

Attachment 3
Energy Efficiency Study



Black Hills Power South Dakota
2014-2016
Demand-Side
Management Portfolio

Prepared by:

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1. Portfolio Overview

Black Hills Power (“BHP” or “Company”) is an investor-owned utility that provides electricity to approximately 68,000 customers in western South Dakota, northern Wyoming and southeastern Montana. Black Hills Power is part of Black Hills Corporation, which provides natural gas and electricity to more than 765,000 customers throughout the Midwest region of the United States.

Black Hills Power retained Applied Energy Group (“AEG”) to develop a demand-side management (“DSM”) portfolio for Program Years 2014, 2015, and 2016 for the Company’s South Dakota service area. The three key tenets of BHP’s DSM programs are:

- **Black Hills Power customers benefit from energy efficiency programs.** Energy efficiency can result in lower energy bills, immediately reducing program participant’s consumption of electricity. Furthermore, the programs are designed to be inclusive, giving all customers the opportunity to benefit from participating in BHP’s energy efficiency programs.
- **The service territory benefits from energy efficiency programs.** As part of the overall strategy for meeting the needs of its customers, cost-effective energy-efficiency programs offer an alternative to the construction of infrastructure and purchase of fuel for generation.
- **State energy goals benefit from energy-efficiency programs.** Effective energy efficiency programs can help BHP and the State of South Dakota meet the renewable and recycled energy objective that ten percent of all electricity sold at retail within South Dakota by 2015 be obtained from renewable, recycled, and conserved energy sources.¹

Based on experience in other jurisdictions, including those where other Black Hills Corporation companies operate, the proposed programs have been designed to maximize participation. In addition to ensuring participation while efficiently utilizing budget resources, incentives have been targeted to promote the adoption of qualifying energy efficiency measures that maximize savings. BHP’s program portfolio uses a combination of education and customer incentives to advance energy efficiency in South Dakota.

TABLE 1: PORTFOLIO SUMMARY BY PROGRAM YEAR

	Participation	MWh Savings	Coincident kW Savings	Total Budget
2014	12,980	3,255	494	\$678,799
2015	16,009	4,106	621	\$841,884
2016	19,019	4,900	738	\$996,308

TABLE 2: COST-EFFECTIVENESS BY PROGRAM YEAR

	2014	2015	2016
Residential Programs	1.06	1.08	1.10
Commercial & Industrial Programs	1.50	1.55	1.58
Total Portfolio	1.31	1.36	1.39

2. Portfolio Development

The Total Resource Cost Test (“TRC”) was the primary method of assessing the cost-effectiveness of energy efficient measures and programs. The TRC test is a widely-accepted methodology that has been

¹ See [South Dakota Codified Laws](#) 49-34A-101 through 49-34A-106.

used across the United States for over twenty-five years. TRC measures the net costs and benefits of an energy efficiency program as a resource option based on the total costs of the program, including both the participant’s and the utility’s costs. This test represents the combination of the effects of a program on both participating and non-participating customers.

Four other commonly used and standardized benefit-cost tests were utilized to analyze cost-effectiveness from different perspectives:

- **Participant Cost Test** quantifies the benefits and costs to the customer due to program participation.
- **Ratepayer Impact Measure (“RIM”) Cost Test** measures what happens to a customer’s rates due to changes in utility revenues and operating costs.
- **Utility Cost Test** measures the net costs of a program as a resource option based on the costs incurred by the program administrator, excluding any net costs incurred by the participant.
- **Societal Cost Test** measures the effects of a program on society as a whole (the Societal Test is a variation on TRC and often includes the non-energy benefits associated with energy efficient technologies).

