EXHIBIT A
ENERGY EFFICIENCY SOLUTIONS PLAN

(see separate attachment)

Black Hills Power – South Dakota

Energy Efficiency Solutions

Potential Study and Plan 2011-2013

January 2011

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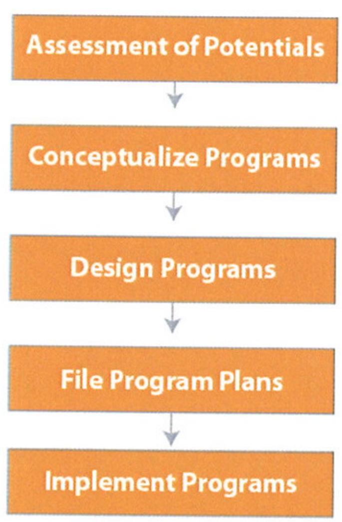
Executive Summary

Black Hills Power ("BHP" or the "Company") is pleased to present this Energy Efficiency Solutions Potential Study (Study). The two key tenets of BHP's programs are:

- ***BHP customers benefit from energy-efficiency programs.*** Energy efficiency can result in lower bills; so participants in BHP's programs immediately benefit from a reduction in their consumption of electricity. Furthermore, the programs are designed to be inclusive; so all customers have the opportunity to benefit from BHP's energy-efficiency programs.
- ***State renewable, recycled and conserved energy goals benefit from energy-efficiency programs.*** Results from effective energy efficiency programs can help the Company and the State of South Dakota meet the established renewable, recycled, and conserved energy objective that ten percent of all electricity sold at retail within the state by the year 2015 be obtained from renewable, recycled, and conserved energy sources.

Guided by these tenets, the creation of this study has adhered to a rigorous planning process. BHP engaged Applied Energy Group (AEG) to develop the estimated energy savings potential from a portfolio of programs designed to meet these goals. The various phases of this process are shown in Figure ES.1 and are specific to the development of BHP's Energy Efficiency Solutions portfolio.

Figure ES.1: Program Planning Process



Market Assessment

The assessment's starting point is based on three different types of energy efficiency potential that are defined and used to describe savings from energy-efficiency measures (EEMs): technical, economic, and achievable. Technical potential assumes total and continuous conversion to the most efficient technologies, regardless of cost. It provides the broadest and highest definition of energy efficiency potential since it estimates savings that would result if all installed equipment and processes were replaced by the best available equipment and processes in all markets.

For the assessment of economic potential, estimates are based on modified savings for new construction, equipment replacement, and retrofit EEMs using the maximum savings *only* where measures and technologies are cost-effective. The assessment of maximum achievable potential is based on the same savings estimates used for economic potential, with modifications residing in assumptions of market penetration on BHP's programmatic successes, best practice studies, regulatory input and feedback from trade allies. Whereas economic potential estimates assume 100 % market penetration, the achievable potential estimates rely on these realistic penetration rates achieved from actual utility energy-efficiency programs. Achievable potential is further refined to reflect other considerations, such as budgets or market barriers. (The refined estimate of achievable potential is often referred to as realistic achievable potential.)

For the purposes of this analysis the Company is proposing a three year program initiative beginning in 2011. Annual budgets for the portfolios run from approximately $600,000 in the first implementation year to just over $1,000,000 for the third year of program operations.

Tables ES.1 through ES.3 provide the energy efficiency estimates for the technical, economic, and achievable potential studies performed as part of the Company's analysis. For the purpose of this study 2008 data was used to determine baseline usage. This was due in part to the timing of the start of the planning process (before 2009 data was available).

Table ES.1: Electric Energy Efficiency Potential – Year 1

Total Black Hills Power	Electric (MWh)	% of Electric Baseline
Baseline Usage *	1,260,471	n/a
Technical Potential	359,773	29%
Economic Potential	218,817	17%
Achievable Potential	3,040	0.24%

** Excludes selected Industrial & Commercial customers*

Residential	Electric (MWh)	% of Electric Baseline
Baseline Usage	502,593	n/a
Technical Potential	199,456	40%
Economic Potential	78,606	16%
Achievable Potential	1,592	0.32%

Commercial & Industrial	Electric (MWh)	% of Electric Baseline
Baseline Usage *	757,878	n/a
Technical Potential	160,317	21%
Economic Potential	140,211	19%
Achievable Potential	1,448	0.19%

** Excludes selected Industrial & Commercial customers*

Table ES.2: Electric Energy Efficiency Potential – Year 2

Total Black Hills Power	Electric (MWh)	% of Electric Baseline
Baseline Usage *	1,260,471	n/a
Technical Potential	359,773	29%
Economic Potential	218,817	17%
Achievable Potential	4,461	0.35%

** Excludes selected Industrial & Commercial customers*

Residential	Electric (MWh)	% of Electric Baseline
Baseline Usage	502,593	n/a
Technical Potential	199,456	40%
Economic Potential	78,606	16%
Achievable Potential	2,284	0.45%

Commercial & Industrial	Electric (MWh)	% of Electric Baseline
Baseline Usage *	757,878	n/a
Technical Potential	160,317	21%
Economic Potential	140,211	19%
Achievable Potential	2,177	0.29%

** Excludes selected Industrial & Commercial customers*

Table ES.3: Electric Energy Efficiency Potential – Year 3

Total Black Hills Power	Electric (MWh)	% of Electric Baseline
Baseline Usage *	1,260,471	n/a
Technical Potential	359,773	29%
Economic Potential	218,817	17%
Achievable Potential	5,888	0.47%

** Excludes selected Industrial & Commercial customers*

Residential	Electric (MWh)	% of Electric Baseline
Baseline Usage	502,593	n/a
Technical Potential	199,456	40%
Economic Potential	78,606	16%
Achievable Potential	2,987	0.59%

Commercial & Industrial	Electric (MWh)	% of Electric Baseline
Baseline Usage *	757,878	n/a
Technical Potential	160,317	21%
Economic Potential	140,211	19%
Achievable Potential	2,901	0.38%

** Excludes selected Industrial & Commercial customers*

Program Portfolio Overview

BHP's energy-efficiency portfolio is composed of residential programs, commercial and industrial programs, with each designed to address the needs of various customer types. The residential program includes rebates, audits and educational programs. The commercial and industrial programs include prescriptive and custom rebates.

Program Budgets, Savings, and Cost-Effectiveness

The portfolio offers a comprehensive suite of programs designed to capture cost effective savings within the Company's service area and provide for significant customer participation. Table ES.4 provides budgets by program year.

Table ES.4 Program Budget Summary by Year

Program Name	2011 Budget	2012 Budget	2013 Budget
Residential Water Heating	$8,050	$12,075	$16,100
Residential Refrigerator Recycling	$30,700	$46,050	$61,400
Residential Heat Pumps	$125,070	$186,863	$252,038
School Based Energy Education	$5,500	$5,500	$5,500
Residential Audits	$46,800	$46,800	$46,800
Weatherization Team	$10,000	$10,000	$10,000
TOTAL RESIDENTIAL	$226,120	$307,288	$391,838
Commercial & Industrial - Prescriptive & Custom Rebates	$267,304	$401,813	$535,465
TOTAL COMMERCIAL & INDUSTRIAL	$267,304	$401,813	$535,465
Cross Program Training, Marketing and Project Management	$100,000	$100,000	$100,000
TOTAL ALL PROGRAMS	$593,424	$809,100	$1,027,302

The above program budget options reflect BHP's commitment toward obtaining the greatest amount of cost-effective, energy-efficiency savings feasible over the planning horizon, and an equitable balance of the energy-efficiency costs between participants and customers.

