.8	1.7	2.1	0.4
577	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Health	Retro	86783	18%	15778	2.052	1.711	15	\$480.00	100%	50%	3	47%	25%	76%	56%	17.8	35.6	36.0	0.5
578	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Health	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	47%	25%	76%	49%	1.9	3.9	4.5	0.4
579	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Health	Retro	764	47%	358	0.047	0.039	15	\$82.00	100%	50%	4	47%	25%	76%	52%	2.4	4.7	5.2	0.5
580	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Health	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	4%	10%	76%	48%	1.4	2.7	3.2	0.4
581	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Health	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	9%	50%	64%	48%	#DIV/0!	0.0	0.0	0.0
582	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Health	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	3.0	5.9	6.2	0.5
583	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Health	Retro	1112	25%	278	0.043	0.032	15	\$431.00	100%	50%	3	6%	25%	64%	19%	0.4	0.7	1.2	0.3
584	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Health	Retro	831	50%	416	0.064	0.048	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.4	0.8	1.3	0.3
585	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Health	Retro	813	20%	163	0.025	0.019	15	\$477.00	100%	50%	5	20%	25%	64%	12%	0.2	0.4	0.9	0.2
586	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Health	Retro	2884	55%	1586	0.245	0.184	15	\$304.59	100%	50%	6	5%	80%	64%	41%	2.9	5.9	6.1	0.5
587	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Health	Retro	2236	32%	716	0.111	0.083	15	\$155.00	100%	50%	7	5%	25%	64%	41%	2.6	5.2	5.5	0.5
588	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Health	Retro	2960	50%	1480	0.229	0.172	15	\$1,170.00	100%	50%	8	7%	25%	64%	29%	0.7	1.4	1.9	0.4
589	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Health	Retro	631	67%	423	0.065	0.049	12	\$200.00	100%	50%	9	14%	25%	64%	37%	1.0	2.1	2.4	0.4
590	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Health	Retro	622	59%	368	0.057	0.043	12	\$127.00	100%	50%	10	4%	25%	64%	39%	1.4	2.8	3.1	0.4
591	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Health	Retro	2884	55%	1586	0.245	0.184	15	\$304.59	100%	50%	11	2%	80%	64%	41%	2.9	5.9	6.1	0.5
592	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Health	Retro	441	34%	149	0.023	0.017	10	\$90.40	100%	50%	12	2%	2%	64%	34%	0.7	1.4	1.8	0.4
593	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Health	ROB	2140	29%	629	0.097	0.073	12	\$1,238.50	100%	50%	13	14%	54%	64%	15%	0.2	0.5	1.0	0.3
594	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Health	ROB	1410	20%	281	0.043	0.033	12	\$1,210.50	100%	50%	13	14%	54%	64%	10%	0.1	0.2	0.7	0.2
595	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Health	Retro	1113	75%	832	0.129	0.097	12	\$200.00	100%	50%	14	5%	25%	64%	41%	2.0	4.0	4.3	0.5
596	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Health	Retro	2512	59%	1486	0.230	0.173	12	\$127.00	100%	50%	15	5%	25%	64%	45%	5.7	11.3	11.2	0.5
597	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Health	ROB	6374	20%	1275	0.197	0.148	12	\$1,650.50	100%	50%	16	5%	54%	64%	22%	0.4	0.7	1.2	0.3
598	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Health	ROB	4522	7%	305	0.047	0.035	12	\$1,520.50	100%	50%	16	5%	54%	64%	10%	0.1	0.2	0.7	0.1
599	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Health	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	91%	25%	64%	13%	0.5	1.0	0.8	0.6
600	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Health	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	91%	25%	64%	41%	1.1	2.2	2.5	0.4
601	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Health	ROB	6993	10%	721	0.112	0.084	10	\$222.00	100%	50%	19	6%	44%	64%	39%	1.4	2.7	3.1	0.4
602	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Health	ROB	1278	12%	153	0.024	0.018	14	\$500.00	100%	50%	20	3%	30%	64%	12%	0.2	0.3	0.8	0.2
603	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Health	Retro	115	74%	84	0.013	0.010	9	\$11.00	100%	50%	21	8%	35%	64%	43%	3.0	6.0	6.1	0.5
604	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Health	Retro	9151	63%	5719	0.000	0.000	15	\$147.41	100%	50%	1	22%	35%	76%	56%	13.9	27.8	42.4	0.3
605	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Health	Retro	19919	82%	16287	2.111	1.873	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.2	4.3	4.8	0.5
606	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Health	Retro	21909	83%	18277	2.369	2.102	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.4	4.8	5.2	0.5
607	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Health	Retro	23903	82%	19579	2.537	2.252	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	2.5	5.1	5.5	0.5
608	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Health	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.4	2.8	3.2	0.4
609	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Health	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	2	85%	20%	76%	57%	0.0	0.0	0.0	0.0	
610	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Health	Retro	827	27%	226	0.000	0.000	10	\$187.50	100%	50%	3	100%	35%	76%	38%	1.5	0.6	4.0	0.2
611	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Health	Retro	0	0%	0	0.000	0.000	10	\$0.00	100%	0%	4	100%	35%	76%	57%	#DIV/0!	0.0	0.0	0.0
612	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Health	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	4.6	9.2	9.5	0.5
613	Commercial	WholeBldg	WholeBldg - Com RET	Biz-NC/Retrofit	Health	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.2	2.4	2.8	0.4
614	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Health	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	29%	0.6	1.1	1.7	0.3
615	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Health	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	5.9	11.8	11.9	0.5
616	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Lodging	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	2.9	5.7	5.9	0.5
617	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Lodging	ROB	1583	21%	329	0.038	0.042	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.3	2.6	3.0	0.4
618	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Lodging	Retro	103919	35%	36372	4.205	4.612	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	12.9	25.7	25.5	0.5
619	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Lodging	Retro	103919	2%	1970	0.228	0.250	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.0	8.0	8.3	0.5
620	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Lodging	Retro	1480	50%	740	0.086	0.094	15	\$49.50	100%	50%	5	5%	20%	76%	55%	8.2	16.3	16.7	0.5
621	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Lodging	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	1.9	3.8	4.2	0.5
622	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Lodging	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.0	2.1	2.5	0.4
623	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Lodging	ROB	17380	13%	2211	0.454	0.141	12	\$2,162.00	100%	50%	1	14%	17%	76%	35%	0.5	1.0	1.4	0.3
624	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Lodging	ROB	9273	15%	1349	0.416	0.129	12	\$1,682.00	100%	50%	2	18%	53%	76%	31%	0.5	0.9	1.2	0.4
625	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Lodging	ROB	27611	50%	13869	4.275	1.326	12	\$3,824.00	100%	50%	2	18%	53%	76%	51%	2.1	4.1	3.8	0.5
626	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Lodging	ROB	18182	14%	2573	0.396	0.123	12	\$2,126.00	100%	50%	3	27%	24%	76%	38%	0.5	1.1	1.6	0.3
627	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Lodging	ROB	19542	67%	13154	3.337	1.035	12	\$2,490.00	100%	50%	4	6%	45%	76%	53%	2.8	5.5	5.3	0.5
628	Commercial	Cooking	Insulated																					

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
641	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	752	13%	94	0.036	0.002	15	\$115.00	100%	50%	6	0%	10%	76%	32%	0.5	1.1	1.4	0.4
642	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	752	22%	167	0.064	0.004	15	\$514.00	100%	50%	6	0%	10%	76%	18%	0.2	0.4	0.9	0.3
643	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	752	33%	251	0.096	0.006	15	\$630.50	100%	50%	6	0%	10%	76%	20%	0.3	0.5	0.9	0.3
644	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Lodging	ROB	3006	14%	426	0.163	0.010	11	\$175.00	100%	50%	7	0%	20%	76%	48%	1.3	2.6	2.6	0.5
645	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Lodging	ROB	970	15%	141	0.054	0.003	8	\$84.00	100%	50%	8	15%	20%	76%	43%	0.7	1.4	1.6	0.4
646	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Lodging	ROB	768	9%	69	0.026	0.002	23	\$126.00	100%	50%	9	41%	10%	76%	24%	0.5	0.9	1.3	0.4
647	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Lodging	ROB	386	23%	88	0.034	0.002	23	\$126.00	100%	50%	10	5%	10%	76%	29%	0.6	1.2	1.5	0.4
648	Commercial	Cooling	Window Film	Biz-Custom	Lodging	Retro	6000	4%	264	0.101	0.006	10	\$153.81	100%	50%	11	100%	25%	76%	44%	0.5	1.7	0.0	0.5
649	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Lodging	Retro	6000	6%	360	0.138	0.008	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.5	0.9	1.3	0.4
650	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Lodging	Retro	809	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
651	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	4287	6%	248	0.032	0.053	15	\$135.00	100%	50%	1	0%	10%	76%	45%	1.1	2.3	2.5	0.5
652	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	4287	12%	495	0.064	0.106	15	\$445.76	100%	50%	1	0%	10%	76%	36%	0.7	1.4	1.7	0.4
653	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Lodging	ROB	4287	16%	675	0.087	0.145	15	\$520.06	100%	50%	1	0%	10%	76%	39%	0.8	1.6	1.9	0.4
654	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	4778	6%	279	0.036	0.060	15	\$100.00	100%	50%	2	9%	10%	76%	49%	1.7	3.5	3.5	0.5
655	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	4778	11%	523	0.068	0.112	15	\$171.08	100%	50%	2	9%	10%	76%	49%	1.9	3.8	3.8	0.5
656	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	4934	6%	302	0.039	0.065	15	\$100.00	100%	50%	3	9%	10%	76%	49%	1.9	3.8	3.8	0.5
657	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	4934	11%	560	0.072	0.121	15	\$182.26	100%	50%	3	9%	10%	76%	49%	1.9	3.9	3.8	0.5
658	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5128	6%	327	0.042	0.070	15	\$100.00	100%	50%	4	9%	10%	76%	50%	2.1	4.1	4.0	0.5
659	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Lodging	ROB	5128	12%	605	0.078	0.130	15	\$201.80	100%	50%	4	9%	10%	76%	49%	1.9	3.8	3.7	0.5
660	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Lodging	ROB	3181	3%	99	0.013	0.021	25	\$108.00	100%	50%	5	15%	20%	76%	33%	0.8	1.5	1.9	0.4
661	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Lodging	ROB	3181	5%	164	0.021	0.035	25	\$108.00	100%	50%	5	15%	20%	76%	42%	1.3	2.6	2.8	0.5
662	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Lodging	ROB	5180	5%	241	0.031	0.052	8	\$84.00	100%	50%	6	15%	20%	76%	49%	1.1	2.3	2.4	0.5
663	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Lodging	ROB	1132	64%	725	0.051	0.140	10	\$784.00	100%	50%	1	100%	29%	69%	26%	0.4	0.8	1.2	0.3
664	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Lodging	Retro	1132	2%	23	0.002	0.004	20	\$60.00	100%	50%	2	100%	80%	69%	14%	0.3	0.5	1.0	0.3
665	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Lodging	ROB	3303	32%	1041	0.073	0.201	5	\$92.90	100%	50%	3	20%	85%	69%	49%	2.7	5.3	5.4	0.5
666	Commercial	HotWater	Faucet Aerator	Biz-Custom	Lodging	Retro	647	22%	142	0.010	0.028	10	\$6.70	100%	50%	4	20%	85%	69%	51%	9.0	18.0	17.3	0.5
667	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Lodging	ROB	2239	29%	660	0.047	0.128	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.6	3.2	3.5	0.5
668	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Lodging	Retro	856	66%	567	0.000	0.081	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.4
669	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Lodging	Retro	856	66%	567	0.000	0.081	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.4
670	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Lodging	Retro	1589	60%	959	0.000	0.137	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3
671	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Lodging	Retro	1742	66%	1154	0.000	0.164	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.1	2.1	2.9	0.4
672	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Lodging	Retro	3235	60%	1953	0.000	0.278	6	\$756.00	100%	50%	5	14%	69%	76%	58%	0.6	1.2	1.8	0.3
673	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Lodging	Retro	1589	60%	959	0.000	0.137	12	\$756.00	100%	50%	6	14%	69%	76%	47%	0.5	1.0	1.7	0.3
674	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Lodging	Retro	356	68%	241	0.023	0.027	8	\$27.00	100%	50%	1	53%	45%	74%	62%	2.9	5.8	6.3	0.5
675	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Lodging	Retro	256	74%	189	0.018	0.021	8	\$59.00	100%	50%	1	53%	45%	74%	57%	1.0	2.1	2.6	0.4
676	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Lodging	Retro	259	45%	103	0.010	0.012	8	\$1.88	100%	50%	2	46%	45%	74%	66%	17.6	35.3	36.3	0.5
677	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Lodging	Retro	519	50%	260	0.025	0.029	8	\$70.00	100%	50%	2	46%	45%	74%	57%	1.2	2.4	2.9	0.4
678	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Lodging	Retro	1029	61%	626	0.060	0.070	8	\$44.00	100%	50%	3	1%	45%	74%	64%	4.6	9.2	9.8	0.5
679	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Lodging	Retro	4832	68%	3288	0.317	0.369	8	\$330.00	100%	50%	4	0%	45%	74%	63%	3.2	6.4	7.0	0.5
680	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Lodging	Retro	191	100%	191	0.018	0.021	11	\$12.00	100%	50%	5	46%	0%	74%	64%	6.6	13.2	14.1	0.5
681	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Lodging	Retro	1117	30%	335	0.032	0.038	10	\$57.50	100%	50%	6	47%	11%	74%	60%	2.2	4.5	5.1	0.4
682	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Lodging	Retro	4	49%	2	0.000	0.000	15	\$0.59	100%	50%	6	47%	11%	74%	57%	1.8	3.5	4.2	0.4
683	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Lodging	Retro	872	30%	262	0.025	0.029	15	\$154.42	100%	50%	6	47%	11%	74%	51%	0.9	1.8	2.3	0.4
684	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Lodging	Retro	67	43%	29	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	35%	0.2	0.4	0.9	0.2
685	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Lodging	Retro	385	61%	237	0.027	0.030	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.2	0.5	0.9	0.2
686	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Lodging	Retro	9932	50%	4966	0.574	0.630	20	\$1,586.00	100%	50%	2	31%	21%	76%	50%	2.0	4.1	4.6	0.4
687	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Lodging	Retro	262	83%	217	0.025	0.028	10	\$483.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.9	0.2
688	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Lodging	Retro	2984	25%	746	0.086	0.095	10	\$20,309.70	100%	50%	4	2%	10%	76%	15%	1.3	0.0	3.3	0.0
689	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Lodging	ROB	3096	3%	85	0.010	0.011	15	\$59.00	100%	50%	5	0%	70%	76%	41%	0.8	1.6	2.1	0.4
690	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Lodging	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	38%	10%	76%	20%	0.5	0.9	0.8	0.6
691	Commercial	Motors	Cogged V-Belt	Biz-Custom	Lodging	Retro	29207	3%	905	0.117	0.100	15	\$383.81	100%	50%	1	50%	10%	76%	47%	1.3	2.6	3.0	0.4
692	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Lodging	Retro	3805	34%	1290	0.166	0.143	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.2	8.3	8.8	0.5
693	Commercial	Motors	Power Drive Systems	Biz-Custom	Lodging	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.2	8.3	8.8	0.5
694	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Lodging	Retro	56602	31%	17320	2.234	1.916	15	\$527.50	100%	50%	2	100%	1%	76%	56%	17.8	35.6	36.0	0.5
695	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Lodging	Retro	551	26%	110	0.013	0.014	6	\$0.00	100%		1	9%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
696	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Lodging	Retro	1398	10%	140	0.000	0.160	5	\$40.00	100%	50%	2	53%	20%	76%	50%	2.0	3.9	2.0	1.0
697	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Lodging	Retro	1126	15%	169	0.000	0.121	8	\$70.00	100%	50%	2	53%	20%	76%	47%	1.4	2.9	2.1	0.7
698	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Lodging	ROB	1621	23%	368	0.042	0.047	8	\$118.00	100%	50%	3	8%	25%	76%	50%	1.1	2.1	2.5	0.4