The cost-effectiveness analysis was performed using Black Hills Power -- South Dakota-specific data. The software used to perform the benefit-cost screening has been adapted from Minnesota Office of Energy Security “BenCost” software and is consistent with the California Standard Practice Manual. The input data gathered for the model included:

TABLE 3: COST-EFFECTIVENESS MODEL INPUTS

General Inputs	Specific-Project Inputs
Retail Rate (\$/kWh)	Utility Project Costs
Commodity Cost (\$/kWh)	Direct Participant Project Costs
Demand Cost (\$/kW-Year)	Project Life (Years)
Environmental Damage Cost (\$/kWh)	kWh/Participant Saved
Discount Rate (%)	kW/Participant Saved
Escalation Rate (%)	Number of Participants
Line Losses (%)	

Energy efficient measure energy and demand impacts were calculated using generally accepted engineering algorithms based on a set of reasonable assumptions. Because of the diversity in equipment and energy consumption patterns across multiple building types and end-uses, there is variability in these savings estimates as they relate to program design and target markets, particularly at the planning stage of these programs. The project-specific inputs were developed using a variety of sources, including BHP South Dakota’s historic demand-side management (“DSM”) programs, other Black Hills’ company energy efficiency programs, ENERGY STAR, the Consortium for Energy Efficiency and additional regional and national sources.

Measures were bundled into programs and re-screened for cost-effectiveness to ensure BHP’s DSM programs and portfolio is cost-effective. The portfolio incorporates measures that were cost-effective on a stand-alone basis as well as measures that were not cost-effective but were determined to provide ample benefits to BHP customers.

3. DSM Planned Portfolio

Black Hills Power is proposing to continue, with modifications, its DSM portfolio for the 2014 – 2016 program years. The DSM portfolio is comprised of seven residential programs and three commercial and industrial programs, which provide a variety of opportunities for customers to participate in energy efficiency programs offered by the Company.

A few of the programs were modified from the 2011 – 2013 Energy Efficiency Plan, currently being implemented by BHP. The proposed 2014 – 2016 DSM Portfolio programs include:

Residential

- **NEW Residential Lighting and Appliances.** A new lighting and appliance program will offer residential customers rebates for the purchase of qualifying CFLs, LEDs, refrigerators, light fixtures and power strips. Lighting is prevalent in residences and efficient lighting represents a significant source of savings.
- **Appliance Recycling.** BHP will begin offering a \$50 rebate for recycling a freezer.
- **Residential High Efficiency HVAC.** BHP will no longer offer a rebate for air source heat pump retro-commissioning. The measure is no longer cost-effective based on the TRC benefit-cost test. The rebate for air source heat pumps will decrease from \$150 per ton to \$75 per ton due to a reduction in equipment costs. An incentive will be offered to customers for the purchase and installation of an efficient heat pump water heater at \$5 per tank gallon.
- **NEW Whole House Efficiency.** BHP and Montana-Dakota Utilities (“MDU”) will jointly offer a Whole House Efficiency Program to residential customers, providing a home energy audit, air sealing and low-cost, easy-to-install measures at no cost to the customer.
- **Residential Audit.** BHP will no longer offer residential customer on-site audits (an on-line approach will be provided) due to significant implementation costs and low historical participation. BHP will begin jointly offering a Whole House Efficiency Program with MDU (see above).
- **Student- Based Education.** No program changes.
- **Weatherization.** No program changes.

Commercial & Industrial

- **NEW Small Business Direct Install.** A new direct install lighting program will offer small commercial customers a free lighting audit and incentives of up to 60 percent to cover equipment and installation costs. Small commercial customers are typically a hard-to-reach market that does not have the capital available to take on energy efficiency improvements.
- **C&I Prescriptive.** The list of qualifying prescriptive measures was modified based on current federal baseline standards and equipment costs.
- **C&I Custom.** No program changes.