Benefit Cost Tests

The analysis of the program's cost-effectiveness is an important part of the planning process, both in terms of meeting regulatory requirements and in selecting and designing the various programs. There are many methods used to assess the cost-effectiveness of an energy efficiency measure. BHP focuses on the Total Resource Cost Test (TRC) as the primary method to determine cost-effectiveness. The TRC Test is a widely-accepted methodology that has been used across the United States for over twenty-five years.

Total Resource Cost Test

TRC measures the net costs of an energy efficiency program as a resource option based on the total costs of the program, including both the participants' and the utility's costs. This test represents the combination of the effects of a program on both customers participating and those not participating in a program. The benefits calculated in the Total Resource Cost Test are the avoided supply cost: the reduction in transmission, distribution, generation and capacity costs valued at marginal cost for the periods when there is a load reduction. The costs in this test are the program costs paid by the utility and the participant plus the increase in supply costs for the periods in which load is increased. Thus, all equipment costs, operation and maintenance, cost of removal and administration costs, no matter who pays for them, are included in this test.

The benefit-cost resulting from the application of this test is the ratio of the discounted total benefits of the program to the discounted total costs over a specified time period. A benefit-cost ratio above one (1.0) indicates that the program is beneficial to the utility and its customers on a total resource cost basis.

Cost-Effective Measures for BHP

In order to determine energy-efficiency measures that should be considered opportunities for achievable energy savings in BHP's service area, a comprehensive benefit-cost analysis was conducted on a wide range of measures that effect electric consumption across all customer classes. The TRC test was performed using data specific to the Company. When the TRC test results produce a value greater than one (1.0) for any given measure or bundle of measures, it is judged to be a cost-effective application, implying that it is more beneficial to implement the energy-efficient technology instead of utilizing a supply-side resource to provide electricity. Measures passing the TRC test become eligible for inclusion in programs. Cost-effective measures are bundled into programs and budget amounts are allocated. Then the TRC test is run again on each program, or bundle of measures, to determine cost-effective achievable energy savings potential for the utility service area. The following tables summarize cost-effectiveness as well as energy and demand savings by program year. Tables ES.5 through ES.7 show program details by year, including, participation levels, energy and demand savings, lifetime energy savings and lifecycle cost per kWh saved.

Table ES.5 Program Summary Year 1

Program Name	Annual Participant Goal	Year 1 Annual Program Impacts (kWh)	Year 1 Peak Demand Reduction (kW)	TRC	Lifecycle cost per kwh
Residential Water Heating	80	21,207	8	1.08	$0.025
Residential Refrigerator Recycle	150	195,016	30	1.29	$0.031
Residential Heat Pumps	577	1,172,664	535	1.44	$0.015
School Based EE	125	24,921	1	1.28	$0.022
Residential Audits	200	178,157	27	0.54	$0.066
Weatherization Team	25	NA	NA	NA	NA
TOTAL RESIDENTIAL	1,132	1,591,966	601	1.20	$0.023
Commercial & Industrial Prescriptive & Custom Rebate	162	1,448,261	136	1.26	$0.012
TOTAL COMMERCIAL & INDUSTRIAL	162	1,448,261	136	1.07	$0.016
TOTAL ALL PROGRAMS	1,294	3,040,227	737	1.19	$0.018

Table ES.6 Program Summary Year 2

Program Name	Annual Participant Goal	Year 2 Annual Program Impacts (kWh)	Year 2 Peak Demand Reduction (kW)	TRC	Life cycle cost per kwh
Residential Water Heating	120	31,811	12	1.08	$0.025
Residential Refrigerator Recycling	225	292,524	45	1.29	$0.031
Residential Heat Pumps	865	1,756,665	802	1.45	$0.015
School Based Energy Education	125	24,921	1	1.28	$0.022
Residential Audits	200	178,157	27	0.54	$0.066
Weatherization Team	25	NA	NA	NA	NA
TOTAL RESIDENTIAL	1,560	2,284,078	901	1.27	$0.021
Commercial & Industrial Prescriptive & Custom Rebate	245	2,176,632	205	1.26	$0.012
TOTAL COMMERCIAL & INDUSTRIAL	245	2,172,392	205	1.13	$0.015
TOTAL ALL PROGRAMS	1,805	4,460,710	1,107	1.25	$0.016

Table ES.7 Program Summary Year 3

Program Name	Annual Participant Goal	Year 3 Annual Program Impacts (kWh)	Year 3 Peak Demand Reduction (kW)	TRC	Life cycle cost per kwh
Residential Water Heating	160	42,415	16	1.08	$0.025
Residential Refrigerator Recycling	300	390,031	59	1.29	$0.031
Residential Heat Pumps	1,154	2,351,228	1,074	1.44	$0.015
School Based Energy Education	125	24,921	1	1.28	$0.022
Residential Audits	200	178,157	27	0.54	$0.066
Weatherization Team	25	NA	NA	NA	NA
TOTAL RESIDENTIAL	1,964	2,986,752	1,177	1.30	$0.014
Commercial & Industrial Prescriptive & Custom Rebate	326	2,900,762	273	1.26	$0.012
TOTAL COMMERCIAL & INDUSTRIAL	326	2,900,762	273	1.16	$0.012
TOTAL ALL PROGRAMS	2,290	5,887,514	1,450	1.28	$0.016

Study Contents

In addition to the Executive Summary, this document consists of the following chapters and appendices:

- Chapter 1 contains an explanation of the study development process and discusses the various components that went into creating the energy-efficiency portfolio.
- Chapter 2 describes the technical, economic and achievable potential analysis.
- Chapter 3 describes the overall program development strategy.
- Chapter 4 describes in detail the residential, commercial and industrial programs, respectively, that create the overall energy-efficiency portfolio. These chapters contain general discussions of topics relevant to the programs as well as detailed descriptions of individual programs. This includes budgets, participation, measures, impacts, and, where applicable, cost-effectiveness results.

