



Jim Wilcox, Manager,  
Government & Regulatory Affairs  
500 West Russell Street  
P.O. Box 988  
Sioux Falls, SD 57101-0988  
Telephone (605) 339-8350 fax 612/573-9083  
internet - james.c.wilcox@xcelenergy.com

December 31, 2009

Ms. Patricia Van Gerpen, Executive Director  
South Dakota Public Utilities Commission  
State Capitol Building  
500 East Capitol Avenue  
Pierre, South Dakota 57501-5070

Dear Ms. Van Gerpen:

Enclosed for filing please find Xcel Energy's petition seeking approval for an expanded demand side management program and cost recovery tariff.

If anyone has any questions, please call me at 339-8350

Sincerely,

A handwritten signature in black ink that reads 'J Wilcox'.

Jim Wilcox

**STATE OF SOUTH DAKOTA  
BEFORE THE  
SOUTH DAKOTA PUBLIC UTILITIES COMMISSION**

IN THE MATTER OF THE PETITION OF  
XCEL ENERGY, A MINNESOTA  
CORPORATION OPERATING IN SOUTH  
DAKOTA, TO ESTABLISH A DEMAND SIDE  
MANAGEMENT PROGRAM AND COST  
RECOVERY TARIFF AND FOR APPROVAL  
OF 2010 PLANNED COSTS TO BE  
INCLUDED IN RATES

**PETITION FOR A  
DEMAND SIDE MANAGEMENT  
PROGRAM AND ADJUSTMENT  
FACTOR**

DOCKET NO. EL09- \_\_\_\_

**INTRODUCTION**

Xcel Energy, a Minnesota corporation ("Xcel Energy" or the "Company") operating in South Dakota petitions the South Dakota Public Utilities Commission (the "Commission") for approval of a new cost recovery tariff and establishing a Demand Side Management Cost Adjustment Factor ("DSM Factor") to be included in rates. The Company requests approval to expand its existing Demand-Side Management ("DSM Plan") by adding new programs in order to provide Xcel Energy customers with more options for managing their electrical demand and reducing their electrical energy usage and saving money on their monthly utility bills. We also request that this DSM Plan replace the existing DSM Plan proposal filed on December 28, 2007 in Docket No. EL07-36.<sup>1</sup>

Following is information specified in South Dakota Administrative Rule 20:10:13:26 regarding the proposed new tariff and adjustment factor:

**(1) Name and address of the public utility;**

Xcel Energy  
500 West Russell Street  
Sioux Falls, South Dakota 57104  
(605) 339-8350

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The Company has filed a letter withdrawing its previous proposal filed on December 28, 2007 in Docket No. EL07-036.

## **(2) Section and sheet number of tariff schedule;**

Xcel Energy proposes to add Demand Side Management Cost Adjustment Factor tariff sheet number 73 to Section 5 of the Xcel Energy South Dakota Electric Rate Book. Exhibit 1, pages 1-6, depicts the proposed tariff sheets that would implement this proposed DSM Factor.

## **(3) Description of the change;**

The proposed tariff and accompanying DSM Factor seeks to implement a DSM Plan that expands on the Company's existing demand-side management offering. The proposed tariff implements a single adjustment factor intended to be applied to all customers' bills, regardless of customer class. Further, the DSM Factor described and proposed in this filing would be implemented through a separate line item on customer bills.

## **(4) Reason for the change;**

This request proposes to expand on our current DSM Plan, offering a portfolio of programs that will help customers to better manage their electrical demand, lower their electrical energy usage and save money on their monthly bills.

## **(5) Present rate;**

Since 1993, Xcel Energy has been providing Load Management ("LM") and Energy Efficiency ("EE") programs to its South Dakota customers as part of the Company's DSM portfolio. The LM program has been very successful. This program presently consists of the rate discount load control (a.k.a load management) programs made up of the energy control program (rate code E22 – SD Electric Rate Book Section No. 5 Sheet No 40-45) and the peak control program (rate code E20 – SD Electric Rate Book Section No. 5 Sheet No 31-33) and the controlled air conditioner program termed the Saver's Switch<sup>®</sup> rate rider program (SD Electric Rate Book Section No. 5 Sheet No 66) from which the Company derives load control.<sup>2</sup>

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<sup>2</sup> The EE programs implemented in 1993 provided rebates to customers to encourage them to adopt more energy efficient lights and motors. Those programs were discontinued following the adoption of the Energy Efficiency Act (the "Act") by Congress in 1996. That Act raised the minimum efficiency standards to a level that the Company was already incenting; therefore we discontinued those rebates to avoid providing rebates to "free riders" (customers who would have implemented the energy efficiency measure regardless of our program and yet earned a rebate).