Residential Lighting and Appliance Program

Target Market	Lighting and appliance retailers and residential customers.																								
Description	<p>The program’s primary objective is to secure energy savings by incentivizing the purchase of ENERGY STAR® qualified lighting and appliances. Mail-in rebates would be available to residential customers that purchase efficient appliances, including:</p> <ul style="list-style-type: none"> – ENERGY STAR Lighting Fixtures – ENERGY STAR Refrigerators – Advanced Power Strips <p>Rebates will be mailed to the customer upon receipt and approval of the rebate application.</p> <p>The exact method of distributing the CFL and LED bulbs has not been determined. If a point-of-purchase method is selected, customers will be eligible to receive instant rebates at participating retailers. The rebates could vary depending on the participating retailer, retail location and lighting manufacturer.</p>																								
Program Goals	<ul style="list-style-type: none"> – Help residential customers reduce their electricity bills. – Educate residential customers about the benefits of efficient lighting and appliances. – Demonstrate persistent energy savings and provide other benefits to end-users such as improved health, safety and comfort. 																								
Eligible Measures and Incentives	<p>The CFL and LED bulb incentives may vary upon determination of the exact method of distribution.</p> <table border="1"> <tr> <td>CFL</td> <td>\$1.00</td> </tr> <tr> <td>LED</td> <td>\$7.50</td> </tr> <tr> <td>ENERGY STAR Refrigerator</td> <td>\$40</td> </tr> <tr> <td>ENERGY STAR Lighting Fixture</td> <td>\$10</td> </tr> <tr> <td>Advanced Power Strip</td> <td>\$10</td> </tr> </table>	CFL	\$1.00	LED	\$7.50	ENERGY STAR Refrigerator	\$40	ENERGY STAR Lighting Fixture	\$10	Advanced Power Strip	\$10														
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Marketing Strategy	Marketing activities may include bill inserts, email blasts and community events. Implementation and marketing will be reviewed and updated upon determination of the exact method of distributing the CFL and LED bulbs.																								
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Residential Appliance Recycling Program

Target Market	Residential customers disposing of secondary inefficient refrigerators or freezers.																								
Description	<p>The Appliance Recycling Program will encourage customers to turn in their old inefficient refrigerators and freezers, removing them from the electric system and disposing of them in an environmentally safe and responsible manner. Customers will receive \$50 for each secondary refrigerator or freezer recycled, limited to 2 rebates per program year. The refrigerator/freezer must be in working condition and between 10 and 30 cubic feet in size. The refrigerators and freezers will be picked-up at no cost to the customer.</p> <p>BHP will engage a third-party implementation contractor to handle scheduling, transportation and disposal of the refrigerators and freezers. The contractor will specialize in appliance recycling and have access to a recycling facility.</p>																								
Program Goals	<ul style="list-style-type: none"> – Promote appliance recycling. – Educate customers about the benefits of recycling their inefficient appliances. – Influence consumer behavior by encouraging residential customers to avoid replacing recycled secondary refrigerators or freezers. 																								
Marketing Strategy	Marketing activities may include bill inserts, print and electronic advertisements, community events, billboards, radio advertisements, and community events.																								
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Residential High Efficiency HVAC Program

Target Market	Residential customers, including owners of rental properties and new construction, as well as HVAC contractors.																																
Description	<p>The objective of the program is to encourage residential customers to purchase and install energy-efficient HVAC equipment. Residential customers will be eligible to receive financial incentives for the purchase and installation of the following efficient equipment:</p> <ul style="list-style-type: none"> – Heat pump, (1-5 tons) SEER ≥15 and HSPF ≥8.5 – Early retirement heat pump, (1-5 tons) SEER ≥15 and HSPF ≥8.5 – Heat pump water heaters, EF ≥2.0 – Electric storage water heaters, EF ≥0.95 – ENERGY STAR® Geothermal, (1-5 tons) – Early retirement geothermal, ENERGY STAR®, (1-5 tons) – Replace existing electric furnace with heat pump, (1-5 tons) SEER ≥15 and HSPF ≥8.5 																																
Program Goals	<ul style="list-style-type: none"> – Educate customers about the benefits of installing high efficiency HVAC equipment. – Develop partnerships with contractors to bring efficient systems to market. – Help customers reduce their electricity bills. 																																
Eligible Measures and Incentives	<table border="1"> <tr> <td>Heat Pump</td> <td>\$75 per ton</td> </tr> <tr> <td>Early Retirement Heat Pump</td> <td>\$200 per ton</td> </tr> <tr> <td>Heat Pump Water Heater</td> <td>\$5 per tank gallon</td> </tr> <tr> <td>Electric Storage Water Heater</td> <td>\$1.50 per tank gallon</td> </tr> <tr> <td>Geothermal</td> <td>\$200 per ton</td> </tr> <tr> <td>Early Retirement Geothermal</td> <td>\$300 per ton</td> </tr> <tr> <td>Heat Pump Replace Electric Furnace</td> <td>\$1,500 per system</td> </tr> </table>	Heat Pump	\$75 per ton	Early Retirement Heat Pump	\$200 per ton	Heat Pump Water Heater	\$5 per tank gallon	Electric Storage Water Heater	\$1.50 per tank gallon	Geothermal	\$200 per ton	Early Retirement Geothermal	\$300 per ton	Heat Pump Replace Electric Furnace	\$1,500 per system																		
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Whole House Efficiency Program