1. Introduction

Black Hills Power Philosophy

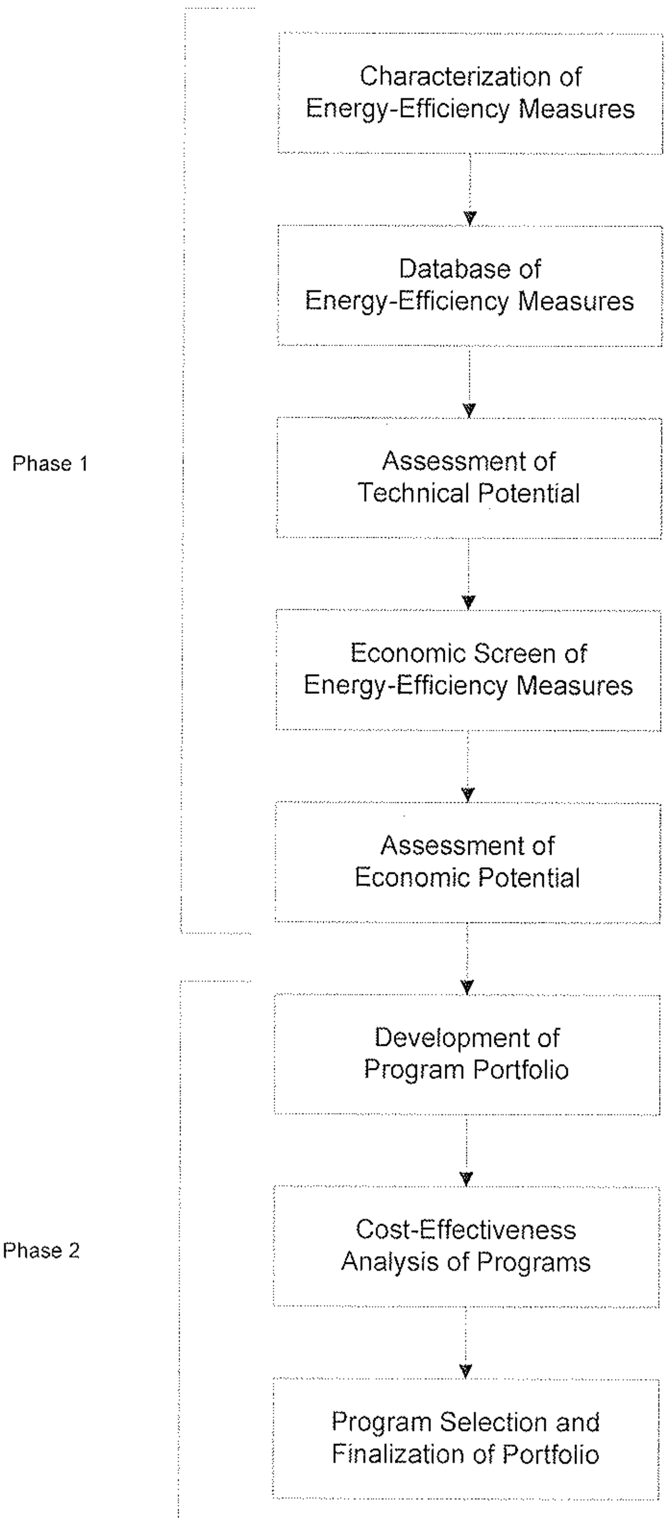
BHP is pleased to present this Energy Efficiency Solutions Potential Study. The Company's study represents a commitment by BHP to enhance value to customers through its implementation of an innovative and flexible portfolio of energy efficiency solutions. These solutions will deliver immediate economic benefits to customers and reduce the environmental impact resulting from energy production and consumption. In addition, the Company's energy efficiency investments will strengthen the economy across BHP's service territory supporting the growth of the local economy through the development of an energy efficiency delivery industry, by increasing consumers' disposable income, and by boosting the bottom line of BHP's business customers.

Study Development Process Overview

Figure 1 represents the primary steps in BHP's Energy Efficiency Solutions planning process. The first phase is to produce assessments of the technical, economic and achievable potential for energy-efficiency across BHP's territory. For these assessments, well researched input parameters for energy-efficiency measures (EEMs) savings were employed, with savings estimates calibrated to the utility's customer and load forecasts.

Phase 2, the development of BHP's Study, takes the results of potential assessments and combines them with numerous other elements to develop a portfolio of demand side programs.

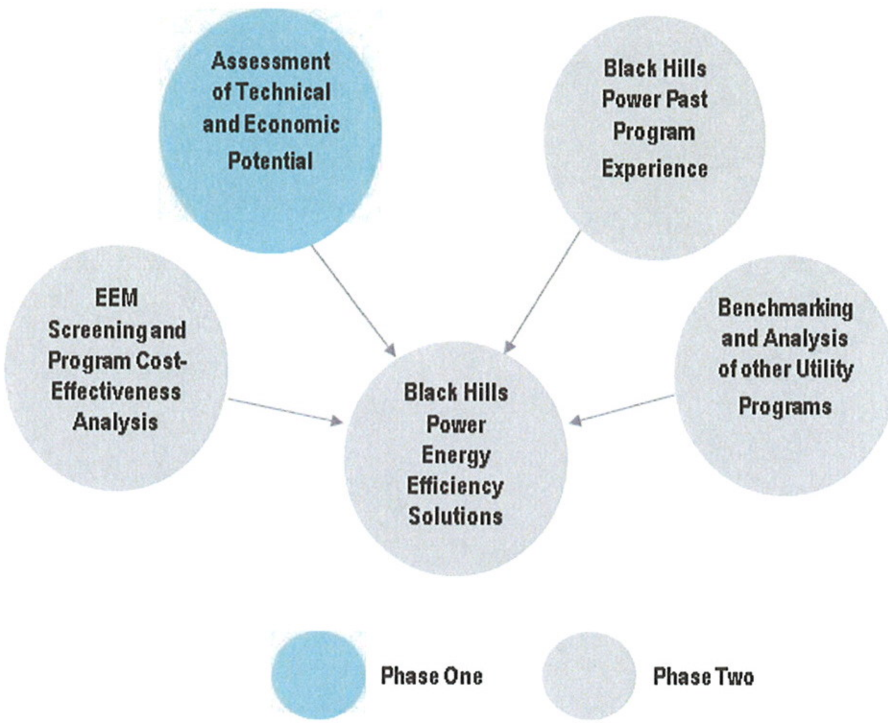
Figure 1: Program Planning Process



Multi-Criteria Approach

Although many of the steps in the process outlined in the above figure follow a specific sequence, in which the results of one activity will impact the next, the final portfolio of energy efficiency programs is dependent on multiple criteria, with influence throughout the planning process. Additional information was obtained and analyzed as part of the analysis employed to develop the final portfolio. Measure identification and measure applicability is part art and part science. AEG used a combination of factors, including informed judgment based on experience in other jurisdiction and reported results from best-in-class programs. Figure 2 portrays the numerous elements that contributed to the final portfolio of energy-efficiency programs.

Figure 2: Criteria for Development of Program Portfolio



Assessments of Potential

An important aspect in the development of this plan was the formulation of ambitious yet realizable goals. For the program development process, one of the primary means of establishing goals has been the assessment of energy-savings potential. This began with the assessment of technical and economic potentials during the first phase of the project and continued with the assessment of achievable potential in the second phase.

This three-tiered approach (technical, economic, and achievable) provides an upper bound based on the potential of viable technologies, and then applies real-world constraints to bring the assessment within reasonable levels. Chapter 2 provides a discussion of the methodology and results of the three different assessments of potential (technical, economic, and achievable).

The assessments of potential contributed to the development of the program portfolio in two key aspects. First, the benefit-cost ratios were evaluated for each energy-efficiency measure. Second, the potential contributes to the selection of programs. Because the model used for assessments was based on BHP's own customer and energy forecast, outputs from the model provided data useful in determining the number of potential participants for the various programs. For example, the model simulates the turnover of end-use appliances, providing a rough estimate of the number of customers in each year that would be in the market for a new heat pump.

Measure and Program Screening

A critical element in the planning process was the stipulation that programs must be cost-effective from a total resource cost perspective. From the perspective of customers and the utility, this ensures the investments made in energy-efficiency will yield sufficient benefits to warrant their costs. The importance of the cost-effectiveness requirement first came into play during the screening of EEMs. All EEMs included in the programs passed the total resource cost test for cost-effectiveness.

The process of analyzing program cost-effectiveness was not one of merely comparing the savings benefits of the EEMs to their incremental costs. Rather, the analysis was a matter of incorporating administrative costs, an appropriate mix of EEMs, and reasonable goals for program participation into the calculations. Savings associated with EEMs in a program, multiplied by the participants, had to produce enough savings to cover costs of the EEMs, expenses associated with administration and marketing of the program, and training expenses.