## (6) Proposed Rate;

Xcel Energy proposes to recover the costs of the DSM Plan through an annually adjusted cost recovery rider beginning as soon as is practical following Commission approval. For illustration purposes all tables and exhibits in this petition depict data for the calendar year of 2010. Included as Exhibit 1, pages 1-6 are the proposed tariff pages implementing this change.

### I) Overview of Proposed DSM Programs and Benefits

Table 1 below summarizes the DSM programs being proposed in this filing. For each of our proposed seven programs, the table lists the planned budget in 2010, the expected impact that the program will have on the number of customers reached, and the demand in kW and the energy in kWh projected to be saved. These programs are discussed in detail in subsections III and IV below.

**Table 1 -Proposed DSM Program Summary**

<b>Executive Summary Table - 2010</b>					
<b>2010</b>	<b>Electric Participants</b>	<b>Electric Budget</b>	<b>Generator kW</b>	<b>Generator kWh</b>	<b>TRC Ratio</b>
<b>Business Segment</b>					
Lighting Efficiency	79	\$457,260	676	2,650,369	2.39
Business Saver's Switch	20	\$45,755	152	904	4.07
Peak and Energy Control	10	\$15,000	1,763	95,401	65.00
<b>Business Segment Total</b>	<b>109</b>	<b>\$518,015</b>	<b>2,591</b>	<b>2,746,674</b>	<b>3.21</b>
<b>Residential Segment</b>					
Ground Source Heat Pump	15	\$63,255	9	260,350	0.66
Residential Saver's Switch	500	\$134,830	489	4,132	4.46
Consumer Education	68,000	\$19,800	0	0	-
<b>Residential Segment Total</b>	<b>68,515</b>	<b>\$217,885</b>	<b>498</b>	<b>264,481</b>	<b>1.71</b>
<b>Planning Segment</b>					
Planning and Administration	0	\$15,000	0	0	-
<b>Planning Segment Total</b>	<b>0</b>	<b>\$15,000</b>	<b>0</b>	<b>0</b>	<b>-</b>
<b>PORTFOLIO TOTAL</b>	<b>68,624</b>	<b>\$750,900</b>	<b>3,089</b>	<b>3,011,155</b>	<b>2.77</b>

Table 2 following summarizes the net benefits (benefits less costs) from each program and the cost benefit analysis results for four cost effectiveness tests (Participant test, Utility or Program Administrator test, Ratepayer Impact Measurement (“RIM”) test, and the Total Resource Cost (“TRC”) test as defined by the California Standard Practices Manual. Results of these tests show that the entire portfolio is expected to be cost effective for all four tests. All individual programs are also expected to be cost effective, except for the Ground Source Heat Pumps program (“GSHP”). The reasons for this are discussed more fully under the GSHP program description later in this plan.