C&I Measure Summary: South Dakota

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
717	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Lodging	ROB	1410	20%	281	0.038	0.032	12	\$1,210.50	100%	50%	13	13%	54%	64%	10%	0.1	0.2	0.7	0.2
718	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Lodging	Retro	1113	75%	832	0.114	0.094	12	\$200.00	100%	50%	14	5%	25%	64%	41%	2.0	3.9	4.3	0.5
719	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Lodging	Retro	2512	59%	1486	0.203	0.168	12	\$127.00	100%	50%	15	5%	25%	64%	45%	5.5	11.0	11.2	0.5
720	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Lodging	ROB	6374	20%	1275	0.174	0.144	12	\$1,650.50	100%	50%	16	4%	54%	64%	22%	0.4	0.7	1.2	0.3
721	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Lodging	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	4%	54%	64%	10%	0.1	0.2	0.7	0.1
722	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Lodging	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	87%	25%	64%	13%	0.5	0.9	0.8	0.6
723	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Lodging	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	87%	25%	64%	41%	1.0	2.1	2.5	0.4
724	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Lodging	ROB	6993	10%	721	0.099	0.081	10	\$222.00	100%	50%	19	9%	44%	64%	39%	1.3	2.7	3.1	0.4
725	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Lodging	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	5%	30%	64%	12%	0.2	0.3	0.8	0.2
726	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Lodging	Retro	115	74%	84	0.012	0.010	9	\$11.00	100%	50%	21	8%	35%	64%	43%	2.9	5.8	6.1	0.5
727	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Lodging	Retro	21990	63%	13744	0.000	0.000	15	\$147.41	100%	50%	1	35%	25%	76%	57%	33.4	66.8	101.3	0.3
728	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Lodging	Retro	19919	82%	16287	2.120	2.070	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.2	4.4	4.8	0.5
729	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Lodging	Retro	21909	83%	18277	2.379	2.323	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.4	4.9	5.2	0.5
730	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Lodging	Retro	23903	82%	19579	2.548	2.489	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	2.6	5.2	5.5	0.5
731	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Lodging	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	15%	20%	76%	48%	1.4	2.8	3.2	0.4
732	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Lodging	Retro	5999	19%	1157	0.173	0.133	5	\$260.00	100%	50%	2	0%	20%	76%	52%	1.1	2.1	2.4	0.4
733	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Lodging	Retro	733	36%	261	0.000	0.000	10	\$187.50	100%	50%	3	100%	25%	76%	41%	0.9	0.7	2.7	0.2
734	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Lodging	Retro	0	0%	0	0.000	0.000	10	\$0.00	100%	0%	4	100%	25%	76%	57%	#DIV/0!	0.0	0.0	0.0
735	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Lodging	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	4.7	9.4	9.5	0.5
736	Commercial	WholeBldg	WholeBlg - Com RET	Biz-NC/Retrofit	Lodging	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.2	2.4	2.8	0.4
737	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Lodging	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	29%	0.6	1.2	1.7	0.3
738	Commercial	WholeBldg_NC	WholeBlg - Com NC	Biz-NC/Retrofit	Lodging	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	6.0	12.0	11.9	0.5
739	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Retail	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	2.8	5.5	5.9	0.5
740	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Retail	ROB	1583	21%	329	0.036	0.037	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.2	2.5	3.0	0.4
741	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Retail	Retro	103919	35%	36372	3.988	4.094	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	12.5	24.9	25.5	0.5
742	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Retail	Retro	103919	2%	1970	0.216	0.222	13	\$244.00	100%	50%	4	100%	5%	76%	54%	3.9	7.7	8.3	0.5
743	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Retail	Retro	1480	50%	740	0.081	0.083	15	\$49.50	100%	50%	5	5%	20%	76%	55%	7.9	15.8	16.7	0.5
744	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Retail	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	1.9	3.7	4.2	0.4
745	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Retail	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.0	2.0	2.5	0.4
746	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Retail	ROB	11904	13%	1514	0.454	0.198	12	\$2,162.00	100%	50%	1	14%	17%	76%	29%	0.4	0.8	1.1	0.4
747	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Retail	ROB	6351	15%	924	0.416	0.181	12	\$1,682.00	100%	50%	2	18%	53%	76%	24%	0.4	0.8	1.0	0.4
748	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Retail	ROB	18912	50%	9499	4.275	1.863	12	\$3,824.00	100%	50%	2	18%	53%	76%	48%	1.8	3.7	2.8	0.7
749	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Retail	ROB	12454	14%	1762	0.396	0.173	12	\$2,126.00	100%	50%	3	27%	24%	76%	32%	0.4	0.9	1.3	0.3
750	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Retail	ROB	13385	67%	9010	3.337	1.454	12	\$2,490.00	100%	50%	4	6%	45%	76%	51%	2.4	4.8	3.8	0.6
751	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Retail	ROB	7500	85%	6398	1.535	0.669	12	\$1,891.00	100%	50%	5	3%	16%	76%	50%	1.8	3.6	3.6	0.5
752	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Retail	ROB	3000	79%	2355	0.698	0.304	12	\$1,497.00	100%	50%	5	3%	16%	76%	42%	0.9	1.9	1.9	0.5
753	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Retail	ROB	41082	34%	14133	2.672	2.193	16	\$255.00	100%	50%	6	26%	61%	76%	57%	36.5	73.1	63.3	0.6
754	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Retail	ROB	35485	26%	9319	1.762	1.446	16	\$1,375.00	100%	50%	6	26%	61%	76%	54%	4.5	8.9	8.2	0.5
755	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Retail	ROB	402	14%	57	0.030	0.000	15	\$153.28	100%	50%	1	15%	10%	76%	19%	0.3	0.6	0.9	0.3
756	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Retail	ROB	402	19%	76	0.041	0.001	15	\$214.59	100%	50%	1	15%	10%	76%	19%	0.3	0.5	0.9	0.3
757	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Retail	ROB	402	30%	122	0.065	0.001	15	\$398.52	100%	50%	1	15%	10%	76%	17%	0.2	0.5	0.8	0.3
758	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Retail	ROB	451	9%	41	0.022	0.000	15	\$71.00	100%	50%	2	15%	10%	76%	25%	0.4	0.9	1.1	0.4
759	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Retail	ROB	451	13%	60	0.032	0.000	15	\$109.23	100%	50%	2	15%	10%	76%	24%	0.4	0.8	1.1	0.4
760	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Retail	ROB	451	24%	106	0.057	0.001	15	\$218.46	100%	50%	2	15%	10%	76%	22%	0.4	0.7	1.0	0.4
761	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Retail	Retro	489	7%	34	0.018	0.000	3	\$5.33	100%	50%	3	29%	50%	76%	53%	1.3	2.7	2.2	0.6
762	Commercial	Cooling	Air Side Economizer	Biz-Custom	Retail	Retro	405	20%	81	0.043	0.001	15	\$153.28	100%	50%	4	29%	25%	76%	23%	0.4	0.8	1.1	0.4
763	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Retail	Retro	424	20%	85	0.045	0.001	15	\$197.50	100%	50%	5	29%	20%	76%	21%	0.3	0.7	1.0	0.3
764	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	419	13%	52	0.028	0.000	15	\$115.00	100%	50%	6	24%	10%	76%	21%	0.3	0.7	1.0	0.3
765	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	419	22%	93	0.050	0.001	15	\$514.00	100%	50%	6	24%	10%	76%	15%	0.1	0.3	0.7	0.2
766	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	419	33%	140	0.075	0.001	15	\$630.50	100%	50%	6	24%	10%	76%	15%	0.2	0.3	0.7	0.2
767	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Retail	ROB	1676	14%	237	0.127	0.002	11	\$175.00	100%	50%	7	24%	20%	76%	40%	0.8	1.7	1.7	0.5
768	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Retail	ROB	541	15%	79	0.042	0.001	8	\$84.00	100%	50%	8	18%	20%	76%	34%	0.5	0.9	1.1	0.4
769	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Retail	ROB	428	9%	39	0.021	0.000	23	\$126.00	100%	50%	9	26%	10%	76%	17%	0.3	0.6	0.9	0.3
770	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Retail	ROB	215	23%	49	0.026	0.000	23	\$126.00	100%	50%	10	3%	10%	76%	20%	0.4	0.8	1.1	0.4
771	Commercial	Cooling	Window Film	Biz-Custom	Retail	Retro	6000	4%	264	0.141	0.002	10	\$153.81	100%	50%	11	100%	25%	76%	44%	0.5	2.0	0.0	0.5
772	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Retail	Retro	6000	6%	360	0.193	0.003	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.5	1.0	1.3	0.4
773	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Retail	Retro	451	0%	0	0.159	0.002	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
774	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	3279	5%	177	0.032	0.038	15	\$135.00	100%	50%	1	28%	10%	76%	39%	0.9	1.7	1.9	0.5
775	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Retail	ROB	3279	11%	358	0.064	0.077	15												