The combination of different elements resulted in an iterative process where programs were refined to balance costs and savings—in terms of budget, participation, or EEMs—until the appropriate mix was found. In all cases, a program's design was rooted in the best data available from sources discussed in this chapter, providing all of BHP's programs with a firm footing in reality that bodes well for their success.

Key Global Benefit/Cost Screening Inputs

The development of rate impacts associated with the 2011-2013 Energy-Efficiency Plan is based on actual 2008 sales and customer data. Table 1 contains the key general benefit/cost screening inputs including avoided energy (commodity) and demand costs.

Table 1. General Inputs

BENEFIT COST TEST FOR CONSERVATION PROGRAMS -- Cost-Effectiveness Analysis		
Company:	BLACK HILLS POWER - South Dakota	
General Inputs	Electric	
Input Data		
Retail Rate ($/kWh) =	$0.10350	Residential
	$0.10710	Commercial
	$0.07550	Industrial
	$0.10030	All Classes
	Escalation Rate =	1.50%
Commodity Cost ($/kWh) =	$0.03641	annual
	Escalation Rate =	1.50%
Demand Cost ($/Unit/Yr) =	$13.04	
	Escalation Rate =	1.50%
Variable O&M ($/kWh) =	$0.00000	
Environmental Externalities =	$0.0114	
	Escalation Rate =	0.00%
Participant Discount Rate =	8.84%	
Utility Discount Rate =	8.84%	
Social Discount Rate =	8.84%	
General Input Data Year =	2008	
Project Analysis Year 1 =	2010	
Line Losses	4.70%	

2. Potential Assessment

An important step in the development of realizable energy savings goals for BHP's energy-efficiency programs was an assessment of potential electric savings associated with energy efficient measures (EEMs). The first part of this study was to develop estimates of technical and economic, energy-efficiency potentials over a 3 – year program planning horizon. This timeframe was chosen to look far enough into the future to ensure the programs offer the key EEMs with the greatest shot to mid-range potential. This chapter first describes the methodology underlying these assessments of potential, followed by summarizing the resulting estimates for BHP's energy and capacity savings.

BHP engaged AEG to determine the potential for energy-efficiency in the utility's service area. The focus of this study was to determine the technical, economic and achievable potential for electric energy-efficiency. The analysis was conducted by class of service. Estimates were made for a three-year period (2011 – 2013). As part of its analysis AEG has determined the efficiency potential at a high level, relying mainly on available primary and secondary data sources and the consultant's experience with potential analyses elsewhere.

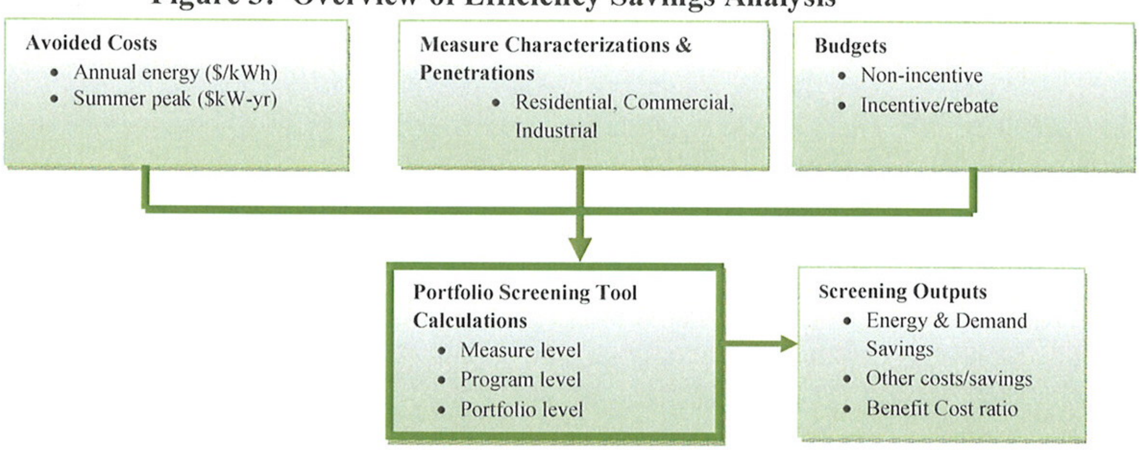
AEG has analyzed the efficiency potential at three levels:

- **Technical potential**, or the total feasible efficiency savings using all efficiency technologies and design practices, unconstrained by budgets or cost effectiveness;
- **Economic potential**, or the feasible efficiency savings unconstrained by budgets, but using only cost-effective efficiency measures (based on the societal cost-effectiveness tests); and
- **Achievable potential** (budget-constrained potential), or the efficiency savings feasible using cost-effective efficiency measures within specific budget targets.

Analysis Methodology

The figure below provides a high-level overview of the methodology used for the efficiency savings analysis.

Figure 3: Overview of Efficiency Savings Analysis



At the core of the analysis is AEG's benefit-cost measure, program and portfolio screening tool (Ben-Cost), an energy efficiency model used for calculating the costs and benefits associated with various efficiency measures (technologies and design practices). Expanding on Figure 3 above, the analysis of energy-efficiency potential, whether technical, economic or achievable, can be summarized as follows:

1. Identify the avoided costs of energy, line loss factors and related inputs to the energy efficiency model (e.g., retail rates, stakeholder discount rates).
2. Determine the potential efficiency measure characterizations, including costs and savings relative to the baseline if not implementing the efficiency measures. Determine measure penetration rates or participation levels based on analysis by market sector.
3. Identify program budgets (for each of the four avoided cost scenarios).
4. Apply these inputs into Ben-Cost which calculates lifecycle costs and savings by efficiency measure and for the total portfolio.

BHP and AEG developed the general input dataset for the model. These included a number of input data such as: the avoided costs of electric energy and demand, line loss factors, retail rates, escalation rates and the nominal discount rate for discounting the value of future benefits and costs.

Efficiency Measure Characterizations

AEG relied upon efficiency measure characterizations based mainly on experience and research for similar potential studies completed elsewhere. Where applicable, AEG adjusted the measure energy savings, including gas savings (or increased usage), based on cooling and heating degree days for the BHP service territory. The measure characterizations include:

- Measure lives
- Incremental implementation cost (over the baseline of standard, non-efficient equipment)
- Annual energy (kWh) savings
- Maximum load (kW) reduction and associated peak coincidence factor
- Other costs and savings (such as natural gas savings (or increased usage) due to fuel switching, or due to decreased cooling or increased heating loads (e.g., due to lower waste heat from efficient lighting or the value of water savings from an energy efficient appliance like a clothes washer)
- For retrofit measures:
    - the deferred replacement cost, which is a benefit that eliminates the need to replace the existing (retrofitted) equipment at the end of its normal life, due to implementation of the efficiency measure, and
    - an adjustment of savings at the time the existing equipment would have been replaced, due to potentially more efficient baseline equipment at that time.
- Operation and maintenance savings (or increased costs)

The energy efficiency model provides for the implementation of efficiency measures in four general markets (three for existing buildings and one for new construction):

- Existing buildings
    1. Retrofit opportunities, for which functioning equipment is replaced with more efficient equipment
    2. Equipment purchase or replacement due to equipment failure, expansion, performance concerns or similar drivers
    3. Remodeling/renovation, similar to equipment replacement, but affecting an entire system or multiple systems
- New construction

Top-down and Bottom-up Approaches to the Analysis

Analysis of the actual potential savings started with a review of sales data for the service territory by sector: residential, commercial, industrial, etc. For the residential sector, AEG disaggregated sales by end-use based on various types of information including insights from BHP staff, Census information, and data from other utilities located in states near South Dakota. These end-use estimates were calibrated to equal actual 2008 use by customer.