Target Market	Residential customers that own or rent a residence.																								
Description	<p>The Whole House Efficiency Program will encourage whole-house improvements to existing homes by enhancing home energy audits and promoting comprehensive retrofit services. Black Hills Power and Montana-Dakota Utilities (“MDU”) will jointly offer a Whole House Efficiency Program to residential customers. The program will provide a home energy audit, air sealing and low-cost, easy-to-install measures at no cost to the customer. The home energy audit will identify efficiency improvements and provide information on BHP and MDU energy efficiency programs. Measures offered through the program will include:</p> <ul style="list-style-type: none"> – Air sealing – CFLs (up to 6 total) – Faucet aerator – Low flow showerhead – Hot water pipe insulation – Water heater temperature setback – Water heater tank wrap 																								
Program Goals	<ul style="list-style-type: none"> – Encourage energy saving behavior and whole house improvements. – Increase awareness of energy efficiency and energy use in the home. – Educate residential customers about the benefits of energy efficiency and the opportunities to reduce energy consumption. – Increase awareness of and participation in other BHP energy efficiency programs. 																								
Eligible Measures and Incentives	A home energy audit, air sealing and installation of measures will be provided at no cost to the customer.																								
Marketing Strategy	An implementation contractor selected by Black Hills Power and MDU will assist with program awareness and marketing. Marketing activities may include direct outreach to customers, including bill inserts, email blasts, and community outreach events.																								
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Estimated Savings	<table border="1"> <thead> <tr> <th></th> <th>PY 2014</th> <th>PY 2015</th> <th>PY 2016</th> </tr> </thead> <tbody> <tr> <td>Energy (kWh) Savings</td> <td>85,147</td> <td>106,700</td> <td>106,700</td> </tr> <tr> <td>Demand (kW) Savings</td> <td>22</td> <td>28</td> <td>28</td> </tr> </tbody> </table>		PY 2014	PY 2015	PY 2016	Energy (kWh) Savings	85,147	106,700	106,700	Demand (kW) Savings	22	28	28												
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Estimated Budget	<p>BHP’s portion of the budget is presented.</p> <table border="1"> <thead> <tr> <th>PY 2014</th> <th>PY 2015</th> <th>PY 2016</th> </tr> </thead> <tbody> <tr> <td>\$28,009</td> <td>\$35,011</td> <td>\$35,011</td> </tr> </tbody> </table>	PY 2014	PY 2015	PY 2016	\$28,009	\$35,011	\$35,011																		
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Year 3	1.05	1.05	1.29	n/a	0.25																				

Residential Audit Program

Target Market	Residential customers.																								
Description	The objective of the Residential Audit Program is to encourage energy education and conservation. The program will provide customers access to a free online tools to analyze the energy efficiency of their home, and educational materials regarding energy efficiency and conservation.																								
Program Goals	<ul style="list-style-type: none"> – Increase awareness of energy efficiency and energy use. – Educate residential customers about the benefits of energy efficiency and the opportunities to reduce energy consumption. – Increase awareness of and participation in other BHP energy efficiency programs. 																								
Eligible Measures and Incentives	The program will be provided at no cost to the customer.																								
Marketing Strategy	The program will be marketed on the BHP DSM website, at community events and in conjunction with other residential DSM Programs.																								
Estimated Participation	<table border="1"> <thead> <tr> <th>PY 2014</th> <th>PY 2015</th> <th>PY 2016</th> </tr> </thead> <tbody> <tr> <td>400</td> <td>400</td> <td>400</td> </tr> </tbody> </table>	PY 2014	PY 2015	PY 2016	400	400	400																		
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Year 2	0.53	0.53	0.67	n/a	0.20																				
Year 3	0.53	0.53	0.67	n/a	0.20																				