C&I Measure Summary: South Dakota

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
780	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	3793	11%	425	0.076	0.091	15	\$182.26	100%	50%	3	12%	10%	76%	47%	1.5	3.1	3.0	0.5
781	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	3934	6%	246	0.044	0.053	15	\$100.00	100%	50%	4	12%	10%	76%	48%	1.6	3.3	3.2	0.5
782	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Retail	ROB	3934	12%	456	0.081	0.098	15	\$201.80	100%	50%	4	12%	10%	76%	47%	1.5	3.0	2.9	0.5
783	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Retail	ROB	2411	3%	72	0.013	0.016	25	\$108.00	100%	50%	5	9%	20%	76%	28%	0.6	1.2	1.5	0.4
784	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Retail	ROB	2411	5%	109	0.019	0.023	25	\$108.00	100%	50%	5	9%	20%	76%	35%	0.9	1.8	2.0	0.4
785	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Retail	ROB	3978	4%	150	0.027	0.032	8	\$84.00	100%	50%	6	10%	20%	76%	44%	0.7	1.5	1.7	0.4
786	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Retail	ROB	1755	64%	1124	0.212	0.174	10	\$784.00	100%	50%	1	100%	23%	69%	35%	0.7	1.4	1.6	0.4
787	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Retail	ROB	1755	2%	35	0.007	0.005	20	\$60.00	100%	50%	2	100%	80%	69%	18%	0.4	0.9	1.3	0.3
788	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Retail	ROB	2262	32%	713	0.135	0.111	5	\$92.90	100%	50%	3	20%	85%	69%	48%	2.1	4.1	3.8	0.5
789	Commercial	HotWater	Faucet Aerator	Biz-Custom	Retail	Retro	647	22%	142	0.027	0.022	10	\$6.70	100%	50%	4	20%	85%	69%	51%	10.0	20.1	17.3	0.6
790	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Retail	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.8	3.5	3.5	0.5
791	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Retail	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.3
792	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Retail	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.3
793	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Retail	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3
794	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Retail	Retro	1742	66%	1154	0.000	0.157	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.0	2.1	2.9	0.4
795	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Retail	Retro	3235	60%	1953	0.000	0.266	6	\$756.00	100%	50%	5	14%	69%	76%	58%	0.6	1.2	1.8	0.3
796	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Retail	Retro	1589	60%	959	0.000	0.131	12	\$756.00	100%	50%	6	14%	69%	76%	47%	0.5	1.0	1.7	0.3
797	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Retail	Retro	238	68%	161	0.018	0.016	12	\$27.00	100%	50%	1	22%	45%	74%	60%	2.7	5.3	5.9	0.4
798	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Retail	Retro	171	74%	126	0.014	0.013	12	\$59.00	100%	50%	1	22%	45%	74%	53%	1.0	1.9	2.5	0.4
799	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Retail	Retro	153	45%	68	0.008	0.007	12	\$1.88	100%	50%	2	76%	45%	74%	65%	16.3	32.6	33.8	0.5
800	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Retail	Retro	346	50%	173	0.020	0.018	12	\$70.00	100%	50%	2	76%	45%	74%	55%	1.1	2.2	2.8	0.4
801	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Retail	Retro	687	61%	417	0.048	0.042	12	\$44.00	100%	50%	3	1%	45%	74%	62%	4.2	8.5	9.2	0.5
802	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Retail	Retro	3225	68%	2194	0.251	0.222	12	\$330.00	100%	50%	4	1%	45%	74%	61%	3.0	6.0	6.6	0.5
803	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Retail	Retro	128	100%	128	0.015	0.013	11	\$12.00	100%	50%	5	76%	0%	74%	63%	4.5	8.9	9.6	0.5
804	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Retail	Retro	746	30%	224	0.026	0.023	10	\$57.50	100%	50%	6	78%	11%	74%	58%	1.5	3.0	3.6	0.4
805	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiF)	Biz-Custom	Retail	Retro	3	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	78%	11%	74%	54%	1.2	2.4	2.9	0.4
806	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Retail	Retro	582	30%	175	0.020	0.018	15	\$103.05	100%	50%	6	78%	11%	74%	51%	0.9	1.8	2.3	0.4
807	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Retail	Retro	67	43%	29	0.003	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	35%	0.2	0.4	0.9	0.2
808	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Retail	Retro	385	61%	237	0.026	0.027	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.2	0.5	0.9	0.2
809	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Retail	Retro	9932	50%	4966	0.545	0.559	20	\$1586.00	100%	50%	2	0%	21%	76%	50%	2.0	4.0	4.6	0.4
810	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Retail	Retro	1909	83%	1585	0.174	0.178	10	\$483.00	100%	50%	3	1%	10%	76%	50%	1.3	2.6	3.1	0.4
811	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Retail	Retro	2984	25%	746	0.082	0.084	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	1.3	0.0	3.3	0.0
812	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Retail	ROB	3096	3%	85	0.009	0.010	15	\$59.00	100%	50%	5	3%	70%	76%	41%	0.8	1.5	2.1	0.4
813	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Retail	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	42%	10%	76%	20%	0.4	0.9	0.8	0.5
814	Commercial	Motors	Cogged V-Belt	Biz-Custom	Retail	Retro	14670	3%	455	0.076	0.044	15	\$383.81	100%	50%	1	50%	10%	76%	38%	0.7	1.3	1.8	0.4
815	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Retail	Retro	3805	34%	1290	0.216	0.125	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.3	8.6	8.8	0.5
816	Commercial	Motors	Power Drive Systems	Biz-Custom	Retail	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.3	8.6	8.8	0.5
817	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Retail	Retro	28430	31%	8700	1.460	0.845	15	\$527.50	100%	50%	2	100%	1%	76%	56%	9.2	18.5	18.3	0.5
818	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Retail	Retro	551	26%	110	0.012	0.012	6	\$0.00	100%	50%	1	2%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
819	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Retail	Retro	1398	10%	140	0.000	0.142	5	\$40.00	100%	50%	2	14%	20%	76%	50%	1.8	3.6	2.0	0.9
820	Commercial	PlugLoads_Office	Plug Load, Occupancy Sensor	Biz-Custom	Retail	Retro	1126	15%	169	0.000	0.108	8	\$70.00	100%	50%	2	14%	20%	76%	47%	1.3	2.7	2.1	0.6
821	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Retail	ROB	1621	23%	368	0.042	0.041	8	\$118.00	100%	50%	3	50%	25%	76%	50%	1.0	2.1	2.5	0.4
822	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Retail	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	50%	25%	76%	48%	0.8	1.7	2.1	0.4
823	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Retail	Retro	86783	18%	15778	1.730	1.776	15	\$480.00	100%	50%	3	50%	25%	76%	56%	17.4	34.8	36.0	0.5
824	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Retail	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	50%	25%	76%	49%	1.9	3.9	4.5	0.4
825	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Retail	Retro	764	47%	358	0.039	0.040	15	\$82.00	100%	50%	4	50%	25%	76%	52%	2.3	4.6	5.2	0.4
826	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Retail	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	4%	10%	76%	48%	1.3	2.6	3.2	0.4
827	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Retail	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	7%	50%	64%	48%	#DIV/0!	0.0	0.0	0.0
828	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Retail	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	2.9	5.8	6.2	0.5
829	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Retail	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	4%	25%	64%	19%	0.4	0.7	1.2	0.3
830	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Retail	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.4	0.8	1.3	0.3
831	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Retail	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	15%	25%	64%	12%	0.2	0.4	0.9	0.2
832	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Retail	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	4%	80%	64%	41%	2.9	5.7	6.1	0.5
833	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Retail	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	4%	25%	64%	41%	2.5	5.1	5.5	0.5
834	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Retail	Retro	2960	50%	1480	0.165	0.165	15	\$1,170.00	100%	50%	8	6%	25%	64%	29%	0.7	1.4	1.9	0.4
835	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Retail	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	17%	25%	64%	37%	1.0	2.0	2.4	0.4
836	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Retail	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	64%	39%	1.4	2.7	3.1	0.4
837	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Retail	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	3%	80%	64%	41%	2.9	5.7	6.1	0.5
838	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Retail	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	3%	2%	64%	34				

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
860	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Retail	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	29%	0.6	1.1	1.7	0.3
861	Commercial	WholeBldg_NC	WholeBldg - Com NC	Biz-NC/Retrofit	Retail	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	6.0	11.9	11.9	0.5
862	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Office	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	2.9	5.8	5.9	0.5
863	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Office	ROB	1583	21%	329	0.044	0.038	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.3	2.6	3.0	0.4
864	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Office	Retro	103919	35%	36372	4.831	4.187	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	12.9	25.8	25.5	0.5
865	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Office	Retro	103919	2%	1970	0.262	0.227	13	\$244.00	100%	50%	4	100%	5%	76%	54%	4.0	8.0	8.3	0.5
866	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Office	Retro	1480	50%	740	0.098	0.085	15	\$49.50	100%	50%	5	5%	20%	76%	55%	8.2	16.4	16.7	0.5
867	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Office	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	1.9	3.9	4.2	0.5
868	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Office	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.0	2.1	2.5	0.4
869	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Office	ROB	11904	13%	1514	0.454	0.112	12	\$2,162.00	100%	50%	1	14%	17%	76%	29%	0.4	0.8	1.1	0.3
870	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Office	ROB	6351	15%	924	0.416	0.103	12	\$1,682.00	100%	50%	2	18%	53%	76%	24%	0.4	0.7	1.0	0.4
871	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Office	ROB	18912	50%	9499	4.275	1.055	12	\$3,824.00	100%	50%	2	18%	53%	76%	48%	1.7	3.4	2.8	0.6
872	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Office	ROB	12454	14%	1762	0.396	0.098	12	\$2,126.00	100%	50%	3	27%	24%	76%	32%	0.4	0.8	1.3	0.3
873	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Office	ROB	13385	67%	9010	3.337	0.824	12	\$2,490.00	100%	50%	4	6%	45%	76%	51%	2.2	4.4	3.8	0.6
874	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Office	ROB	7500	85%	6398	1.535	0.379	12	\$1,891.00	100%	50%	5	3%	16%	76%	50%	1.7	3.4	3.6	0.5
875	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Office	ROB	3000	79%	2355	0.698	0.172	12	\$1,497.00	100%	50%	5	3%	16%	76%	42%	0.9	1.7	1.9	0.4
876	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Office	ROB	41082	34%	14133	2.741	1.230	16	\$255.00	100%	50%	6	26%	61%	76%	57%	33.3	66.5	63.3	0.5
877	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Office	ROB	35485	26%	9319	1.808	0.811	16	\$1,375.00	100%	50%	6	26%	61%	76%	54%	4.1	8.1	8.2	0.5
878	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Office	ROB	1124	14%	159	0.104	0.000	15	\$153.28	100%	50%	1	26%	10%	76%	35%	0.9	1.8	1.6	0.5
879	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Office	ROB	1124	19%	212	0.140	0.000	15	\$214.59	100%	50%	1	26%	10%	76%	34%	0.8	1.7	1.6	0.5
880	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Office	ROB	1124	30%	342	0.226	0.001	15	\$398.52	100%	50%	1	26%	10%	76%	32%	0.7	1.5	1.4	0.5
881	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Office	ROB	1262	9%	115	0.076	0.000	15	\$71.00	100%	50%	2	26%	10%	76%	43%	1.4	2.7	2.2	0.6
882	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Office	ROB	1262	13%	168	0.111	0.000	15	\$109.23	100%	50%	2	26%	10%	76%	42%	1.3	2.6	2.2	0.6
883	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Office	ROB	1262	24%	297	0.196	0.001	15	\$218.46	100%	50%	2	26%	10%	76%	40%	1.2	2.3	2.0	0.6
884	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Office	Retro	1367	7%	96	0.063	0.000	3	\$5.33	100%	50%	3	51%	50%	76%	56%	4.2	8.4	5.4	0.8
885	Commercial	Cooling	Air Side Economizer	Biz-Custom	Office	Retro	1131	20%	226	0.149	0.001	15	\$153.28	100%	50%	4	51%	25%	76%	41%	1.3	2.5	2.1	0.6
886	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Office	Retro	1186	20%	237	0.156	0.001	15	\$197.50	100%	50%	5	51%	20%	76%	38%	1.0	2.0	1.8	0.6
887	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	1172	13%	146	0.096	0.000	15	\$115.00	100%	50%	6	7%	10%	76%	39%	1.1	2.2	1.9	0.6
888	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	1172	22%	260	0.171	0.001	15	\$514.00	100%	50%	6	7%	10%	76%	22%	0.4	0.9	1.0	0.4
889	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	1172	33%	391	0.257	0.001	15	\$630.50	100%	50%	6	7%	10%	76%	26%	0.5	1.1	1.2	0.5
890	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Office	ROB	4687	14%	664	0.437	0.002	11	\$175.00	100%	50%	7	7%	20%	76%	51%	2.6	5.2	3.7	0.7
891	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Office	ROB	1512	15%	220	0.145	0.000	8	\$84.00	100%	50%	8	7%	20%	76%	48%	1.4	2.8	2.2	0.6
892	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Office	ROB	1198	9%	108	0.071	0.000	23	\$126.00	100%	50%	9	32%	10%	76%	32%	0.9	1.9	1.7	0.5
893	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Office	ROB	602	23%	137	0.090	0.000	23	\$126.00	100%	50%	10	4%	10%	76%	36%	1.2	2.4	2.1	0.6
894	Commercial	Cooling	Window Film	Biz-Custom	Office	Retro	6000	4%	264	0.174	0.001	10	\$153.81	100%	50%	11	100%	25%	76%	44%	0.6	2.2	0.0	0.6
895	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Office	Retro	6000	6%	360	0.237	0.001	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.6	1.2	1.3	0.5
896	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Office	Retro	1262	0%	0	0.589	0.002	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
897	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	6851	6%	393	0.086	0.084	15	\$135.00	100%	50%	1	6%	10%	76%	49%	2.0	4.0	3.6	0.6
898	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	6851	11%	787	0.173	0.169	15	\$445.76	100%	50%	1	6%	10%	76%	44%	1.2	2.5	2.4	0.5
899	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Office	ROB	6851	16%	1072	0.235	0.229	15	\$520.06	100%	50%	1	6%	10%	76%	46%	1.4	2.9	2.7	0.5
900	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	7641	6%	445	0.098	0.095	15	\$100.00	100%	50%	2	17%	10%	76%	52%	3.1	6.2	5.3	0.6
901	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	7641	11%	835	0.183	0.179	15	\$171.08	100%	50%	2	17%	10%	76%	52%	3.4	6.8	5.8	0.6
902	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	7890	6%	482	0.106	0.103	15	\$100.00	100%	50%	3	16%	10%	76%	52%	3.3	6.7	5.7	0.6
903	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	7890	11%	895	0.196	0.191	15	\$182.26	100%	50%	3	16%	10%	76%	52%	3.4	6.8	5.8	0.6
904	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	8198	6%	522	0.115	0.112	15	\$100.00	100%	50%	4	16%	10%	76%	52%	3.6	7.2	6.1	0.6
905	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Office	ROB	8198	12%	965	0.212	0.207	15	\$201.80	100%	50%	4	16%	10%	76%	52%	3.3	6.6	5.7	0.6
906	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Office	ROB	5080	3%	158	0.035	0.034	25	\$108.00	100%	50%	5	4%	20%	76%	41%	1.4	2.7	2.7	0.5
907	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Office	ROB	5080	5%	259	0.057	0.055	25	\$108.00	100%	50%	5	4%	20%	76%	47%	2.2	4.5	4.1	0.5
908	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Office	ROB	8281	5%	378	0.083	0.081	8	\$84.00	100%	50%	6	10%	20%	76%	52%	2.0	3.9	3.5	0.6
909	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Office	ROB	1193	64%	764	0.148	0.066	10	\$784.00	100%	50%	1	100%	13%	69%	27%	0.4	0.8	1.3	0.3
910	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Office	Retro	1193	2%	24	0.005	0.002	20	\$60.00	100%	50%	2	100%	80%	69%	14%	0.3	0.5	1.0	0.3
911	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Office	ROB	2262	32%	713	0.138	0.062	5	\$92.90	100%	50%	3	20%	85%	69%	48%	1.9	3.7	3.8	0.5
912	Commercial	HotWater	Faucet Aerator	Biz-Custom	Office	Retro	443	22%	97	0.019	0.008	10	\$6.70	100%	50%	4	20%	85%	69%	50%	6.2	12.5	12.0	0.5
913	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Office	ROB	2239	29%	660	0.128	0.057	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.6	3.2	3.5	0.5
914	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Office	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.3
915	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Office	Retro	856	66%	567	0.000	0.076	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.3
916	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Office	Retro	1589	60%	959	0.000	0.129	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3
917	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Office	Retro	1742	66%	1154	0.000	0.155	6	\$248.00	100%	50%									