For the commercial sector, AEG disaggregated sales by building type and end-use based on Commercial Buildings Energy Consumption Survey (CBECS) census data from the Energy Information Agency, and experience with similar potential studies elsewhere. AEG estimated growth rates for commercial sector sales from the forecast for existing structures and for new construction based on inputs provided by BHP.

These sales forecasts served as the basis for a "top-down" analysis of the efficiency potential, which arrives at measure savings by determining the percentage of the electric sales forecast that may be offset by the installation of a given energy-efficiency measure in each year. The top-down approach develops costs relative to energy savings, and then multiplies that "cost per energy saved" by the measure's energy savings each year to determine each year's installed costs. For the commercial and industrial sectors, sales are disaggregated by building type and end-use, and by existing buildings and new construction. Each commercial and residential efficiency measure is characterized based on these disaggregated sales projections.

For the residential sector, AEG applied a "bottom-up" analysis, which develops savings information for a specific measure. The bottom-up approach is suitable for the residential sector since data is available to estimate the number of residential buildings and the expected rates for adopting efficiency measures. In contrast, commercial and industrial buildings vary greatly in size and in their energy usage, and suitable data is not available in order to use the bottom-up approach.

Regardless of approach, all methodologies need to develop factors for the following measure characteristics:

- **Applicability** is either the number of customers eligible for a given measure (bottom-up) or the fraction of the end-use level sales for each building type that is attributable to equipment that could be replaced by the high efficiency measure (top-down). Commercial applicability factors for this analysis were derived using the latest (2003 and 2006) CBECS data for the BHP region.

- **Feasibility** is the fraction of the applicable number of customers or end-use sales for which it is technically feasible to install the high efficiency technology. Numbers less than 100% reflect engineering or other technical barriers that would preclude adoption of the measure. Feasibility is not reduced for economic or behavioral barriers that would reduce penetration estimates. Rather, it reflects technical or physical constraints that would make measure adoption impossible or ill advised.
- **Turnover** is the number or percentage of existing equipment that will be naturally replaced each year due to failure, remodeling, or renovation. This only applies to replacement/purchase and remodel/renovation markets. In general, turnover factors are assumed to be one (1) divided by the measure life (e.g., assuming 10% of existing stock of equipment is replaced each year for a measure with a 10-year estimated life.)
- **Baseline Adjustment** adjusts the savings downward in future years for retrofit measures to account for the fact that newer, standard equipment efficiencies are higher than older, existing stock efficiencies.
- **Savings Fraction**, used only in the top-down approach, represents the percent savings (as compared to either existing stock or new baseline equipment for retrofit and non-retrofit markets, respectively) of the high efficiency technology. Savings fractions are calculated based on individual measure data and assumptions about existing stock efficiency, standard practice for new purchases, and high efficiency options.

Multiplying these factors together provides a maximum (technical) potential savings for each measure. The appropriate measures and penetration rates are then applied to determine each of the efficiency potentials, technical, economic and achievable, as described further in the following section.

Stock Adjustments and Measure Interactions

New measures can be installed in existing buildings either on an early retirement (retrofit) basis, at the time of natural replacement, or at the time of renovation or remodeling. To avoid double counting, the energy efficient model tracks the eligible stock of equipment over time, based on the assumed measure penetrations for each existing building market. For example, if 10% of existing lighting fixtures are retrofitted with high efficiency models in 2008, then only 90% of the original population of lighting remains eligible for efficiency upgrades in non-retrofit markets during 2009. However, assuming the fixtures had only a 5-year measure life, the original 10% of lighting fixtures would again become eligible for replacement in 2013 (five years after original installation date). Similarly, once a building is renovated or remodeled, the opportunity for retrofit is diminished until the end of the measure lives for those measures installed under the market-driven (non-retrofit) scenarios.

Some of the technologies modeled are mutually exclusive – one or the other could be installed, but not both. For example, standard metal halide high-bay fixtures can be replaced with pulse start metal halides or fluorescent high-bay fixtures. When two or more measures compete with one another, an estimate of the penetration of the measure offering the most per unit savings was first estimated. The penetration of the next competing measure is then estimated based on the remaining potential.

Technical Potential

Technical potential is typically defined as the total energy-efficiency potential unconstrained by budgets or measure cost-effectiveness. Note that the same technical potential savings could be achieved by a different mix of efficiency measures. For example, the savings due to retrofit measures could be replaced by savings due to market-driven (non-retrofit) measures. Given the methodology for selecting measures and maximizing penetration rates, the results should be viewed with a focus on the total savings results rather than on the specific measures used to achieve them.

Economic Potential

The economic potential starts with the same list of potential efficiency measures as the technical potential, but includes only those efficiency measures that are found to be cost-effective as determined using the Total Resource Cost Test[1], which compares the total lifecycle costs and benefits of the energy efficiency measure (or program, portfolio). The Total Resource Cost Test (TRC) measures the net costs of a energy efficiency program as a resource option based on the total costs of the program, including both the participants' and the utility's costs.

Lifecycle costs include:

- incremental installed cost (above baseline equipment)
- non-incentive programs costs (e.g., project management and marketing)

The benefits include:

- avoided costs of electric energy savings and demand reduction
- avoided costs of natural gas/other fuel savings
- operation and maintenance savings
- deferred replacement credit (for retrofit measures)
- electric externalities (e.g., due to reduced air pollution)

Measure incentives are considered a pass-through payment from one party to another, thus they are not considered to be a cost or a benefit.

The TRC costs and benefits are determined for each year of the measure life and discounted back to the base year (2008). Cost-effectiveness is measured by the Net Benefits, equal to the benefits minus the costs. A measure is considered to be cost-effective if the net benefits are greater than or equal to zero.

Achievable Potential

The achievable potential represents AEG's best estimate of what BHP can achieve given the information that we have about the service territory. Once the achievable potential for each

[1] Cost-effectiveness testing is described in the *California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects*, revised July 2002.

measure was estimated, the measures were bundled into a mix of program offerings. AEG selected a typical set of energy efficiency programs for this analysis, but with the understanding that the program design significantly affects the savings that can be achieved for a given budget. A different program design would likely result in different overall savings, and different savings by sector or customer group.

The programs that were considered for the achievable potential analysis include:

- Refrigerator Recycling
- Residential Water Heating
- Residential Heat Pumps
- Residential Audit
- School Based Energy Education
- Commercial & Industrial Prescriptive & Custom Rebate Program
- Weatherization Team

The achievable potential was based upon the most cost-effective relevant efficiency measures found in successful energy efficiency programs elsewhere, AEG set penetration rates at levels deemed appropriate for the programs and their specific measures given the characteristics of BHP's service territory. The total portfolio savings were calculated with the energy efficient model, and the penetration rates set at levels comparable to other successful utility energy efficiency programs.

Note that there is a great deal of variability in the efficiency measures that could be selected depending on the program design. While we have attempted to select measures and penetration rates suitable for a generic efficiency program, many other combinations and permutations of programs and efficiency measures are possible. The actual mix of measures and their installation rates will depend on the measures and incentives offered to customers, how the efficiency programs are marketed, the level of engagement with third-party contractors and many related factors. These and other factors should be taken into consideration as part of the program design.