School-Based Education Program

Target Market	School administrators (including teachers), students and parents.																								
Description	The School-Based Education Program seeks long-term energy savings through enhanced education and awareness of energy efficiency among 5 th grade students within BHP's service territory. Students will participate in a classroom lesson plan and receive a kit of low-cost energy savings measures at no cost. The kits will help ideas and concepts to resonate with participating students, providing hands-on methods for the students to understand energy and conservation.																								
Goals	<ul style="list-style-type: none"> – Educate students about the benefits of efficiency and the opportunities to reduce energy consumption. – Increase awareness of and participation in other BHP energy efficiency programs. – Long-term energy savings through enhanced education and awareness of energy efficiency among students and parents. 																								
Incentives	Educational materials and Energy Education Kits are provided at no cost.																								
Marketing Strategy	The program is marketed to school officials, including teachers, principals and other school personnel. Information on the benefits of this program will be explained to teachers or principals prior to handing out the energy kits. Teachers and principals will also receive information on how to present the kits to students. A survey completed by BHP's School-Based Educational vendor showed that there are about 2,150 potential participants. BHP rotates the offering of the program to different schools each year.																								
Estimated Participation	<table border="1"> <thead> <tr> <th>PY 2014</th> <th>PY 2015</th> <th>PY 2016</th> </tr> </thead> <tbody> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> </tbody> </table>	PY 2014	PY 2015	PY 2016	300	300	300																		
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Year 2	1.05	1.05	1.33	n/a	0.24																				
Year 3	1.07	1.07	1.35	n/a	0.24																				

Weatherization Program

Target Market	Low-income residential homeowners and renters.																												
Description	The Weatherization Program’s long-term goal is to deliver long-term energy savings and bill reductions to low-income customers. The program delivers weatherization measures to low income homeowners and renters, at no cost to the participant. Home efficiency is improved through the installation of energy saving measures, such as caulking, weather stripping, CFLs, hot water pipe insulation, water heater temperature setback and water heater tank wrap.																												
Goals	<ul style="list-style-type: none"> – Demonstrate persistent energy savings. – Encourage energy saving behavior. – Help residential customers reduce their electricity bills. 																												
Marketing Strategy	Marketing includes community events, internet, and nonprofit organizations within the service territory.																												
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Year 3	0.49	0.49	0.61	n/a	0.19																								

Small Business Direct Install Program

Target Market	Small commercial customers.																								
Description	<p>The Small Business Direct Install Program’s goal is to improve lighting efficiency for small commercial customers. Small commercial customers will be offered a free lighting energy audit that includes information on potential energy savings and anticipated payback as well as incentives that cover up to 60% percent of the equipment and installation costs. Eligible measures will include permanent interior lighting fixtures and ballasts.</p> <p>An implementation contractor will perform the lighting audits, install the lighting measures, and provide information on lighting incentives. Incentives will be assigned directly to the contractor, so that the value of utility incentives is reduced directly from the sale price of the project.</p>																								
Goals	<ul style="list-style-type: none"> – Effectively installing efficient lighting equipment through the program. – Educating commercial customers about the benefits of new energy efficient lighting technologies. – Building consumer confidence in the reliability of savings estimates through an educated sales force and a highly tailored program approach. 																								
Incentives	Incentives will cover up to 60% of the equipment and installation costs.																								
Marketing Strategy	The implementation contractor will market the program to business owners, property owners and tenants and participates in trade association and business organization events.																								
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	TRC	Utility	Societal	Participant	Ratepayer Impact																				
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Year 3	1.04	1.22	1.29	9.37	0.25																				