**Table 2 -Net Benefits Summary**

Net Benefits Table - 2010								
2010	Participant Test Net Benefits	Participant Test Ratio	Utility Test Net Benefits	Utility Test Ratio	Ratepayer Impact Measure Test Net Benefits	Ratepayer Impact Measure Test Ratio	TRC Test Net Benefits	TRC Test Ratio
<b>Business Segment</b>								
Lighting Efficiency	\$1,242,090	2.72	\$2,089,008	5.57	\$402,100	1.19	\$1,644,190	2.39
Business Saver's Switch	\$516	INF	\$140,599	4.07	\$140,083	4.03	\$140,599	4.07
Peak and Energy Control	\$22,733	INF	\$959,972	65.00	\$937,239	25.84	\$959,972	65.00
<b>Business Segment Total</b>	<b>\$1,265,339</b>	<b>2.75</b>	<b>\$3,189,578</b>	<b>7.16</b>	<b>\$1,479,422</b>	<b>1.66</b>	<b>\$2,744,760</b>	<b>3.21</b>
<b>Residential Segment</b>								
Ground Source Heat Pump	\$8,202	1.03	\$116,046	2.83	-\$117,883	0.60	-\$109,681	0.66
Residential Saver's Switch	\$3,405	INF	\$466,240	4.46	\$462,835	4.35	\$466,240	4.46
Consumer Education								
<b>Residential Segment Total</b>	<b>\$11,607</b>	<b>1.05</b>	<b>\$562,486</b>	<b>3.58</b>	<b>\$325,152</b>	<b>1.71</b>	<b>\$336,759</b>	<b>1.71</b>
<b>Planning Segment</b>								
Planning and Administration								
<b>Planning Segment Total</b>								
<b>PORTFOLIO TOTAL</b>	<b>\$1,276,946</b>	<b>2.30</b>	<b>\$3,737,064</b>	<b>5.98</b>	<b>\$1,789,573</b>	<b>1.66</b>	<b>\$3,066,519</b>	<b>2.77</b>

The Total Resource Cost (“TRC”) test as outlined in the California Standard Practice Manual is the primary test used to evaluate the cost-effectiveness of the programs included in this DSM Plan. As presented in the formulas below, using the Company’s weighted average cost of capital, the present value of utility and participant costs are subtracted from benefits to both the utility and participant. A program is deemed cost-effective when the resulting net benefits equal or exceed the costs, resulting in positive net benefits and a TRC test ratio greater than or equal to 1.0. A Program with negative net benefits and a TRC test score below 1.0 has greater costs than benefits and is not considered cost-effective.

The TRC test is calculated using the following formulas:

- $TRC\ Test\ Net\ Benefits = Avoided\ Utility\ Costs + Participant\ Benefits - Utility\ Program\ Costs - Participant\ Costs$
- $TRC\ Test\ Ratio = (Avoided\ Utility\ Costs + Participant\ Benefits) / (Utility\ Program\ Costs + Participant\ Costs)$

The Utility Cost test and TRC test are further detailed in Exhibit 2.

## **II) DSM Cost Recovery**

Xcel Energy requests to recover the costs of the proposed DSM Plan through an annually adjusted cost recovery rider, as opposed to base rates. The costs to be collected include approved program expenditures, a forecasted performance incentive, and the reconciliation or “true up” amount. The rider will be assessed to all electric customers as a volumetric charge per kWh and will be separately stated on the customer bill as the DSM Factor. The performance incentive is described in a later section.

The costs will be trued up annually with the over or under collections and associated carrying costs rolled into the following year’s balance to be recovered. This ensures that, over the long term, customers pay only the actual costs associated with the programs.

### **A) DSM Adjustment Factor “Tracker” Accounting**

The Company proposes to use a tracker account (“Tracker”) as the accounting mechanism for Demand Side Management (“DSM”) project costs. Each month, the Company will track the amount of actual program expenditures and actual revenues collected from retail customers through the DSM Factor. The difference between expenditures and revenues will be recorded in the Tracker as the amount of over or under recovery for that month.

The Company also proposes to apply a carrying charge to the monthly over or under recovery net of deferred taxes. The carrying charge compensates the utility for carrying an uncollected balance. Conversely, if the utility recovers more than it spends in a given month, the Company pays interest on the balance at the carrying charge rate. The rate is based on the capital structure proposed in our pending rate case. We

note that we have agreed to a different capital structure in our Settlement Stipulation with Commission Staff filed in the pending rate case and that the rate case will be before the Commission at its meeting to be held on January 5, 2010. We will update the carrying charge calculation to reflect the final capital structure, as approved by the Commission from the pending rate case following the conclusion of the docket. The carrying charge calculation is shown in Exhibit 3, Page 3, and is consistent with practices across the Company's service territory.

In its status reports to be filed on May 1 of each year, the Company plans to file the previous year's Tracker, which will show actual expenditures, carrying costs, and recoveries for the year. The Tracker's year-end balance represents the amount of under or over collection to be reconciled in the following year through the new DSM Factor.