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923	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Office	Retro	260	50%	130	0.022	0.018	15	\$70.00	100%	50%	2	79%	45%	74%	52%	1.1	2.2	2.5	0.4
924	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Office	Retro	516	61%	314	0.053	0.042	15	\$44.00	100%	50%	3	1%	45%	74%	61%	4.2	8.5	8.2	0.5
925	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Office	Retro	2423	68%	1649	0.276	0.223	15	\$330.00	100%	50%	4	0%	45%	74%	59%	3.0	5.9	5.9	0.5
926	Commercial	Lighting_Int	DeLamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Office	Retro	96	100%	96	0.016	0.013	11	\$12.00	100%	50%	5	79%	0%	74%	62%	3.8	7.6	7.3	0.5
927	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Office	Retro	560	30%	168	0.028	0.023	10	\$57.50	100%	50%	6	80%	11%	74%	56%	1.3	2.6	2.8	0.5
928	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Office	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	80%	11%	74%	51%	1.0	2.0	2.3	0.4
929	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Office	Retro	438	30%	131	0.022	0.018	15	\$77.45	100%	50%	6	80%	11%	74%	51%	1.0	2.0	2.3	0.4
930	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Office	Retro	70	43%	30	0.005	0.004	5	\$32.50	100%	50%	7	1%	85%	74%	35%	0.2	0.5	0.9	0.3
931	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Office	Retro	385	61%	237	0.031	0.027	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.2	0.5	0.9	0.2
932	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Office	Retro	9932	50%	4966	0.660	0.572	20	\$1,586.00	100%	50%	2	42%	21%	76%	50%	2.1	4.1	4.6	0.4
933	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Office	Retro	262	83%	217	0.029	0.025	10	\$483.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.9	0.2
934	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Office	Retro	2984	25%	746	0.099	0.086	10	\$20,309.70	100%	50%	4	3%	10%	76%	15%	1.3	0.0	3.3	0.0
935	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	ROB	Office	ROB	3096	3%	85	0.011	0.010	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.8	1.6	2.1	0.4
936	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Office	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	26%	10%	76%	20%	0.5	0.9	0.8	0.6
937	Commercial	Motors	Cogged V-Belt	Biz-Custom	Office	Retro	9092	3%	282	0.034	0.038	15	\$383.81	100%	50%	1	50%	10%	76%	30%	0.4	0.8	1.3	0.3
938	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Office	Retro	3805	34%	1290	0.156	0.174	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.3	8.5	8.8	0.5
939	Commercial	Motors	Power Drive Systems	Biz-Custom	Office	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.3	8.5	8.8	0.5
940	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Office	Retro	17620	31%	5392	0.653	0.727	15	\$527.50	100%	50%	2	100%	1%	76%	55%	5.7	11.4	11.5	0.5
941	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Office	Retro	551	26%	110	0.015	0.013	6	\$0.00	100%	50%	1	2%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
942	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Office	Retro	1398	10%	140	0.000	0.145	5	\$40.00	100%	50%	2	10%	20%	76%	50%	1.8	3.6	2.0	0.9
943	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Office	Retro	1126	15%	169	0.000	0.110	8	\$70.00	100%	50%	2	10%	20%	76%	47%	1.4	2.7	2.1	0.7
944	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Office	ROB	1621	23%	368	0.042	0.042	8	\$118.00	100%	50%	3	54%	25%	76%	50%	1.0	2.1	2.5	0.4
945	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Office	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	54%	25%	76%	48%	0.9	1.7	2.1	0.4
946	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Office	Retro	86783	18%	15778	2.095	1.816	15	\$480.00	100%	50%	3	54%	25%	76%	56%	18.0	36.0	36.0	0.5
947	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Office	ROB	8940	25%	2265	0.259	0.259	20	\$750.00	100%	50%	4	54%	25%	76%	49%	1.9	3.9	4.5	0.4
948	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Office	Retro	764	47%	358	0.048	0.041	15	\$82.00	100%	50%	4	54%	25%	76%	52%	2.4	4.8	5.2	0.5
949	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Office	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	2%	10%	76%	48%	1.4	2.7	3.2	0.4
950	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Office	Retro	0	0%	0	0.000	0.000	4	\$0.00	100%	0%	1	4%	50%	64%	48%	#DIV/0!	0.0	0.0	0.0
951	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Office	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	2.9	5.8	6.2	0.5
952	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Office	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	3%	25%	64%	19%	0.4	0.7	1.2	0.3
953	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Office	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.4	0.8	1.3	0.3
954	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Office	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	10%	25%	64%	12%	0.2	0.4	0.9	0.2
955	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Office	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	3%	80%	64%	41%	2.9	5.7	6.1	0.5
956	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Office	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	3%	25%	64%	41%	2.5	5.1	5.5	0.5
957	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Office	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	4%	25%	64%	29%	0.7	1.4	1.9	0.4
958	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Office	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	16%	25%	64%	37%	1.0	2.0	2.4	0.4
959	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Office	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	5%	25%	64%	39%	1.4	2.7	3.1	0.4
960	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Office	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	2%	80%	64%	41%	2.9	5.7	6.1	0.5
961	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Office	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	2%	2%	64%	34%	0.7	1.4	1.8	0.4
962	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Office	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	16%	54%	64%	15%	0.2	0.5	1.0	0.2
963	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Office	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	16%	54%	64%	10%	0.1	0.2	0.7	0.2
964	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Office	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	5%	25%	64%	41%	2.0	3.9	4.3	0.5
965	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Office	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	5%	25%	64%	45%	5.5	11.0	11.2	0.5
966	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Office	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	5%	54%	64%	22%	0.4	0.7	1.2	0.3
967	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Office	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	5%	54%	64%	10%	0.1	0.2	0.7	0.1
968	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Office	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	82%	25%	64%	13%	0.5	0.9	0.8	0.6
969	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Office	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	82%	25%	64%	41%	1.1	2.1	2.5	0.4
970	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Office	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	9%	44%	64%	39%	1.3	2.7	3.1	0.4
971	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Office	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	9%	30%	64%	12%	0.2	0.3	0.8	0.2
972	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Office	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	10%	35%	64%	43%	2.9	5.8	6.1	0.5
973	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Office	Retro	21289	63%	13306	0.000	0.000	15	\$147.41	100%	50%	1	32%	50%	76%	57%	32.5	65.0	98.1	0.3
974	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Office	Retro	19919	82%	16287	2.828	2.027	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.3	4.6	4.8	0.5
975	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Office	Retro	21909	83%	18277	3.173	2.275	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.6	5.1	5.2	0.5
976	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Office	Retro	23903	82%	19579	3.399	2.437	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	2.7	5.4	5.5	0.5
977	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Office	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.5	3.0	3.2	0.5
978	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Office	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	50%	2	0%	20%	76%	57%	0.0	0.0	0.0	0.0
979	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Office	Retro	1143	16%	185	0.000	0.000	10	\$187.50	100%	50%	3	100%	50%	76%	34%	0.8	0.5	2.6	0.2
980	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Office	Retro	1372	50%	681	0.202	0.000	10	\$341.21	100%	50%	4	100%	50%	76%	46%	1.0	1.7	2.4	0.4
981	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Office	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	5.0	10.0	9.5	0.5
982	Commercial	WholeBldg	WholeBlg - Com RET	Biz-NC/Retrofit	Office</																			

C&I Measure Summary: South Dakota

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1001	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	166	14%	23	0.016	0.000	15	\$153.28	100%	50%	1	31%	10%	76%	15%	0.1	0.3	0.7	0.2
1002	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	166	19%	31	0.021	0.000	15	\$214.59	100%	50%	1	31%	10%	76%	15%	0.1	0.2	0.7	0.2
1003	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	166	30%	51	0.034	0.000	15	\$398.52	100%	50%	1	31%	10%	76%	15%	0.1	0.2	0.6	0.2
1004	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	187	9%	17	0.011	0.000	15	\$71.00	100%	50%	2	31%	10%	76%	15%	0.2	0.4	0.8	0.3
1005	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	187	13%	25	0.017	0.000	15	\$109.23	100%	50%	2	31%	10%	76%	15%	0.2	0.4	0.7	0.3
1006	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	187	24%	44	0.029	0.000	15	\$218.46	100%	50%	2	31%	10%	76%	15%	0.2	0.3	0.7	0.2
1007	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Warehouse	Retro	202	7%	14	0.009	0.000	3	\$5.33	100%	50%	3	62%	50%	76%	48%	0.6	1.2	1.2	0.5
1008	Commercial	Cooling	Air Side Economizer	Biz-Custom	Warehouse	Retro	168	20%	34	0.022	0.000	15	\$153.28	100%	50%	4	62%	25%	76%	15%	0.2	0.4	0.7	0.3
1009	Commercial	Cooling	HVAC Occupancy Controls	Biz-Custom	Warehouse	Retro	176	20%	35	0.023	0.000	15	\$197.50	100%	50%	5	62%	20%	76%	15%	0.2	0.3	0.7	0.2
1010	Commercial	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	173	13%	22	0.014	0.000	15	\$115.00	100%	50%	6	38%	10%	76%	15%	0.2	0.3	0.7	0.2
1011	Commercial	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	173	22%	39	0.026	0.000	15	\$514.00	100%	50%	6	38%	10%	76%	15%	0.1	0.1	0.6	0.1
1012	Commercial	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	173	33%	58	0.039	0.000	15	\$630.50	100%	50%	6	38%	10%	76%	15%	0.1	0.2	0.6	0.1
1013	Commercial	Cooling	Smart Thermostat	Biz-Prescriptive HVAC	Warehouse	ROB	694	14%	98	0.065	0.000	11	\$175.00	100%	50%	7	38%	20%	76%	24%	0.4	0.8	1.0	0.4
1014	Commercial	Cooling	PTAC - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Warehouse	ROB	224	15%	33	0.022	0.000	8	\$84.00	100%	50%	8	0%	20%	76%	20%	0.2	0.4	0.8	0.3
1015	Commercial	Cooling	Air Cooled Chiller	Biz-Custom	Warehouse	ROB	177	9%	16	0.011	0.000	23	\$126.00	100%	50%	9	0%	10%	76%	15%	0.1	0.3	0.7	0.2
1016	Commercial	Cooling	Water Cooled Chiller	Biz-Custom	Warehouse	ROB	89	23%	20	0.013	0.000	23	\$126.00	100%	50%	10	0%	10%	76%	15%	0.2	0.3	0.7	0.2
1017	Commercial	Cooling	Window Film	Biz-Custom	Warehouse	Retro	6000	4%	264	0.176	0.000	10	\$153.81	100%	50%	11	100%	25%	76%	44%	0.6	2.2	0.0	0.6
1018	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Warehouse	Retro	6000	6%	360	0.240	0.000	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.6	1.2	1.3	0.5
1019	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Warehouse	Retro	187	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
1020	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	2956	5%	143	0.032	0.032	15	\$135.00	100%	50%	1	19%	10%	76%	35%	0.7	1.5	1.6	0.5
1021	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	2956	10%	297	0.066	0.067	15	\$445.76	100%	50%	1	19%	10%	76%	28%	0.5	0.9	1.2	0.4
1022	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Warehouse	ROB	2956	13%	392	0.087	0.089	15	\$520.06	100%	50%	1	19%	10%	76%	30%	0.5	1.1	1.3	0.4
1023	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	3340	6%	189	0.042	0.043	15	\$100.00	100%	50%	2	10%	10%	76%	45%	1.3	2.7	2.5	0.5
1024	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	3340	11%	356	0.079	0.081	15	\$171.08	100%	50%	2	10%	10%	76%	46%	1.5	2.9	2.7	0.5
1025	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	3443	6%	201	0.045	0.046	15	\$100.00	100%	50%	3	10%	10%	76%	46%	1.4	2.8	2.7	0.5
1026	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	3443	11%	378	0.084	0.086	15	\$182.26	100%	50%	3	10%	10%	76%	46%	1.5	2.9	2.7	0.5
1027	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	3560	6%	215	0.048	0.049	15	\$100.00	100%	50%	4	10%	10%	76%	46%	1.5	3.0	2.8	0.5
1028	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Warehouse	ROB	3560	11%	404	0.090	0.092	15	\$201.80	100%	50%	4	10%	10%	76%	46%	1.4	2.8	2.7	0.5
1029	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Warehouse	ROB	2143	3%	61	0.014	0.014	25	\$108.00	100%	50%	5	0%	20%	76%	24%	0.5	1.1	1.4	0.4
1030	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Warehouse	ROB	2143	4%	76	0.017	0.017	25	\$108.00	100%	50%	5	0%	20%	76%	29%	0.7	1.3	1.6	0.4
1031	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Warehouse	ROB	3607	3%	90	0.020	0.020	8	\$84.00	100%	50%	6	0%	20%	76%	36%	0.5	1.0	1.2	0.4
1032	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Warehouse	ROB	526	64%	337	0.064	0.052	10	\$784.00	100%	50%	1	100%	0%	69%	15%	0.2	0.4	0.8	0.2
1033	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Warehouse	Retro	526	2%	11	0.002	0.002	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.1	0.3	0.7	0.2
1034	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Warehouse	ROB	2262	32%	713	0.135	0.111	5	\$92.90	100%	50%	3	20%	85%	69%	48%	2.1	4.1	3.8	0.5
1035	Commercial	HotWater	Faucet Aerator	Biz-Custom	Warehouse	Retro	443	22%	97	0.018	0.015	10	\$6.70	100%	50%	4	20%	85%	69%	50%	6.9	13.8	12.0	0.6
1036	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Warehouse	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.8	3.5	3.5	0.5
1037	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Warehouse	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.3
1038	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Warehouse	Retro	856	66%	567	0.000	0.077	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.3
1039	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Warehouse	Retro	1589	60%	959	0.000	0.130	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3
1040	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Warehouse	Retro	1742	66%	1154	0.000	0.157	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.0	2.1	2.9	0.4
1041	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Warehouse	Retro	3235	60%	1953	0.000	0.265	6	\$756.00	100%	50%	5	14%	69%	76%	58%	0.6	1.2	1.8	0.3
1042	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Warehouse	Retro	1589	60%	959	0.000	0.130	12	\$756.00	100%	50%	6	14%	69%	76%	47%	0.5	1.0	1.7	0.3
1043	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Warehouse	Retro	170	68%	115	0.017	0.012	15	\$27.00	100%	50%	1	18%	45%	74%	58%	2.4	4.7	5.1	0.5
1044	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Warehouse	Retro	122	74%	90	0.013	0.010	15	\$59.00	100%	50%	1	18%	45%	74%	48%	0.8	1.7	2.2	0.4
1045	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Warehouse	Retro	110	45%	49	0.007	0.005	15	\$1.88	100%	50%	2	78%	45%	74%	65%	14.5	29.0	28.7	0.5
1046	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Warehouse	Retro	248	50%	124	0.019	0.013	15	\$70.00	100%	50%	2	78%	45%	74%	52%	1.0	2.0	2.4	0.4
1047	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Warehouse	Retro	492	61%	299	0.045	0.032	15	\$44.00	100%	50%	3	2%	45%	74%	61%	3.8	7.5	7.8	0.5
1048	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Warehouse	Retro	2310	68%	1571	0.234	0.170	15	\$330.00	100%	50%	4	2%	45%	74%	59%	2.6	5.3	5.6	0.5
1049	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Warehouse	Retro	91	100%	91	0.014	0.010	11	\$12.00	100%	50%	5	78%	0%	74%	61%	3.4	6.8	7.0	0.5
1050	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Warehouse	Retro	534	30%	160	0.024	0.017	10	\$57.50	100%	50%	6	82%	11%	74%	56%	1.2	2.3	2.7	0.4
1051	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Warehouse	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	82%	11%	74%	50%	0.9	1.8	2.3	0.4
1052	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Warehouse	Retro	417	30%	125	0.019	0.013	15	\$73.81	100%	50%	6	82%	11%	74%	51%	0.9	1.9	2.3	0.4
1053	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Warehouse	Retro	63	43%	27	0.004	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	33%	0.2	0.4	0.9	0.2
1054	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Warehouse	Retro	385	61%	237	0.033	0.025	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.2	0.5	0.9	0.3
1055	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Warehouse	Retro	9932	50%	4966	0.698	0.531	20	\$1,586.00	100%	50%	2	0%	10%	76%	50%	2.1	4.1	4.6	0.4
1056	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Warehouse	Retro	262	83%	217	0.031	0.023	10	\$485.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.9	0.2
1057	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Warehouse	Retro	2984	25%	746	0.105	0.080	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	1.3	0.0	3.3	0.0
1058	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Warehouse	ROB	3096	3%	85	0.012	0.009	15	\$59.00	100%	50%	5								