3. General Program Design Approach

This section discusses the general program design approach. As discussed in Chapter 1, BHP has incorporated information from various sources throughout the development of its portfolio. The objective was to create a comprehensive and innovative set of programs to serve the needs of BHP's customers by advancing efficient energy use.

Delivery Mechanisms

The primary mechanism for program delivery consists of customers purchasing high-efficiency equipment and/or services directly from existing market actors (i.e., contractors, equipment dealers, and retailers). Consequently, the successful promotion and administration of programs requires going beyond a "customer-only" focus. Targeting trade allies and leveraging BHP's relationships with them will increase both awareness among consumers and the availability of high-efficiency equipment.

Although the emphasis continues to be customer incentives, components of several programs include strategies to encourage cooperation with trade allies, other utilities, and state and local agencies. In some programs, for example, portions of the budget have been reserved to conduct training and informational outreach activities with trade allies, including dealers and providers of maintenance services. These activities are intended to keep the key trade allies apprised of the changes in the various programs, which will allow them to provide assistance to customers and to ensure they maintain high-efficiency equipment in their stock.

Qualifying Energy-Efficiency Measures

Qualifying EEMs represent either more efficient models of end-use appliances, such as an air source heat pump, or technological improvements that can make an end-use appliance more efficient in its use of energy, such as a variable frequency drive. Nearly all the programs encourage the adoption of at least one EEM. EEMs that qualify for each program are intended to represent a substantial improvement over the standard efficiency available on the market.

Participation

Establishing a participation goal for each program requires a balancing of numerous factors, including the pool of eligible participants, the available budget, and past program performance.

Each program budget is developed in a way that balances best practices, including the share of technology costs paid directly by participants as compared to the incentive subsidy. Incentives need to be sufficiently large to encourage participation, yet be of a size that maximizes available resources. Similarly, marketing and administrative budgets should be adequate to promote and operate the programs, but not be so large they negatively impact cost-effectiveness.

Finally, in setting goals for participation, two additional factors need to be considered. AEG's experience and its' review of program performance in other states has served as a guide to which programs have been able to meet or exceed their goals and which have fallen short. Given similar incentive and outreach structures, we expect to achieve participation consistent with other efforts. The second factor to consider is that we are expanding existing programs and proposing new programs in the BHP service territory.

Impacts

These programs seek to save energy and peak demand; therefore goals for impacts are a critical element of program design, and the portfolio has been designed to aggressively pursue this goal. Throughout this process, BHP has sought to identify targets where energy savings can most effectively be achieved. The knowledge derived from these efforts has influenced the program design; programs are designed to address the major end-uses in the residential and C&I sector where technologies exist to significantly improve energy-efficiency.

Because impacts are driven primarily by participation and the respective savings of qualifying EEMs, these components have been tailored to maximize the program's total impacts. The overall portfolio includes programs that capture a wide variety of potential savings. As discussed previously, programs have been designed to maximize participation given best practice marketing and incentive designs. In addition to ensuring participation while efficiently using budget resources, incentives have been targeted to promote the adoption of EEMs that maximize savings and minimize lost opportunities. In many cases, incentives have been structured to encourage the adoption of EEMs with the highest levels of efficiency.

Eligibility

Where feasible to facilitate participation, eligibility has been defined as broadly as possible to make the programs more inclusive. For most residential programs, eligible participants include customers living in every type of residential structure, including single-family, multifamily, and manufactured homes. For other programs, the only limitations on participation are circumstances where a customer has recently participated in a program and repeated participation would not render sufficient savings to justify the expense.

Training

To improve participation and quality of service, on going training will be a provided as part of this Plan. BHP is committed to contractor and trade ally education and training. The training sessions may cover a variety of topics, such as:

- Proper sizing and installation of HVAC equipment, including duct sealing and proper refrigerant charging
- Green building techniques (to support programs such as the Commercial & Industrial rebate program)

Budgets

Program budgets are developed with consideration to the following areas of expenditure:

- Delivery, such as the cost to perform an energy audit or other service
- Project management, including project management and program implementation planning and design (prior to program start dates) and internal program evaluation
- Marketing to customers and the trades
- Incentives, both customer and trade ally

Program Evaluation

Evaluations will be conducted internally by BHP to help determine if the overall portfolio is achieving its objective. Verification of energy savings for the programs will be conducted based in industry standards and energy efficiency plan results experienced by other Black Hills' utilities in other jurisdictions with similar programs. In addition, internal process evaluations will be conducted to help ensure they contribute to optimal program performance.

4. Energy-Efficiency Programs

This document contains descriptions of a portfolio of Energy Efficiency programs that reflect the following:

- Tested Program Design – Energy Efficiency program designs are based upon other utilities' successful program designs including BHP's experience in other states it serves.

- Coverage – The programs provide services to South Dakota standard tarriffed customers for all income levels.

- Goals – Participation goals are reasonable, based upon BHP's service territory and other utilities' experience.

- Budgets – Budgets include sufficient funds to properly manage, administer, and market the programs.

- Cost Effectiveness – All measures contained in the different programs have undergone benefit/cost screening consistent with the California Standard Practice Manual.

- Program Design Assumptions – All measures and associated costs, which were developed in the achievable potential analysis, have been bundled into different programs by customer class. These assumptions include consideration of all the following factors:

    - Utility Project Costs – The overall annual costs for the utility to implement the program. This includes the utility cost for incentives, marketing, delivery, project management, evaluation, etc. for each year that the program is planned. Utility incentives must be provided separately as these costs are handled differently from other utility costs in certain benefit/cost tests.

    - Direct Participant Cost – The incremental cost of each energy savings measure ($ per measure) before utility incentives. This represents what the customer would have to pay to achieve the benefits of the specified energy-efficient measure. This is a one-time cost.

    - Project Life – The estimated lifetime that a project/measure will yield energy savings (years). Measure life should be consistent with equipment life but in some instances the utility may choose to limit the savings to a predetermined life (e.g., 15 years maximum) for analysis purposes.

    - Demand Savings – The amount of demand reduction that the particular measure will yield (kW). This represents the rated reduction on power.

    - Coincident Factor – A factor applied to Demand Savings to determine the value of demand reduction that will be achieved during the hour of the utility peak (in percent).

- kWh/Participant Savings – The energy savings component of a particular measure (annual kWh). This is defined as the savings achieved for each measure.
- Number of Participants – The participation goal for a particular program.
- Incentive per Participant – The value of the utility incentive for each particular measure included in program. This value multiplied by the Number of Participants will yield the total utility incentive.

- General Project Management and Marketing – These are costs that are not specific to an individual program, such as preparation of annual reports, general oversight, broad-based message marketing, etc
- Evaluation – Program evaluation will be conducted by internal BHP staff.
- Program Write-ups – Each program write-up contains the following information:
    - Program Description – A general overview of the program.
    - Peak Demand and Energy Savings – This is an estimate of the kW and kWh savings that can be expected to occur given the assumptions for each particular program.
    - Estimate of Program Cost Effectiveness – these are the benefit to cost ratios for each of the generally accepted cost effectiveness test, including the determinant Total Resource Cost test.
    - Participation – The participation targets reflect the results of the Achievable Potential Study.
    - Program Budgets – Each program budget contains categories for program delivery, project management, marketing, incentives and evaluation. All programs have three-year ramp up periods. Overall costs are consistent with the Achievable Potential Study results.