The Company will propose a new DSM Factor for the upcoming calendar year based on the forecasted program expenditures, forecasted incentive for the upcoming year's performance and the previous year's ending balance (i.e. the true up). After review and comment, the Commission would then determine whether forecasted expenses and associated rate adjustment factors are appropriate for implementation.

The calculation of the proposed 2010 DSM Factor is included in Exhibit 3. It should be noted that there is no true-up component to the 2010 and 2011 DSM Factor calculations given that in 2010 there will have been no previous cost or revenue activity and there will be have been only six months of Tracker activity when the 2011 Factor is proposed on May 1, 2010. The 2012 DSM Factor filed May 1, 2011 will include reconciliation of the cumulative over or under recovery.

As demonstrated in the box at the lower left corner on page 1 of Exhibit 3, the 2010 DSM Factor is calculated by dividing 2010 total program expenditures, including the forecasted incentive, by 2010 forecasted retail sales for all customer classes. The calculation results in the factor necessary to recover all of Xcel Energy's 2010 expenditures in 2010. The 2010 forecast shown in Exhibit 3, Page 2, estimates the monthly expenses, cost recovery and carrying costs.

## **B) Overcoming Utility Disincentives to DSM**

It is widely recognized that energy efficiency programs, which are designed to decrease energy usage and sales, are contrary to the standard business model of a utility, which improves its financial position over the long term by increasing sales. Decreasing electricity sales result in "lost margins", the term used for the fixed costs

that the utility no longer recovers through its tariffs when DSM is implemented. Thus, because DSM programs are designed to reduce energy usage and peak demand, they inherently create a disincentive for utilities to promote DSM programs.

The fixed costs that are normally recovered through the Company tariffs are not reduced when sales and demands decrease due to DSM programs. Examples of the fixed costs are generation plant, transmission, distribution and general operating and maintenance costs. To evaluate the lost margins associated with our proposed DSM programs, the Company segregated the annual projected program energy saving achievements by rate class and applied the non-variable or fixed costs portion of the tariffs for each rate class to those achievements. The result is a calculation of the lost margins for each rate class for a twelve-month period. The lost margins for each respective rate class are then summed to produce the total lost margins for a twelve-month period.

Because the DSM programs will save energy over many years, lost margins accumulate over time. The total accumulation of lost margins depends on the frequency of rate cases. While the lost margins attributable to DSM can usually be captured in a subsequent rate case and recovered in rates from that time forward, there are lost margins between rate cases, as the effect of DSM achieved after the test year of a given rate case is not reflected in the sales estimate used to determine the rate necessary to recover fixed costs. To estimate the accumulation of lost margins between rate cases, the company assumes that lost margins for the average measure will accumulate for half of the timeframe between rate cases.<sup>3</sup> For instance, if a rate case is filed every 24 months and DSM achievements are fairly constant in those 24 months, the average DSM measure will contribute lost margins, on average, for 12 of those months. It is true, in this case, that measures installed soon after the approval of a rate case will contribute lost margins up to 24 months and measures installed just before approval of a rate case will contribute nearly zero lost margins, resulting in 12 months of lost margins for the average of all measures.

For our proposed set of programs, the cumulative lost margins attributable to our proposed 2010 DSM Plan are projected to be \$160,271 (based on the assumption of rate cases every two years). Should a rate case not be filed for four years, the cumulative lost margins for this proposed plan would be \$320,543. The table below depicts the cumulative lost margins resulting from the proposed 2010 DSM program achievements given three different assumptions of time between rate cases.

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<sup>3</sup> The mean of an arithmetic progression is approximately one-half the end value of the sequence.



**Table 3 - Cumulative Lost Margins; Increasing Time Between Rate Cases**

Years between Rate Cases (A)	Total Generator kWh Saved / Year (B)	Lost Margin per Generator kWh (C)	Average Duration of Lost Margins (Years) (D) = (A)/2	Cumulative Lost Margins from 2010 Achievements* (E) = (B)*(C)*(D)
2 Years Between	3,011,155	\$0.05323	1	\$160,271
4 Years Between	3,011,155	\$0.05323	2	\$320,542
6 Years Between	3,011,155	\$0.05323	3	\$480,812

\* These cumulative lost margins represent the lost margins resulting from a single year's DSM achievements - the 2010 DSM Achievements presented in this plan. Subsequent year achievements will add to the lost margins actually realized. The impact of these lost margins is not captured in this chart.