C&I Measure Summary: South Dakota

MDU_South Dakota																								
Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1073	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Warehouse	Retro	207	50%	103	0.014	0.012	4	\$10.22	100%	50%	1	10%	50%	64%	44%	1.9	3.8	4.1	0.5
1074	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Warehouse	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	2.9	5.8	6.2	0.5
1075	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Warehouse	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	7%	25%	64%	19%	0.4	0.7	1.2	0.3
1076	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom	Warehouse	Retro	831	50%	416	0.058	0.046	15	\$559.16	100%	50%	4	2%	10%	64%	21%	0.4	0.8	1.3	0.3
1077	Commercial	Refrigeration	Compressor Retrofit	Biz-Custom	Warehouse	Retro	813	20%	163	0.023	0.018	15	\$477.00	100%	50%	5	23%	25%	64%	12%	0.2	0.4	0.9	0.2
1078	Commercial	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Warehouse	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	6	6%	80%	64%	41%	2.9	5.7	6.1	0.5
1079	Commercial	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Warehouse	Retro	2236	32%	716	0.099	0.080	15	\$155.00	100%	50%	7	6%	25%	64%	41%	2.5	5.1	5.5	0.5
1080	Commercial	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Warehouse	Retro	2960	50%	1480	0.206	0.165	15	\$1,170.00	100%	50%	8	8%	25%	64%	29%	0.7	1.4	1.9	0.4
1081	Commercial	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Custom	Warehouse	Retro	631	67%	423	0.059	0.047	12	\$200.00	100%	50%	9	12%	25%	64%	37%	1.0	2.0	2.4	0.4
1082	Commercial	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Prescriptive Other	Warehouse	Retro	622	59%	368	0.051	0.041	12	\$127.00	100%	50%	10	4%	25%	64%	39%	1.4	2.7	3.1	0.4
1083	Commercial	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Custom	Warehouse	Retro	2884	55%	1586	0.220	0.177	15	\$304.59	100%	50%	11	2%	80%	64%	41%	2.9	5.7	6.1	0.5
1084	Commercial	Refrigeration	Q-Sync Motor for Walk-In and Reach-in Evaporator Fan Motor	Biz-Custom	Warehouse	Retro	441	34%	149	0.021	0.017	10	\$90.40	100%	50%	12	2%	2%	64%	34%	0.7	1.4	1.8	0.4
1085	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Prescriptive Other	Warehouse	ROB	2140	29%	629	0.087	0.070	12	\$1,238.50	100%	50%	13	12%	54%	64%	15%	0.2	0.5	1.0	0.2
1086	Commercial	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Prescriptive Other	Warehouse	ROB	1410	20%	281	0.039	0.031	12	\$1,210.50	100%	50%	13	12%	54%	64%	10%	0.1	0.2	0.7	0.2
1087	Commercial	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Custom	Warehouse	Retro	1113	75%	832	0.116	0.093	12	\$200.00	100%	50%	14	4%	25%	64%	41%	2.0	3.9	4.3	0.5
1088	Commercial	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Prescriptive Other	Warehouse	Retro	2512	59%	1486	0.207	0.166	12	\$127.00	100%	50%	15	4%	25%	64%	45%	5.5	11.0	11.2	0.5
1089	Commercial	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Prescriptive Other	Warehouse	ROB	6374	20%	1275	0.177	0.142	12	\$1,650.50	100%	50%	16	4%	54%	64%	22%	0.4	0.7	1.2	0.3
1090	Commercial	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Prescriptive Other	Warehouse	ROB	4522	7%	305	0.042	0.034	12	\$1,520.50	100%	50%	16	4%	54%	64%	10%	0.1	0.2	0.7	0.1
1091	Commercial	Refrigeration	Refrigeration - Custom	Biz-Custom	Warehouse	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	17	91%	25%	64%	13%	0.5	0.9	0.8	0.6
1092	Commercial	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom	Warehouse	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	18	91%	25%	64%	41%	1.1	2.1	2.5	0.4
1093	Commercial	Refrigeration	Energy Star Ice Machine	Biz-Prescriptive Other	Warehouse	ROB	6993	10%	721	0.100	0.080	10	\$222.00	100%	50%	19	0%	44%	64%	39%	1.3	2.7	3.1	0.4
1094	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Warehouse	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	9%	30%	64%	12%	0.2	0.3	0.8	0.2
1095	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Warehouse	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	7%	35%	64%	43%	2.9	5.8	6.1	0.5
1096	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Warehouse	Retro	25733	63%	16083	0.000	0.000	15	\$147.41	100%	50%	1	40%	14%	76%	57%	39.0	78.0	118.4	0.3
1097	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Warehouse	Retro	19919	82%	16287	1.802	2.333	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.2	4.4	4.8	0.5
1098	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Warehouse	Retro	21909	83%	18277	2.023	2.618	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.4	4.8	5.2	0.5
1099	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Warehouse	Retro	23903	82%	19579	2.167	2.805	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	2.6	5.1	5.5	0.5
1100	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Warehouse	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.4	2.7	3.2	0.4
1101	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Warehouse	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%	2%	0	0%	20%	76%	57%	0.0	0.0	0.0	0.0
1102	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Warehouse	Retro	651	38%	246	0.000	0.000	10	\$187.50	100%	50%	3	100%	14%	76%	40%	1.9	0.7	4.9	0.2
1103	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Warehouse	Retro	0	0%	0	0.000	0.000	10	\$0.00	100%	0%	4	100%	14%	76%	57%	#DIV/0!	0.0	0.0	0.0
1104	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Warehouse	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	4.5	9.1	9.5	0.5
1105	Commercial	WholeBldg	WholeBlg - Com RET	Biz-NC/Retrofit	Warehouse	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.2	2.3	2.8	0.4
1106	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Warehouse	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	29%	0.6	1.1	1.7	0.3
1107	Commercial	WholeBldg_NC	WholeBlg - Com NC	Biz-NC/Retrofit	Warehouse	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	5.8	11.7	11.9	0.5
1108	Commercial	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Other	Retro	6	17%	1	0.000	0.000	5	\$0.08	100%	50%	1	100%	39%	76%	55%	2.8	5.6	5.9	0.5
1109	Commercial	CompressedAir	Efficient Air Compressors (VSD)	Biz-Custom	Other	ROB	1583	21%	329	0.038	0.038	13	\$127.00	100%	50%	2	100%	20%	76%	48%	1.3	2.5	3.0	0.4
1110	Commercial	CompressedAir	AODD Pump Controls	Biz-Custom	Other	Retro	103919	35%	36372	4.217	4.192	10	\$1,150.00	100%	50%	3	100%	50%	76%	56%	12.6	25.2	25.5	0.5
1111	Commercial	CompressedAir	No Loss Condensate Drain	Biz-Custom	Other	Retro	103919	2%	1970	0.228	0.227	10	\$244.00	100%	50%	4	100%	5%	76%	54%	3.2	6.4	6.9	0.5
1112	Commercial	CompressedAir	Efficient Air Nozzles	Biz-Custom	Other	Retro	1480	50%	740	0.086	0.085	15	\$49.50	100%	50%	5	5%	20%	76%	55%	8.0	16.0	16.7	0.5
1113	Commercial	CompressedAir	Compressed Air - Custom	Biz-Custom	Other	Retro	5	20%	1	0.000	0.000	10	\$0.21	100%	50%	6	100%	20%	76%	52%	1.9	3.8	4.2	0.4
1114	Commercial	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom	Other	Retro	5	21%	1	0.000	0.000	5	\$0.22	100%	50%	1	100%	20%	76%	52%	1.0	2.0	2.5	0.4
1115	Commercial	Cooking	Commercial Griddles	Biz-Prescriptive Other	Other	ROB	11904	13%	1514	0.454	0.347	12	\$2,162.00	100%	50%	1	14%	17%	76%	57%	0.5	0.9	1.1	0.4
1116	Commercial	Cooking	Convection Ovens	Biz-Prescriptive Other	Other	ROB	6351	15%	924	0.416	0.317	12	\$1,682.00	100%	50%	2	18%	53%	76%	57%	0.5	0.9	1.0	0.5
1117	Commercial	Cooking	Combination Ovens	Biz-Prescriptive Other	Other	ROB	18912	50%	9499	4.275	3.263	12	\$3,824.00	100%	50%	2	18%	53%	76%	57%	2.1	4.1	2.8	0.7
1118	Commercial	Cooking	Commercial Fryers	Biz-Prescriptive Other	Other	ROB	12454	14%	1762	0.396	0.303	12	\$2,126.00	100%	50%	3	27%	24%	76%	57%	0.5	0.9	1.3	0.4
1119	Commercial	Cooking	Commercial Steam Cookers	Biz-Prescriptive Other	Other	ROB	13385	67%	9010	3.337	2.547	12	\$2,490.00	100%	50%	4	6%	45%	76%	57%	2.7	5.4	3.8	0.7
1120	Commercial	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Prescriptive Other	Other	ROB	7500	85%	6398	1.535	1.172	12	\$1,891.00	100%	50%	5	3%	16%	76%	57%	2.0	4.0	3.6	0.6
1121	Commercial	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Prescriptive Other	Other	ROB	3000	79%	2355	0.698	0.533	12	\$1,497.00	100%	50%	5	3%	16%	76%	57%	1.0	2.1	1.9	0.5
1122	Commercial	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Prescriptive Other	Other	ROB	41082	34%	14133	2.672	2.193	16	\$255.00	100%	50%	6	26%	61%	76%	57%	36.5	73.1	63.3	0.6
1123	Commercial	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Prescriptive Other	Other	ROB	35485	26%	9319	1.762	1.446	16	\$1,375.00	100%	50%	6	26%	61%	76%	54%	4.5	8.9	8.2	0.5
1124	Commercial	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Other	ROB	640	14%	90	0.051	0.001	15	\$153.28	100%	50%	1	29%	10%	76%	25%	0.5	0.9	1.1	0.4
1125	Commercial	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Other	ROB	640	19%	121	0.068	0.001	15	\$214.59	100%	50%	1	29%	10%	76%	24%	0.4	0.9	1.1	0.4
1126	Commercial	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Prescriptive HVAC	Other	ROB	640	30%	195	0.110	0.001	15	\$398.52	100%	50%	1	29%	10%	76%	22%	0.4	0.8	1.0	0.4
1127	Commercial	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Prescriptive HVAC	Other	ROB	718	9%	65	0.037	0.000	15	\$71.00	100%	50%	2	29%	10%	76%	33%	0.7	1.4	1.5	0.5
1128	Commercial	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Prescriptive HVAC	Other	ROB	718	13%	96	0.054	0.001	15	\$109.23	100%	50%	2	29%	10%	76%	33%	0.7	1.4	1.4	0.5
1129	Commercial	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Prescriptive HVAC	Other	ROB	718	24%	169	0.096	0.001	15	\$218.46	100%	50%	2	29%	10%	76%	31%	0.6	1.2	1.3	0.5
1130	Commercial	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Other	Retro	778	7%	55	0.031	0.000	3	\$5.33	100%	50%	3	57%	50%	76%	55%	2.2	4.4	3.3	0.7
1131	Commercial	Cooling	Air Side Economizer	Biz-Custom	Other	Retro	644	20%	129															