The remainder of this section contains descriptions, budgets, participation levels, cost effectiveness screening results, and energy/demand savings for each of the programs in the portfolio.

Residential Water Heating

PROGRAM DESCRIPTION

This program offers rebates to BHP residential customers when they replace existing electric water heaters with high-efficiency models. This program is available to the following BHP residential customers:

- Existing single-family dwellings.
- Existing multi-family dwellings where water heating systems serve only one unit.
- New single-family construction, and new multi-family dwellings where water and space heating systems serve only one unit

Customers installing a qualifying water heater will receive a $75 rebate. A qualifying unit is considered a high-efficiency electric tank water heater with a rated energy factor equal to or greater than 0.94.

The delivery of this program will be entirely self-directed by the customer as they will purchase equipment and arrange for installation by the contractor of their choice. The customer is also responsible for completing and submitting the rebate form to BHP for reimbursement.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1	8	21,207
2	12	31,811
3	16	42,415

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results			
Total Resource Cost Test	**Societal**	**Participant**	**Ratepayer Impact Measure (RIM)**
1.08	1.35	3.65	0.36

PARTICIPATION

Measure	Year 1	Year 2	Year 3
Water Heaters	**80**	**120**	**160**

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Total
1	$500	$1,050	$500	$6,000	$8,050
2	$750	$1,575	$750	$9,000	$12,075
3	$1,000	$2,100	$1,000	$12,000	$16,100

Refrigerator Recycling Program

PROGRAM DESCRIPTION

The Refrigerator Recycling Program will encourage residential or small business customers to turn in old inefficient refrigerators. Refrigerators must be between 10 and 30 cubic feet in size. The refrigerators must also be in operating condition. The program's goal is to remove these inefficient refrigerators from the electric system and dispose of them in an environmentally safe and responsible manner. The Company will investigate whether a business located in its service area could be used to deliver this program.

As part of the program, an incentive will be given the customer. Initially, a $30 rebate will be offered per qualifying unit.

The contractor will handle scheduling, transportation and disposal. The contractor will also provide nameplate data on units to assist in impact evaluation.

Program delivery costs for the contractor are budgeted at $110/unit. Marketing costs are budgeted at $15 per unit. Project management is set at $15/unit.

Based on discussions with a refrigerator recycling vendor regarding participation levels that they have experienced with other utilities, goals have been established as outlined in the table below. Energy savings is based upon a recently completed impact evaluation in California, which estimates 800 kWh net (1,600 gross) per unit. Demand savings is based on a 15% load factor and 85% coincidence factor.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1	30	195,016
2	45	292,524
3	59	390,031

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results			
Total Resource Cost Test	**Societal**	**Participant**	**Ratepayer Impact Measure (RIM)**
1.29	1.65	N/A	0.35

PARTICIPATION

Measure	Year 1	Year 2	Year 3
Refrigerator's picked up	**150**	**225**	**300**

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Total
1	$21,000	$3,800	$1,400	$4,500	$30,700
2	$31,500	$5,700	$2,100	$6,750	$46,050
3	$42,000	$7,600	$2,800	$9,000	$61,400

Residential Heat Pumps

PROGRAM DESCRIPTION

BHP offers rebates to its residential customers for installing new, energy efficient heat pumps. To qualify for the heat pump rebate, customers must install a heat pump as part of new construction or install a heat pump in existing construction. Rebates are also paid for the replacement of existing heat pumps and for replacing an electric furnace with a heat pump.

Customers installing qualifying heat pumps will receive the following rebates:

- Retro-commissioning of existing ASHP - $60
- Air source heat pump - $150 per ton
- Replace electric furnace with ASHP - $1,500
- Geothermal heat pump - $200 per ton

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1	535	1,172,664
2	802	1,756,665
3	1,074	2,351,228

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results			
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)
1.44	1.80	3.89	0.45

PARTICIPATION

Measure	Year 1	Year 2	Year 3
Residential Heat Pumps	577	865	1,154

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Total
1	$15,160	$24,635	$9,475	$75,800	$125,070
2	$22,650	$36,807	$14,156	$113,250	$186,863
3	$30,550	$49,644	$19,094	$152,750	$252,038

School-Based Energy Education

PROGRAM DESCRIPTION

The School-Based Energy Education Program seeks long-term energy savings through enhanced awareness of energy-efficiency among students. The program is centered on the concept that awareness of energy-efficiency can be greatly enhanced among youth, who have less formulated ideas about energy consumption and are, therefore, more subject to developing a conservative mindset with regards to energy use in the home. The primary means of engendering these subtle-yet-significant behavioral changes is a specific curriculum to complement the existing natural science-based education.

The program will include a set of low-cost measures to help ideas and concepts to resonate with participating students. These measures will provide hands-on methods for the students to evaluate the impact of measure implementation. For example, CFLs will be given to students to install in their homes and a flow meter to accompany the low-flow showerhead, permitting students to quantify the use of water before and after installation. Such comparisons will provide a concrete example of how their actions save energy and help the environment.

The program will be promoted to school districts and teachers through education associations and other methods, as appropriate. The program will target middle school-aged children and their households. A participation goal has been set at 125 students per year.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1	1	24,921
2	1	24,921
3	1	24,921

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results			
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)
1.28	1.64	N/A	0.32

PARTICIPATION

Measure	Year 1	Year 2	Year 3
Students	125	125	125

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Total
1	$5,000	$500	$0	$0	$5,500
2	$5,000	$500	$0	$0	$5,500
3	$5,000	$500	$0	$0	$5,500

Residential Audit Program

PROGRAM DESCRIPTION

The Residential Audit Program is composed of two components: a free audit to provide recommendations to customers about ways they can reduce the energy consumption in their homes and direct installation of low cost energy savings measures. Audit recommendations may include suggested behavioral changes, suggestions about implementing low-cost and easy-to-install energy-saving equipment, and suggestions about repairing, upgrading, or replacing larger, relatively expensive equipment or systems. Residential customers who have electricity as their primary space heating fuel will be eligible to participate.

The Residential Audit program will be promoted through bill inserts and various media, including newspaper advertising. Customers who contact BHP's call center, especially those calling with billing inquiries, will be referred to the program.

While on site, auditors will assess:

- Insulation levels
- Infiltration levels
- Equipment efficiency and operating condition
- Behavior-related factors influencing energy consumption

As part of the free audit, auditors will install (or instruct participating customers on how to install) a number of low-cost energy-saving measures. Auditors will provide participants with educational information on how to manage their energy usage and costs, and will refer participants to BHP's other applicable energy-efficiency programs.

Auditors who conduct free audits will offer participating customers the following energy-efficiency measures at no cost:

- Compact Fluorescent Lamps
- Outlet gaskets
- Faucet aerators
- Pipe insulation
- Low-flow showerheads
- Low-cost infiltration measures

On average, a participating customer will receive about $30 worth of measures during the audit.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1	27	178,157
2	27	178,157
3	27	178,157

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results			
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)
0.54	0.70	N/A	0.24

PARTICIPATION

Measure	Year 1	Year 2	Year 3
Customers	200	200	200

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Total
1	$39,000	$4,875	$2,925	$0	$46,800
2	$39,000	$4,875	$2,925	$0	$46,800
3	$39,000	$4,875	$2,925	$0	$46,800

Weatherization Teams

PROGRAM DESCRIPTION

This program delivers weatherization measures to the low-income community residing in BHP's service territory. This program is offered to any low income residential customers including senior citizens and disabled customers.