Commercial and Industrial Rebate Program

Target Market	Commercial and industrial customers																																																
Description	<p>The Commercial and Industrial Rebate Program will encourage the purchase and installation of energy efficient equipment by providing incentives to lower the cost of purchasing efficient equipment for commercial and industrial facilities. The program will consist of prescriptive and custom rebates.</p> <p>Prescriptive. Pre-qualified prescriptive rebates will be available for new construction and retrofits. The rebated measures, including lighting, HVAC equipment, motors and variable frequency drives, are proven technologies that are readily available with known performance characteristics (see incentives listed in the table below).</p> <p>Custom. Equipment that does not qualify for a prescriptive rebate will be eligible for a custom rebate. Applications must be pre-approved by BHP before equipment is purchased and installed to ensure they produce a Benefit-Cost Test of 1.0 or higher and have an incremental payback greater than two years. Incentives will be the lesser of the following:</p> <ul style="list-style-type: none"> – A buy-down to a two year payback; or – 50% of the incremental cost. <p>A \$25,000 incentive cap will be imposed per facility per program year. Multiple rebate applications for different measures may be submitted. All C&I customers are eligible to participate in this program. The same customer can participate in more than one measure in the same year (e.g., retrofit a lighting system and upgrade to a more efficient HVAC system).</p>																																																
Goals	<ul style="list-style-type: none"> – Educate customers about the benefits of installing high efficiency equipment. – Demonstrate persistent energy savings. – Help commercial and industrial customers reduce their electricity bills. 																																																
Marketing Strategy	Marketing activities may include newspaper advertisements, email blasts, targeted mailings to customers and contractors, and bill inserts.																																																
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Lighting				
De-Lamping (Retrofit Only)				
De-lamp T12, T12HO, or T8 fixtures to T8 technology. All de-lamping must include high efficiency electronic ballasts. There must be permanent removal of lamps, ballasts and sockets.				
Reduce the number of existing T8 lamps per fixture. Must include low ballast factor (≤ 0.85).	T8 to T8		\$8	per fixture
Replace existing 2-lamp T12 fixtures with a reduced number of T8 lamps. Must include a high-efficiency ballast (low, normal or high ballast factor).	T12 to T8	2 lamps	\$8	per fixture
Replace existing 3- or 4-lamp T12 fixtures with a reduced number of T8 lamps. Must include a high-efficiency ballast (low, normal or high ballast factor).	T12 to T8	3-4 lamps	\$12	per fixture
Fluorescent T8 Lamps with High Efficiency Electronic Ballasts and Low Ballast Factors				
Replace incandescent or T12 systems with T8 systems. Must include high efficiency electronic ballasts.	4' or less	1-2 lamps	\$5	per fixture
		3-4 lamps	\$9	per fixture
	5' to 8'	1-2 lamps	\$8	per fixture
High Performance T8 (Consortium for Energy Efficiency specifications)				
System must have mean lumens per watt ≥ 90 for instant start ballasts or ≥ 88 for programmed rapid start ballasts.	1-2 lamp		\$9	per fixture
	3-4 lamps		\$18	per fixture
Low-Wattage Fluorescent T8 Lamps				
Install 28 Watt or less in existing fixtures with 32 Watt lamps and appropriate ballasts			\$0.50	per lamp
Fluorescent Fixtures with Specular Reflectors				
Each unit shall have a minimum reflectivity of 87% and use T8 or T5 lamps and electronic ballasts.	4' or two 4' tandem wired		\$12	per fixture
	8' or two 8' tandem wired		\$16	per fixture
High-Bay Fluorescent Lamps with Electronic Ballasts				
Replace 400W HID systems with 6-8 lamp T8 or 4-5 Lamp T5HO system.	T8, 4'	6-8 lamps	\$75	per fixture
	T5HO, 4' or less	4-5 lamps		
Replace 400W HID systems with 6 lamp T5HO system.	T5HO, 4' or less	6 lamps	\$40	per fixture
Replace 1000W HID systems with 12-18 lamp T8 or 8-14 T5HO system.	T8, 4'	12-18 lamps	\$125	per fixture
	T5HO, 4' or less	8-14 lamps		
Hardwired or Modular Compact Fluorescent Fixtures				
Replace incandescent systems with hardwired or modular CFL systems. Does NOT include screw-base CFLs.	18W or less		\$8	per fixture
	18W to 32W		\$18	per fixture
	32W or greater		\$24	per fixture
Industrial Multi-CFL Fixtures				
Replace fluorescent T12 or HID systems with Multi-CFL systems.			\$25	per fixture
Pendant, Wall Mount, and Recessed Indirect Fixtures				
Fixture efficiency $\geq 80\%$ and contain no more than 3-lamps with an indirect or direct/indirect distribution.	T8 or T5		\$24	4' section
Ceramic Metal Halide Fixtures				
Replace incandescent, high pressure sodium or mercury vapor with ceramic metal halide. Lamp wattages must be lower than lamps removed.	150W or less		\$17	per fixture
	150W to 250W		\$28	per fixture
	250W or greater		\$45	per fixture
Pulse Start Metal Halide				
Replace incandescent, mercury vapor, high pressure sodium, or metal halide systems with pulse-start metal halide systems. Lamp wattages must be lower than lamps removed.	175W or less		\$25	per fixture
	175W to 319W		\$40	per fixture
	320W to 749W		\$55	per fixture
	749W or greater		\$65	per fixture