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test
1141	Commercial	Cooling	Triple Pane Windows	Biz-Custom	Other	Retro	6000	6%	360	0.204	0.003	25	\$700.00	100%	50%	11	100%	2%	76%	22%	0.5	1.1	1.3	0.4
1142	Commercial	Cooling	Energy Recovery Ventilator	Biz-Custom	Other	Retro	718	0%	0	0.000	0.000	15	\$0.00	100%	0%	12	100%	2%	76%	57%	#DIV/0!	0.0	0.0	0.0
1143	Commercial	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Prescriptive HVAC	Other	ROB	4298	6%	241	0.046	0.053	15	\$135.00	100%	50%	1	0%	10%	76%	57%	1.2	2.4	2.4	0.5
1144	Commercial	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Prescriptive HVAC	Other	ROB	4298	11%	485	0.092	0.106	15	\$445.76	100%	50%	1	0%	10%	76%	57%	0.7	1.5	1.7	0.4
1145	Commercial	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Prescriptive HVAC	Other	ROB	4298	15%	658	0.125	0.144	15	\$520.06	100%	50%	1	0%	10%	76%	57%	0.9	1.7	1.9	0.5
1146	Commercial	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	4802	6%	279	0.053	0.061	15	\$100.00	100%	50%	2	17%	10%	76%	57%	1.9	3.8	3.5	0.5
1147	Commercial	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	4802	11%	523	0.099	0.114	15	\$171.08	100%	50%	2	17%	10%	76%	57%	2.1	4.1	3.8	0.5
1148	Commercial	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	4957	6%	301	0.057	0.066	15	\$100.00	100%	50%	3	17%	10%	76%	57%	2.0	4.1	3.8	0.5
1149	Commercial	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	4957	11%	560	0.106	0.122	15	\$182.26	100%	50%	3	17%	10%	76%	57%	2.1	4.1	3.8	0.5
1150	Commercial	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	5147	6%	326	0.062	0.071	15	\$100.00	100%	50%	4	17%	10%	76%	57%	2.2	4.4	4.0	0.5
1151	Commercial	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Prescriptive HVAC	Other	ROB	5147	12%	603	0.115	0.131	25	\$201.80	100%	50%	4	17%	10%	76%	57%	2.7	5.4	5.0	0.5
1152	Commercial	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Prescriptive HVAC	Other	ROB	3177	3%	97	0.019	0.021	25	\$108.00	100%	50%	5	0%	20%	76%	57%	0.8	1.6	1.9	0.4
1153	Commercial	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Prescriptive HVAC	Other	ROB	3177	5%	155	0.030	0.034	25	\$108.00	100%	50%	5	0%	20%	76%	57%	1.3	2.6	2.7	0.5
1154	Commercial	Heating	PTHP - 7,000 to 15,000 Btuh	Biz-Prescriptive HVAC	Other	ROB	5201	4%	222	0.042	0.048	8	\$84.00	100%	50%	6	0%	20%	76%	57%	1.1	2.3	2.2	0.5
1155	Commercial	HotWater	Heat Pump Water Heater	Biz-Prescriptive Other	Other	ROB	456	64%	292	0.055	0.045	10	\$784.00	100%	50%	1	100%	20%	69%	14%	0.2	0.4	0.8	0.2
1156	Commercial	HotWater	Hot Water Pipe Insulation	Biz-Custom	Other	Retro	456	2%	9	0.002	0.001	20	\$60.00	100%	50%	2	100%	80%	69%	11%	0.1	0.2	0.7	0.2
1157	Commercial	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Other	ROB	2262	32%	713	0.135	0.111	5	\$92.90	100%	50%	3	20%	85%	69%	48%	2.1	4.1	3.8	0.5
1158	Commercial	HotWater	Faucet Aerator	Biz-Custom	Other	Retro	443	22%	97	0.018	0.015	10	\$6.70	100%	50%	4	20%	85%	69%	50%	6.9	13.8	12.0	0.6
1159	Commercial	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Prescriptive Other	Other	ROB	2239	29%	660	0.125	0.102	11	\$190.00	100%	50%	5	25%	33%	69%	44%	1.8	3.5	3.5	0.5
1160	Commercial	Lighting_Ext	LED wallpack (existing W<250)	Biz-Prescriptive Light	Other	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	1	14%	69%	76%	56%	0.9	1.8	2.6	0.3
1161	Commercial	Lighting_Ext	LED parking lot fixture (existing W<250)	Biz-Prescriptive Light	Other	Retro	856	66%	567	0.000	0.078	12	\$248.00	100%	50%	2	14%	69%	76%	56%	0.9	1.8	2.6	0.3
1162	Commercial	Lighting_Ext	LED parking lot fixture (existing W≥250)	Biz-Prescriptive Light	Other	Retro	1589	60%	959	0.000	0.132	12	\$756.00	100%	50%	3	14%	69%	76%	47%	0.5	1.0	1.7	0.3
1163	Commercial	Lighting_Ext	LED parking garage fixture (existing W<250)	Biz-Prescriptive Light	Other	Retro	1742	66%	1154	0.000	0.159	6	\$248.00	100%	50%	4	14%	69%	76%	62%	1.0	2.1	2.9	0.4
1164	Commercial	Lighting_Ext	LED parking garage fixture (existing W≥250)	Biz-Prescriptive Light	Other	Retro	3235	60%	1953	0.000	0.269	6	\$756.00	100%	50%	5	14%	69%	76%	58%	0.6	1.2	1.8	0.3
1165	Commercial	Lighting_Ext	LED outdoor pole decorative fixture (existing W≥250)	Biz-Prescriptive Light	Other	Retro	1589	60%	959	0.000	0.132	12	\$756.00	100%	50%	6	14%	69%	76%	47%	0.5	1.0	1.7	0.3
1166	Commercial	Lighting_Int	LED downlight fixture	Biz-Prescriptive Light	Other	Retro	194	68%	131	0.017	0.016	15	\$27.00	100%	50%	1	10%	45%	74%	59%	2.7	5.3	5.8	0.5
1167	Commercial	Lighting_Int	LED interior directional	Biz-Prescriptive Light	Other	Retro	140	74%	103	0.013	0.012	15	\$59.00	100%	50%	1	10%	45%	74%	51%	1.0	1.9	2.4	0.4
1168	Commercial	Lighting_Int	LED T8 tube replacement	Biz-Prescriptive Light	Other	Retro	125	45%	56	0.007	0.007	15	\$1.88	100%	50%	2	87%	45%	74%	65%	16.3	32.6	32.7	0.5
1169	Commercial	Lighting_Int	LED troffer, 2'X2' and 2'X4'	Biz-Prescriptive Light	Other	Retro	283	50%	142	0.018	0.017	15	\$70.00	100%	50%	2	87%	45%	74%	53%	1.1	2.2	2.7	0.4
1170	Commercial	Lighting_Int	LED low bay fixture	Biz-Prescriptive Light	Other	Retro	561	61%	341	0.043	0.040	15	\$44.00	100%	50%	3	24%	45%	74%	61%	4.2	8.5	8.9	0.5
1171	Commercial	Lighting_Int	LED high bay fixture	Biz-Prescriptive Light	Other	Retro	2636	68%	1793	0.226	0.213	15	\$330.00	100%	50%	4	1%	45%	74%	59%	3.0	5.9	6.4	0.5
1172	Commercial	Lighting_Int	Delamp Fluorescent Fixture Average Lamp Wattage 28W	Biz-Prescriptive Light	Other	Retro	104	100%	104	0.013	0.012	11	\$12.00	100%	50%	5	87%	0%	74%	62%	3.8	7.6	7.9	0.5
1173	Commercial	Lighting_Int	Daylighting Controls	Biz-Prescriptive Light	Other	Retro	609	30%	183	0.023	0.022	10	\$57.50	100%	50%	6	90%	11%	74%	57%	1.3	2.6	3.0	0.4
1174	Commercial	Lighting_Int	Network Lighting Controls - Wireless (WiFi)	Biz-Custom	Other	Retro	2	49%	1	0.000	0.000	15	\$0.59	100%	50%	6	90%	11%	74%	52%	1.0	2.0	2.5	0.4
1175	Commercial	Lighting_Int	Occupancy Sensors	Biz-Prescriptive Light	Other	Retro	476	30%	143	0.018	0.017	15	\$84.23	100%	50%	6	90%	11%	74%	51%	0.9	1.9	2.3	0.4
1176	Commercial	Lighting_Int	LED Exit Sign - 4 Watt Fixture (2 lamp)	Biz-Prescriptive Light	Other	Retro	66	43%	28	0.004	0.003	5	\$32.50	100%	50%	7	1%	85%	74%	34%	0.2	0.4	0.9	0.2
1177	Commercial	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Other	Retro	385	61%	237	0.027	0.027	5	\$230.00	100%	50%	1	5%	30%	76%	35%	0.2	0.5	0.9	0.2
1178	Commercial	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Custom	Other	Retro	9932	50%	4966	0.576	0.572	20	\$1,586.00	100%	50%	2	0%	10%	76%	50%	2.0	4.0	4.6	0.4
1179	Commercial	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Other	Retro	262	83%	217	0.025	0.025	10	\$483.00	100%	50%	3	1%	10%	76%	21%	0.2	0.4	0.9	0.2
1180	Commercial	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Other	Retro	2984	25%	746	0.086	0.086	10	\$20,309.70	100%	50%	4	0%	10%	76%	15%	1.3	0.0	3.3	0.0
1181	Commercial	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Other	ROB	3096	3%	85	0.010	0.010	15	\$59.00	100%	50%	5	1%	70%	76%	41%	0.8	1.5	2.1	0.4
1182	Commercial	Miscellaneous	Miscellaneous Custom	Biz-Custom	Other	Retro	7	2%	0	0.000	0.000	10	\$0.40	100%	50%	6	34%	10%	76%	20%	0.4	0.9	0.8	0.6
1183	Commercial	Motors	Cogged V-Belt	Biz-Custom	Other	Retro	17237	3%	534	0.081	0.063	15	\$383.81	100%	50%	1	50%	10%	76%	41%	0.8	1.6	2.0	0.4
1184	Commercial	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Other	Retro	3805	34%	1290	0.196	0.151	15	\$168.00	100%	50%	2	100%	10%	76%	54%	4.3	8.7	8.8	0.5
1185	Commercial	Motors	Power Drive Systems	Biz-Custom	Other	Retro	4	23%	1	0.000	0.000	15	\$0.13	100%	50%	2	100%	10%	76%	54%	4.3	8.7	8.8	0.5
1186	Commercial	Motors	Switch Reluctance Motors	Biz-Custom	Other	Retro	33406	31%	10222	1.557	1.197	15	\$527.50	100%	50%	2	100%	1%	76%	56%	10.9	21.9	21.4	0.5
1187	Commercial	PlugLoads_Office	Energy Star Printer/Copier/Fax	Biz-Custom	Other	Retro	551	26%	110	0.013	0.013	6	\$0.00	100%	50%	1	4%	90%	76%	57%	#DIV/0!	0.0	0.0	0.0
1188	Commercial	PlugLoads_Office	Smart Power Strip – Commercial Use	Biz-Custom	Other	Retro	1398	10%	140	0.000	0.145	5	\$40.00	100%	50%	2	26%	20%	76%	50%	1.8	3.6	2.0	0.9
1189	Commercial	PlugLoads_Office	Plug Load Occupancy Sensor	Biz-Custom	Other	Retro	1126	15%	169	0.000	0.110	8	\$70.00	100%	50%	2	26%	20%	76%	47%	1.4	2.7	2.1	0.7
1190	Commercial	PlugLoads_Office	Energy Star Server	Biz-Custom	Other	ROB	1621	23%	368	0.042	0.042	8	\$118.00	100%	50%	3	37%	25%	76%	50%	1.0	2.1	2.5	0.4
1191	Commercial	PlugLoads_Office	Server Virtualization	Biz-Custom	Other	ROB	2	45%	1	0.000	0.000	8	\$0.40	100%	50%	3	27%	25%	76%	48%	0.8	1.7	2.1	0.4
1192	Commercial	PlugLoads_Office	Electrically Commutated Plug Fans in data centers	Biz-Custom	Other	Retro	86783	18%	15778	1.829	1.818	15	\$480.00	100%	50%	3	37%	25%	76%	56%	17.6	35.2	36.0	0.5
1193	Commercial	PlugLoads_Office	High Efficiency CRAC unit	Biz-Custom	Other	ROB	8940	25%	2265	0.379	0.259	20	\$750.00	100%	50%	4	37%	25%	76%	49%	1.9	3.9	4.5	0.4
1194	Commercial	PlugLoads_Office	Computer Room Air Conditioner Economizer	Biz-Custom	Other	Retro	764	47%	358	0.042	0.041	15	\$82.00	100%	50%	4	37%	25%	76%	52%	2.3	4.7	5.2	0.4
1195	Commercial	PlugLoads_Office	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Other	Retro	4	25%	1	0.000	0.000	15	\$0.40	100%	50%	5	1%	10%	76%	48%	1.3	2.7	3.2	0.4
1196	Commercial	Refrigeration	Strip Curtains	Biz-Custom	Other	Retro	37	50%	18	0.003	0.002	4	\$10.22	100%	50%	1	4%	50%	64%	35%	0.3	0.7	1.1	0.3
1197	Commercial	Refrigeration	Bare Suction Line	Biz-Custom	Other	Retro	23	93%	21	0.003	0.002	15	\$4.00	100%	50%	2	0%	50%	64%	41%	2.9	5.8	6.2	0.5
1198	Commercial	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Other	Retro	1112	25%	278	0.039	0.031	15	\$431.00	100%	50%	3	3%	25%	64%	19%	0.4	0.7	1.2	0.3
1199	Commercial	Refrigeration	Saturated Suction Controls	Biz-Custom																				