The following is a list of typical weatherization efforts undertaken as part of this program.

- Caulking around doors and windows
- Weather stripping around doors and windows
- Door sweep(s)
- Plastic window film on the interior and exterior
- Hot water heater blanket
- Hot water pipe insulation
- Furnace filter replacement
- High-efficiency showerheads
- Programmable thermostats
- Kitchen & bathroom high-efficiency faucet aerators
- Compact Fluorescent Lamps (CFLs)

There are no monetary incentives provided directly to the customer.

Eligible participants will be identified through Neighborworks, Inc., Western South Dakota Community Action and Church Response.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1	NA	NA
2	NA	NA
3	NA	NA

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results			
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)
NA	NA	NA	NA

PARTICIPATION

Measure	Year 1	Year 2	Year 3
Customers	25	25	25

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Total
1	$10,000	NA	NA	NA	$10,000
2	$10,000	NA	NA	NA	$10,000
3	$10,000	NA	NA	NA	$10,000

Commercial & Industrial Prescriptive & Custom Rebate Program

PROGRAM DESCRIPTION

The Commercial & Industrial Prescriptive & Custom Rebate Program will provide standardized pre-determined rebates to commercial and industrial customers that install, replace or retrofit electric savings measures of pre-qualified performance. These measures include lighting, electric motors and variable frequency drives. Measures are proven technologies that are readily available with known performance characteristics. This includes T5 fluorescent lighting systems, high performance T8 lamp and ballast combinations, high bay fluorescent fixtures, pulse start metal halide lamps, NEMA premium electric motors and variable speed drives. A rebate cap will be imposed per facility or building for the first nine months of each program year cycle. However, if funds are still available in the last three months of the program year, the cap may be exceeded.

All commercial and industrial customers, served by BHP's standard tariffs, are eligible to participate in this program. The same customer can participate multiple times, e.g., retrofit a lighting system and upgrade to a more efficient motor. Different end-uses have different potential participation levels. Lighting equipment can be replaced at any time, thus all customers are eligible to participate immediately. Conversely, motors and other equipment are generally only replaced at the end of their useful lifetime, thus the eligible participants would be 10% of all customers in any given year assuming a 10-year life for the equipment. A two-year roll up to full scale program participation levels has been assumed as well.

Any energy efficient equipment not covered by the prescriptive component of the rebate program will be eligible for evaluation as a custom rebate. The Custom Rebate Program evaluates the costs and benefits of individual projects against program benchmarks, and rebates are paid based on the following criteria:

Custom rebates are proposed calculated as the lesser of the following:

- 50% of the incremental cost[2]
- $0.30 per kWh savings

All projects must pass the cost benefit test to be eligible for a rebate. The cost per kWh criterion provides a cap on incentives for projects that are relatively expensive for the amount of kW and kWh saved.

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[2] Incremental cost will be based on the difference in cost between a baseline ("standard efficiency" option) and the proposed high-efficiency option. The baseline will vary according to the technology and end-use. Customer savings will be based on the estimated reduction in billed energy and demand.

One customer may submit multiple custom rebate applications for different measures. Each individual measure will be evaluated on its own merits. Similar measures that are proposed in different facilities or buildings will be evaluated separately. A cap will be imposed per facility or building for the first nine months of each program year cycle. However, if funds are still available in the last three months of the program year, the cap may be exceeded. This cap includes any incentives received through the Prescriptive Rebate Program.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1	136	1,448,261
2	205	2,176,632
3	273	2,900,762

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results			
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)
1.26	1.60	3.71	0.41

PARTICIPATION

Measure	Year 1	Year 2	Year 3
Applications	162	245	326

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Total
1	$32,401	$52,651	$20,250	$162,003	$267,304
2	$48,705	$79,145	$30,440	$243,523	$401,813
3	$64,905	$105,470	$40,556	$324,524	$535,465

The following pages contain an initial list of proposed measures that will be eligible for prescriptive rebates. This list is similar to what other utilities with similar programs are currently offering as well as consistent with other utilities' in other states. The technologies offered are limited to those that have been proven to be cost effective.

General Lighting				
Fluorescent T8 Lamps with Electronic Ballasts				
Replace incandescent or T12 systems with T8 systems	4' or less	1-2 lamps	$5	per system
		3-4 lamps	$9	per system
	5' to 8'	1-2 lamps	$8	per system
High Performance T8				
Lamps must be listed with the Consortium for Energy Efficiency and be matched with selected instant start or programmed start electronic ballast		1-2 lamps	$9	per system
		3-4 lamps	$18	per system
Low-Wattage Fluorescent T8 Lamps				
4', 28 watt or less listed with the Consortium for Energy Efficiency		T8	$0.50	per lamp
Fluorescent w/ specular reflectors				
Each unit shall have a minimum reflectivity of 87%		4'	$12	per fixture
		2 - 4' tandem wired	$12	per fixture
		8'	$16	per fixture
		2 - 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 systems.	T8, 4'	6-8 lamps	$75	per fixture
	T5HO, 4' or less	4-5 lamps		
Replace 1000W HID systems with 12 - 18 lamp T8 or 8 - 14 lamp T5HO systems.	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
		19w to 32w	$18	per fixture
		33w or greater	$24	per fixture

Industrial Multi-CFL Fixtures			
Replace fluorescent T12 or HID systems with Multi-CFL systems.		$25	per fixture
Pendant & Wall Mt. Indirect			
Fixture efficiency must meet or exceed 80% and contain no more than 3lps with an indirect or direct/indirect distribution	T8 or T5	$24	per 4' sect.
Recessed Indirect			
Fixture efficiency must meet or exceed 80% and contain no more than 3lps with an indirect or direct/indirect distribution	T8 or T5	$16	per fixture
High-Efficiency Fluorescent			
Fixture efficiency shall meet or exceed 75% for parabolic and 83% for prismatic and shall contain no more than 3 lamps	1lp	$4	per fixture
	2lp	$8	per fixture
	3lp	$8	per fixture
Pulse-Start Metal Halide Fixtures			
Replace existing incandescent, mercury vapor, high pressure sodium, or metal halide systems with pulse-start metal halide systems	175w or less	$25	per fixture
	176w to 319w	$40	per fixture
	320w to 749w	$55	per fixture
	750w or greater	$65	per fixture
Fluorescent Controls			
Passive infrared and/or ultrasonic detector. Units with manual "ON" overrides are not eligible	Ceiling Mtd	$30	per control
	Wall Mtd	$12	per control
Daylight Controlled On/Off	Photosensor	$12	per control
Unit shall be mounted on fixture with an On/Off control	Fixture Mtd	$28	per control
HID Controls			
Each unit shall control HID Lamps. Fixtures controlled On/Off are not eligible.	Occupancy controlled Hi-Low	$35	per fixture
	Daylight controlled Dimming	$35	per fixture

Variable Frequency Drives		
VFD Rebates used for HVAC fans, pumps, cooling towers, process equipment and industrial fans and operate in excess of 2,000 hours will qualify.	1hp to 200hp	$30 per hp

NEMA Premium Motor rebates are eligible for existing buildings only and must replace older inefficient but working motors. The proposed rebate schedule is provided on the following pages:

OPEN DRIP-PROOF (ODP)

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

TOTALLY ENCLOSED FAN-COOLED (TEFC)

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