Fluorescent Controls			
Hardwired passive infrared and/or ultrasonic detector. Units with manual "ON" overrides are not eligible.	Ceiling Mtd Occupancy Sensor	\$30	per control
	Wall Mtd Occupancy Sensor	\$12	per control
Daylight Controlled On/Off.	Fixture Mtd Photo Sensor	\$12	per control
Unit shall be mounted on fixture with an On/Off control.	Fixture Mtd Occupancy Sensor	\$28	per control
LED or LEC Exit Signs			
Replace incandescent with LED or LEC signs.		\$6	per fixture
Energy Star Qualified Interior LED Lamps			
Replace incandescent with ENERGY STAR® qualified LED lamps and luminaries.	5W or less	\$10	per lamp
	5W to 10W	\$17	per lamp
	10W or greater	\$25	per lamp
LED Replacement for Linear Fluorescent Lamps			
Replace T12 or T8 lamps with LED linear replacement lamps. Must have minimum lamp efficacy of 80 lumens per watt, L70 lumen maintenance of 50,000 hours, and 3 year warranty.	4 foot or less	\$25	per lamp
	5 to 8 feet	\$35	per lamp
LED Fixtures for Exterior and Parking Garage Installations			
Replace HID systems with LED systems that use 3–6 times less energy. Replacement LED fixtures must be used for exterior lighting or inside parking garages. Fixtures must be rated for exterior use.	25W or less	\$35	per fixture
	25W to 60W	\$75	per fixture
	60W to 150W	\$100	per fixture
HVAC			
Single Phase Package or Split Systems	SEER ≥14, < 5.4 tons	\$50	per ton
Geothermal Heat Pump	EER ≥17.1, COP ≥3.6	\$70	per ton
Heat Pump Water Heater	EF ≥2.0	\$5	per gallon
Variable Frequency Drives			
For HVAC fans, pumps, cooling towers, process equipment and industrial fans. Must operate in excess of 2,000 hours per year.	1hp to 200hp	\$30	per HP

NEMA Nominal Efficiency Motors							
Motor Size (HP)	Open Drip-Proof (ODP)			Totally Enclosed Fan-Cooled (TEFC)			Incentive per Motor
	Speed (RPM)						
	1200	1800	3600	1200	1800	3600	
1	82.5%	85.5%	77.0%	82.5%	85.5%	77.0%	\$10
1.5	86.5%	86.5%	84.0%	87.5%	86.5%	84.0%	\$15
2	87.5%	86.5%	85.5%	86.5%	86.5%	85.5%	\$20
3	88.5%	89.5%	85.5%	89.5%	89.5%	86.5%	\$25
5	89.5%	89.5%	86.5%	89.5%	89.5%	88.5%	\$35
7.5	90.2%	91.0%	88.5%	91.0%	91.7%	89.5%	\$50
10	91.7%	91.7%	89.5%	91.0%	91.7%	90.2%	\$65
15	91.7%	93.0%	90.2%	91.7%	92.4%	91.0%	\$75
20	92.4%	93.0%	91.0%	91.7%	93.0%	91.0%	\$100
25	93.0%	93.6%	91.7%	93.0%	93.6%	91.7%	\$125
30	93.6%	94.1%	91.7%	93.0%	93.6%	91.7%	\$150
40	94.1%	94.1%	92.4%	94.1%	94.1%	92.4%	\$200
50	94.1%	94.5%	93.0%	94.1%	94.5%	93.0%	\$250
60	94.5%	95.0%	93.6%	94.5%	95.0%	93.6%	\$300
75	94.5%	95.0%	93.6%	94.5%	95.4%	93.6%	\$350
100	95.0%	95.4%	93.6%	95.0%	95.4%	94.1%	\$450
125	95.0%	95.4%	94.1%	95.0%	95.4%	95.0%	\$500
150	95.4%	95.8%	94.1%	95.8%	95.8%	95.0%	\$550
200	95.4%	95.8%	95.0%	95.8%	96.2%	95.4%	\$600