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Measure #	Sector	End-Use	Measure Name	Program	Building Type	Replacement Type	Base Annual Electric	% Electric Savings	Per Unit KWh Savings	Per Unit Summer kW	Per Unit Winter kW	EUL	Measure \$	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	MAP Adoption Rate	RAP Adoption Rate	TRC Test	Utility Cost Test	Participant Test	RIM Test	
1217	Commercial	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Prescriptive Other	Other	ROB	1278	12%	153	0.021	0.017	14	\$500.00	100%	50%	20	5%	30%	64%	12%	0.2	0.3	0.8	0.2	
1218	Commercial	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Prescriptive Other	Other	Retro	115	74%	84	0.012	0.009	9	\$11.00	100%	50%	21	10%	35%	64%	43%	2.9	5.8	6.1	0.5	
1219	Commercial	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Custom	Other	Retro	26074	63%	16296	0.000	0.000	15	\$147.41	100%	50%	1	40%	17%	76%	57%	39.7	79.3	120.0	0.3	
1220	Commercial	Ventilation	High Volume Low Speed Fan, 20	Biz-Custom	Other	Retro	19919	82%	16287	2.398	2.100	15	\$4,130.00	100%	50%	2	100%	25%	76%	51%	2.3	4.5	4.8	0.5	
1221	Commercial	Ventilation	High Volume Low Speed Fan, 22	Biz-Custom	Other	Retro	21909	83%	18277	2.691	2.357	15	\$4,190.00	100%	50%	3	100%	25%	76%	52%	2.5	5.0	5.2	0.5	
1222	Commercial	Ventilation	High Volume Low Speed Fan, 24	Biz-Custom	Other	Retro	23903	82%	19579	2.882	2.524	15	\$4,230.00	100%	50%	4	100%	25%	76%	52%	2.6	5.3	5.5	0.5	
1223	Commercial	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Other	Retro	13	8%	1	0.000	0.000	15	\$0.40	100%	50%	1	100%	20%	76%	48%	1.5	3.0	3.2	0.5	
1224	Commercial	WholeBldg_HVAC	GREM Controls	Biz-Custom	Other	Retro	0	0%	0	0.000	0.000	5	\$0.40	100%		2	0%	20%	76%	57%	0.0	0.0	0.0	0.0	
1225	Commercial	WholeBldg_HVAC	Demand Control Ventilation	Biz-Custom	Other	Retro	651	38%	246	0.000	0.000	10	\$187.50	100%	50%	3	100%	17%	76%	40%	1.9	0.7	4.9	0.2	
1226	Commercial	WholeBldg_HVAC	Advanced Rooftop Controls	Biz-Custom	Other	Retro	0	0%	0	0.000	0.000	10	\$0.00	100%	0%	4	100%	17%	76%	57%	#DIV/0!	0.0	0.0	0.0	
1227	Commercial	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom	Other	Retro	7	15%	1	0.000	0.000	15	\$0.12	100%	50%	5	100%	0%	76%	54%	4.9	9.9	9.5	0.5	
1228	Commercial	WholeBldg	WholeBlg - Com RET	Biz-NC/Retrofit	Other	Retro	7	15%	1	0.000	0.000	12	\$0.40	100%	50%	1	80%	0%	76%	48%	1.3	2.5	2.8	0.5	
1229	Commercial	WholeBldg	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Other	Retro	1150	1%	6	0.001	0.001	30	\$9.28	100%	50%	2	100%	20%	76%	29%	0.6	1.2	1.7	0.4	
1230	Commercial	WholeBldg_NC	WholeBlg - Com NC	Biz-NC/Retrofit	Other	NC	4	25%	1	0.000	0.000	12	\$0.08	100%	50%	1	100%	60%	76%	55%	6.4	12.7	11.9	0.5	
1231	Industrial	WaterWasteWater	Water Supply & Wastewater treatment pumps and process efficiency	Biz-Custom	Industrial	Retro	5	20%	1	0.000	0.000	11	\$0.45	100%	33%	1	100%	25%	76%	41%	1.0	3.0	2.0	0.5	
1232	Industrial	CompressedAir	Efficient Air Compressor Equipment	Biz-Custom	Industrial	ROB	9	11%	1	0.000	0.000	13	\$0.41	100%	24%	1	100%	25%	76%	41%	1.2	5.1	2.3	0.5	
1233	Industrial	CompressedAir	Efficient Air Compressor Controls	Biz-Custom	Industrial	Retro	15	7%	1	0.000	0.000	3	\$0.12	100%	83%	2	100%	25%	76%	56%	1.2	1.5	2.8	0.4	
1234	Industrial	HVAC	Efficient HVAC Equipment	Biz-Prescriptive HVAC	Industrial	ROB	8	13%	1	0.000	0.000	15	\$0.19	100%	100%	1	100%	25%	76%	57%	4.4	4.4	5.9	0.7	
1235	Industrial	HVAC	Efficient HVAC O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.10	100%	50%	2	100%	25%	76%	54%	2.3	4.6	2.8	0.8	
1236	Industrial	Lighting	Efficient Lighting Equipment	Biz-Prescriptive Light	Industrial	Retro	2	50%	1	0.000	0.000	15	\$0.17	100%	50%	1	100%	25%	74%	59%	3.8	7.6	6.0	0.6	
1237	Industrial	Lighting	Efficient Lighting O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.07	100%	50%	2	100%	25%	74%	63%	2.5	4.9	3.8	0.6	
1238	Industrial	Machine Drive	Efficient MachDr Equipment	Biz-Custom	Industrial	ROB	5	20%	1	0.000	0.000	15	\$0.17	100%	53%	1	100%	25%	76%	53%	3.3	6.3	6.0	0.6	
1239	Industrial	Machine Drive	Efficient MachDr O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.10	100%	50%	2	100%	25%	76%	54%	1.5	3.0	2.8	0.5	
1240	Industrial	Process Heat	Efficient ProcHeat Equipment	Biz-Custom	Industrial	ROB	10	10%	1	0.000	0.000	15	\$0.17	100%	53%	1	100%	25%	76%	53%	3.3	6.3	6.0	0.6	
1241	Industrial	Process Heat	Efficient ProcHeat O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.08	100%	50%	2	100%	25%	76%	55%	1.9	3.7	3.4	0.5	
1242	Industrial	Process Refrig	Efficient ProcRefrig Equipment	Biz-Custom	Industrial	ROB	6	17%	1	0.000	0.000	15	\$0.18	100%	50%	1	100%	25%	76%	52%	3.1	6.3	5.7	0.6	
1243	Industrial	Process Refrig	Efficient ProcRefrig O&M	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.11	100%	50%	2	100%	25%	76%	54%	1.4	2.7	2.6	0.5	
1244	Industrial	Other Process	Efficient Other Facility Process Equipment	Biz-Custom	Industrial	ROB	4	25%	1	0.000	0.000	11	\$0.35	100%	26%	1	100%	25%	76%	43%	1.3	5.0	2.4	0.5	
1245	Industrial	Other Process	Efficient Other Facility Process O&M	Biz-Custom	Industrial	Retro	14	7%	1	0.000	0.000	11	\$0.30	100%	30%	2	100%	25%	76%	46%	1.5	5.0	2.7	0.5	
1246	Industrial	WholeBldg	Power Distribution (Transformers)	Biz-Custom	Industrial	Retro	179	1%	1	0.000	0.000	30	\$1.17	100%	13%	1	100%	25%	76%	21%	0.7	5.5	1.4	0.5	
1247	Industrial	WholeBldg	Strategic Energy Management	Biz-Custom	Industrial	Retro	33	3%	1	0.000	0.000	3	\$0.09	100%	50%	2	100%	25%	76%	55%	1.7	3.3	3.1	0.5	
1248	Agriculture	Motors	Efficient Motor Pmp Equipment - Q1 Cost	Biz-Agriculture	Agriculture	ROB	8	13%	1	0.000	0.000	15	\$0.01	100%	100%	1	100%	20%	76%	57%	51.1	51.1	94.1	0.5	
1249	Agriculture	Motors	Efficient Motor Pmp Equipment - Q2 Cost	Biz-Agriculture	Agriculture	ROB	8	13%	1	0.000	0.000	15	\$0.02	100%	100%	1	100%	20%	76%	57%	25.5	25.5	47.6	0.5	
1250	Agriculture	Motors	Efficient Motor Pmp Equipment - Q3 Cost	Biz-Agriculture	Agriculture	ROB	8	13%	1	0.000	0.000	15	\$0.05	100%	100%	1	100%	20%	76%	57%	10.2	10.2	19.6	0.5	
1251	Agriculture	Motors	Efficient Motor Pmp O&M	Biz-Agriculture	Agriculture	Retro	33	3%	1	0.000	0.000	3	\$0.10	100%	50%	2	100%	20%	76%	54%	1.3	2.7	2.8	0.5	
1252	Agriculture	Refrigeration	Efficient Refrigeration Equipment	Biz-Agriculture	Agriculture	ROB	6	16%	1	0.000	0.000	15	\$0.18	100%	44%	1	100%	20%	64%	41%	2.6	5.8	5.6	0.5	
1253	Agriculture	Lighting	Efficient Lighting	Biz-Agriculture	Agriculture	Retro	2	42%	1	0.000	0.000	15	\$0.17	100%	47%	1	100%	20%	74%	49%	2.7	5.8	5.9	0.5	
1254	Agriculture	Lighting	Grow Lighting	Biz-Agriculture	Agriculture	Retro	3	39%	1	0.000	0.000	15	\$0.27	100%	30%	2	100%	40%	74%	45%	2.0	6.8	3.8	0.5	
1255	Agriculture	Ventilation	Efficient Ventilation	Biz-Agriculture	Agriculture	Retro	2	53%	1	0.000	0.000	10	\$0.32	100%	44%	1	100%	20%	76%	47%	1.2	2.7	2.6	0.5	
1256	Agriculture	HVAC	HVAC	Biz-Agriculture	Agriculture	ROB	8	13%	1	0.000	0.000	15	\$0.19	100%	74%	1	100%	20%	76%	54%	2.7	3.6	5.6	0.5	

APPENDIX C. Program Participation Measure Data

TABLE C-1: RESIDENTIAL PROGRAM MEASURE REBATES AND PARTICIPATION – NORTH DAKOTA

	Rebate	Unit	2024	2025	2026	2027	2028
HEIP							
Air Sealing	\$100.00	per home (avg.)	26	36	47	56	63
Air Source Heat Pump Furnace baseline	\$910.00	per system	2	3	5	8	12
Attic Fan	\$60.00	per device	42	75	97	119	147
Basement Insulation	\$350.00	per home (avg.)	11	16	20	24	27
Bathroom Aerator	\$3.50	per device	69	124	161	197	244
Central Air Conditioner	\$225.00	per system	5	10	17	27	39
Ductless AC	\$180.00	per system	2	5	8	12	17
Energy Recovery Ventilator	\$1,500.00	per system	2	3	4	5	6
Exterior Lighting Controls	\$20.00	per home (avg.)	294	405	585	799	1,031
HVAC - Ductless Heat Pump	\$420.00	per system	4	6	9	14	20
HVAC - Ductless Heat Pump - Electric resistance	\$640.00	per system	2	4	6	9	12
Insulation - Duct Sealing	\$225.00	per home (avg.)	12	17	22	27	30
Kitchen Aerator	\$3.50	per device	34	62	80	98	122
Pipe Wrap	\$5.50	per home (avg.)	30	53	69	85	105
Room Air Conditioner	\$20.00	per device	40	60	85	117	156
Shower Valve	\$20.00	per device	65	118	153	187	231
Showerhead	\$9.00	per device	65	118	153	187	231
Smart Thermostat	\$80.00	per thermostat	29	39	48	61	85

TABLE C-2: LOW INCOME PROGRAM MEASURE REBATES AND PARTICIPATION – NORTH DAKOTA

	Rebate	Unit	2024	2025	2026	2027	2028
Air Sealing	\$200.00	per home (avg.)	41	44	43	40	35

	Rebate	Unit	2024	2025	2026	2027	2028
Air Source Heat Pump Furnace baseline	\$1,800.00	per system	1	1	2	3	5
Attic Insulation - Heat pump	\$900.00	per home (avg.)	12	14	14	14	13
Basement Insulation	\$700.00	per home (avg.)	12	12	12	11	10
Bathroom Aerator	\$7.00	per device	82	145	184	221	268
Central Air Conditioner	\$450.00	per system	4	8	13	19	27
Ductless AC	\$360.00	per system	2	3	5	7	10
Energy Star Door	\$1,250.00	per device	1	1	1	1	1
Exterior LED Light Fixture	\$40.00	per fixture	59	82	110	140	170
Heat pump baseline	\$2,050.00	per system	0	0	0	0	0
HVAC - Ductless Heat Pump - Electric resistance baseline	\$1,280.00	per system	1	1	2	3	5
HVAC - Ductless Heat Pump	\$850.00	per system	2	3	4	6	8
Insulation - Duct Sealing	\$450.00	per home (avg.)	14	15	14	13	12
Kitchen Aerator	\$7.00	per device	41	72	92	110	134
LED Lighting	\$7.00	per device	574	804	1072	1361	1663
Pipe Wrap	\$10.00	per home (avg.)	38	67	86	103	125
Res - Heat Pump Water Heater	\$780.00	per system	1	3	5	9	13
Room Air Conditioner	\$40.00	per device	21	31	43	59	78
Shower Valve	\$40.00	per device	30	52	67	80	97
Showerhead	\$12.00	per device	80	141	179	215	262
Smart Thermostat	\$180.00	per thermostat	51	66	81	100	138
Wall Insulation - Electric Furnace	\$1,680.00	per home (avg.)	19	20	20	18	16
Wall Insulation - Heat pump	\$650.00	per home (avg.)	10	10	10	10	8

TABLE C-3: COMMERCIAL PROGRAM MEASURE REBATES AND PARTICIPATION – NORTH DAKOTA

	Rebate	Unit	2024	2025	2026	2027	2028
Commercial Prescriptive							

	Rebate	Unit	2024	2025	2026	2027	2028
Daylighting Controls	\$25.00	per control	3,010	3,980	4,775	5,213	5,421
Dishwasher - Commercial	\$150.00	per dishwasher	0	1	1	1	0
Exterior Area Fixture	\$100.00	per fixture	96	82	64	48	0
LED Downlight Fixture	\$10.00	per fixture	5,011	4,761	4,103	3,256	2,520
LED High Bay	\$130.00	per fixture	19	18	15	12	9
LED Interior Directional	\$20.00	per fixture	217	201	169	131	99
LED Low Bay	\$20.00	per fixture	141	136	118	94	73
LED T8 Tube Replacement	\$0.75	per lamp	38,009	38,090	34,349	28,294	22,562
LED Troffer	\$30.00	per fixture	662	611	514	400	304
Efficient Lighting Equipment	\$0.07	per kwh saved	159,274	180,463	182,394	166,268	144,710
Commercial Custom							
Compressed Air	\$0.07	per kwh saved	24,034	32,363	39,387	48,109	59,043
Cooling	\$0.07	per kwh saved	149	185	245	436	546
NC Whole Building	\$0.07	per kwh saved	748,212	786,902	879,396	940,705	1,041,637
Refrigeration	\$0.07	per kwh saved	52	62	79	97	116
Rx Ref Optimization	\$0.07	per kwh saved	13,569	15,061	17,730	21,272	28,804
Strip Curtain	\$0.07	per kwh saved	19	24	32	41	68
Ventilation	\$0.07	per kwh saved	9	13	16	18	22
VFD	\$0.07	per kwh saved	7	10	12	14	17
Ind Compressed Air	\$0.07	per kwh saved	1,437	2,221	2,877	4,714	6,388
Process Refrigeration	\$0.07	per kwh saved	712	1,265	1,850	3,021	4,204

TABLE C-4: RESIDENTIAL PROGRAM MEASURE REBATES AND PARTICIPATION – MONTANA

	Rebate	Unit	2024	2025	2026	2027	2028
HEIP							
Air Sealing	\$100.00	per home (avg.)	5	8	11	13	16
Air Source Heat Pump Furnace baseline	\$910.00	per system	0	1	1	2	2
Attic Fan	\$60.00	per device	12	22	28	35	43
Basement Insulation	\$350.00	per home (avg.)	3	4	6	7	8
Bathroom Aerator	\$3.50	per device	17	30	39	47	59
Central Air Conditioner	\$225.00	per system	1	2	4	6	9
Ductless AC	\$180.00	per system	0	1	2	2	4

	Rebate	Unit	2024	2025	2026	2027	2028
Energy Recovery Ventilator	\$1,500.00	per system	71	96	139	192	249
Exterior Lighting Controls	\$20.00	per home (avg.)	1	1	2	3	4
HVAC - Ductless Heat Pump	\$420.00	per system	0	1	1	2	3
HVAC - Ductless Heat Pump - Electric resistance	\$640.00	per system	3	4	5	7	8
Insulation - Duct Sealing	\$225.00	per home (avg.)	8	15	19	24	29
Kitchen Aerator	\$3.50	per device	297	398	579	797	1038
Pipe Wrap	\$5.50	per home (avg.)	7	13	17	21	26
Heat Pump Water Heater	\$390.00	per device	0	1	3	4	6
Room Air Conditioner	\$20.00	per device	9	15	21	30	40
Shower Valve	\$20.00	per device	18	33	42	52	64
Showerhead	\$9.00	per device	18	33	42	52	64
Smart Thermostat	\$80.00	per thermostat	8	15	19	24	29

TABLE C-5: LOW INCOME PROGRAM MEASURE REBATES AND PARTICIPATION – MONTANA

	Rebate	Unit	2024	2025	2026	2027	2028
Air Sealing	\$200.00	per home (avg.)	9	10	10	9	8
Air Source Heat Pump Furnace baseline	\$1,800.00	per system	0	0	1	1	1
Attic Insulation - Heat pump	\$900.00	per home (avg.)	4	4	5	4	4
Basement Insulation	\$700.00	per home (avg.)	6	7	7	6	5
Bathroom Aerator	\$7.00	per device	18	32	41	49	59
Central Air Conditioner	\$450.00	per system	1	2	3	4	6
Ductless AC	\$360.00	per system	0	1	1	1	2
Exterior LED Light Fixture	\$40.00	per fixture	16	22	29	37	45
HVAC - Ductless Heat Pump - Electric resistance baseline	\$1,280.00	per system	0	0	1	1	1

	Rebate	Unit	2024	2025	2026	2027	2028
HVAC - Ductless Heat Pump	\$850.00	per system	0	1	1	2	2
Insulation - Duct Sealing	\$450.00	per home (avg.)	8	8	8	7	7
Kitchen Aerator	\$7.00	per device	9	16	20	24	30
LED Lighting	\$7.00	per device	148	209	277	352	429
Pipe Wrap	\$10.00	per home (avg.)	9	15	19	23	28
Heat Pump Water Heater	\$780.00	per system	0	1	1	2	3
Room Air Conditioner	\$40.00	per device	5	7	10	14	19
Shower Valve	\$40.00	per device	7	12	16	19	23
Showerhead	\$12.00	per device	19	34	43	51	62
Smart Thermostat	\$180.00	per thermostat	9	15	19	23	28
Wall Insulation - Electric Furnace	\$1,680.00	per home (avg.)	4	4	4	4	3
Wall Insulation - Heat Pump	\$650.00	per home (avg.)	0	0	0	0	0

TABLE C-6: COMMERCIAL PROGRAM MEASURE REBATES AND PARTICIPATION – MONTANA

	Rebate	Unit	2024	2025	2026	2027	2028
Commercial Prescriptive							
Daylighting Controls	\$25.00	per control	567	670	763	833	866
Exterior Area Fixture	\$100.00	per fixture	92	70	53	39	0
LED Downlight Fixture	\$10.00	per fixture	1372	1151	932	733	564
LED High Bay	\$130.00	per fixture	6	5	4	3	2
LED Interior Directional	\$20.00	per fixture	428	353	282	219	167
LED Low Bay	\$20.00	per fixture	46	39	32	26	20
LED T8 Tube Replacement	\$0.75	per lamp	13491	11595	9575	7650	5953
LED Wallpack	\$100.00	per fixture	262	216	173	135	103
Occupancy Sensors	\$30.00	per control	62	47	36	26	0
LED Troffer	\$30.00	per fixture	703	798	868	900	887
Efficient Lighting Equipment	\$0.07	per kwh saved	5,797	6,330	6,545	6,407	5,955
Commercial Custom							
Compressed Air	\$0.07	per kwh saved	7,894	12,411	15,692	19,759	24,866
Cooling	\$0.07	per kwh saved	46	67	92	167	214

	Rebate	Unit	2024	2025	2026	2027	2028
NC Whole Building	\$0.07	per kwh saved	113,445	138,514	164,480	190,963	217,866
Refrigeration	\$0.07	per kwh saved	30	42	54	68	85
Rx Ref Optimization	\$0.07	per kwh saved	5,688	7,363	9,002	11,133	15,454
Strip Curtain	\$0.07	per kwh saved	9	13	19	24	42
Ventilation	\$0.07	per kwh saved	3	5	6	8	10
VFD	\$0.07	per kwh saved	2	4	5	6	7
Ind Compressed Air	\$0.07	per kwh saved	30	36	41	46	51
Process Refrigeration	\$0.07	per kwh saved	36	76	118	203	295

TABLE C-7: RESIDENTIAL PROGRAM MEASURE REBATES AND PARTICIPATION – SOUTH DAKOTA

	Rebate	Unit	2024	2025	2026	2027	2028
HEIP							
Air Sealing	\$100.00	per home (avg.)	4	5	7	8	8
Air Source Heat Pump Furnace baseline	\$910.00	per system	0	0	0	0	0
Attic Fan	\$60.00	per device	8	13	16	18	21
Basement Insulation	\$350.00	per home (avg.)	2	3	4	4	4
Bathroom Aerator	\$3.50	per device	12	19	23	27	32
Central Air Conditioner	\$225.00	per system	1	2	3	4	6
Ductless AC	\$180.00	per system	1	1	1	2	3
Energy Recovery Ventilator	\$1,500.00	per system	0	0	0	0	0
Exterior Lighting Controls	\$20.00	per home (avg.)	46	56	76	99	125
HVAC - Ductless Heat Pump	\$420.00	per system	0	0	0	0	0
HVAC - Ductless Heat Pump - Electric resistance	\$640.00	per system	0	0	0	0	0
Insulation - Duct Sealing	\$225.00	per home (avg.)	2	3	3	4	4
Kitchen Aerator	\$3.50	per device	6	9	11	13	16
Pipe Wrap	\$5.50	per home (avg.)	5	8	10	12	15
Room Air Conditioner	\$20.00	per device	7	9	13	16	21
Shower Valve	\$20.00	per device	13	21	26	30	35
Showerhead	\$9.00	per device	13	21	26	30	35

	Rebate	Unit	2024	2025	2026	2027	2028
Smart Thermostat	\$80.00	per thermostat	6	10	11	14	16

TABLE C-8: LOW INCOME PROGRAM MEASURE REBATES AND PARTICIPATION – SOUTH DAKOTA

	Rebate	Unit	2024	2025	2026	2027	2028
Air Sealing	\$100.00	per system	4	5	7	8	8
Attic Fan	\$60.00	per home (avg.)	8	13	15	18	21
Basement Insulation	\$350.00	per fixture	2	3	4	4	4
Bathroom Aerator	\$3.50	per system	12	19	23	27	32
Central Air Conditioner	\$225.00	per system	1	2	3	4	6
Ductless AC	\$180.00	per home (avg.)	1	1	1	2	3
Exterior Lighting Controls	\$20.00	per system	46	56	76	99	125
Insulation - Duct Sealing	\$225.00	per system	2	3	3	4	4
Kitchen Aerator	\$4.00	per home (avg.)	6	9	11	13	16
Pipe Wrap	\$5.50	per device	5	8	10	12	15
Room Air Conditioner	\$20.00	per home (avg.)	7	9	13	16	21
Shower Valve	\$20.00	per device	13	21	26	30	35
Showerhead	\$6.00	per home (avg.)	13	21	26	30	35
Smart Thermostat	\$80.00	per device	6	10	11	14	16

TABLE C-9: COMMERCIAL PROGRAM MEASURE REBATES AND PARTICIPATION – SOUTH DAKOTA

	Rebate	Unit	2024	2025	2026	2027	2028
Commercial Prescriptive							
Daylighting Controls	\$25.00	per control	216	289	365	398	414
Dishwasher - Commercial	\$150.00	per dishwasher	0	0	0	0	0
Exterior Area Fixture	\$100.00	per fixture	8	6	5	3	-
LED Downlight Fixture	\$10.00	per fixture	394	370	333	261	200
LED High Bay	\$130.00	per fixture	1	1	1	-	-
LED Interior Directional	\$20.00	per fixture	14	13	11	8	7

	Rebate	Unit	2024	2025	2026	2027	2028
LED Low Bay	\$20.00	per fixture	12	10	10	8	6
LED T8 Tube Replacement	\$0.75	per lamp	3,462	3,349	3,073	2,455	1,910
LED Troffer	\$30.00	per fixture	55	52	45	35	26
Occupancy Sensors	\$30.00	per control	13	16	19	20	20
Efficient Lighting Equipment	\$0.07	per kwh saved	17,166	20,599	23,131	22,148	20,147
Commercial Custom							
Compressed Air	\$0.07	per kwh saved	2,968	4,663	5,895	7,423	9,346
Cooling	\$0.07	per kwh saved	13	20	27	48	61
NC Whole Building	\$0.07	per kwh saved	58,991	72,089	85,470	99,078	112,862
Refrigeration	\$0.07	per kwh saved	5	8	14	17	19
Rx Ref Optimization	\$0.07	per kwh saved	1,918	2,482	3,035	3,755	5,213
Strip Curtain	\$0.07	per kwh saved	5	7	10	12	21
VFD	\$0.07	per kwh saved	1	1	1	1	1
Ind Compressed Air	\$0.07	per kwh saved	239	429	577	972	1348
Process Refrigeration	\$0.07	per kwh saved	386	798	1,211	2,035	2,899

PREPARED BY GDS ASSOCIATES, INC.

Montana Dakota Utilities (MDU)

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October 2023