To mitigate this disincentive, the Company proposes an incentive mechanism appropriate to the proposed program, one that will achieve the goal of overcoming the disincentives to the utility while still passing the large majority of benefits to ratepayers. This incentive mechanism is described in the following sections.

### **C) Proposed Incentive Mechanisms**

The Company's proposed incentive mechanism is designed to address lost revenues created by DSM. The Company's proposed mechanism has two components. The first proposed component is a "rate of return" incentive based on the Company's rate of return as proposed in our most recent rate case.

The second proposed incentive component is a "performance incentive" that would motivate the Company to reach and/or exceed in a cost effective manner any goals approved by the Commission. The incentives are separate, each intending to recover a portion of what the Company would have otherwise received from the sale of energy.

These proposed incentive mechanisms are intended to work in conjunction, so the total incentive each year would be the sum of the two proposed incentive components. We believe this incentive mechanism is appropriate and reasonable, in that it mitigates the inherent disincentive to utilities of DSM programs, represents a range of recovery in line with the lost margins associated with the programs, and results in the customers realizing over 90% of the benefits resulting from the DSM programs.

## 1) Rate of Return Incentive

The first proposed component is a rate of return incentive. It is intended to offset the earnings loss attributable to the proposed DSM programs by earning a rate of return (“ROR”) on the Company’s investment in DSM. This model below is based on the Company’s proposed ROR applied to the actual DSM program expenditures and grossed-up using our current tax rate. The incentive is proposed to be calculated as follows:

$$\text{Incentive (1)} = \text{Expenditures} \times \text{ROR (\%)} \times 1 / (1 - \text{Tax Rate})$$

Based on this calculation, the rate of return portion of the proposed incentive mechanism would be \$104,202 for 2010 based on the proposed ROR in the Company’s current rate case and the proposed budget of this DSM Plan. We will update the ROR to reflect the final ROR approved by the Commission. Exhibit 4 contains the details of this calculation.

Initially, the ROR would be based on the Company’s approved ROR at the time this plan is approved, as well as the approved budget to estimate the amount that should be recovered. Upon completion of each DSM annual status report, the ROR in effect at the end of the year will be applied to the actual spend. Any resulting under- or over-recovery will be included in the true-up component of the Tracker.

This portion of the incentive is not sufficient to overcome the primary disincentive to the utility, the lost margins resulting from the DSM achievements in 2010, estimated conservatively at \$160,271. As such, the company proposes a second component to the mechanism that rewards the utility based on performance.

## 2) Performance Incentive

The second proposed incentive component is a performance incentive which awards an increasing percentage of net benefits as energy savings approach or exceed the approved goals. Net benefits are defined as the avoided generation, marginal energy, transmission, and distribution costs due to the energy and demand savings of the proposed DSM programs less the associated program costs.

This incentive component is designed to reward the Company to both reach and/or exceed the Commission-approved energy savings goals in a cost effective manner. A cost-effective DSM plan ensures the Plan is in the best interest of rate-payers. This

component of the incentive is proposed to be capped at 30% of the Company's approved annual spending budget; however, there is no penalty proposed for under-achievement.

The forecast goals and budgets filed in this DSM Plan represent the Company's best estimate of what can be achieved, but there is a degree of uncertainty. With the expectation that the budget will not be exceeded, and the uncertainty included in the DSM Plan, the maximum achievable energy savings are likely within a range of 90% to 110% of the proposed goal. To recognize this uncertainty and at the same time reward the Company for making progress toward approved goals, a minimum incentive award is proposed to begin with achievement at 90% of goal with the award percentage increasing to a target of 110% achievement for the maximum incentive (equal to 30% of approved budget).

To calculate the percent of net benefits awarded, the maximum incentive of 30% of approved spend is applied to the expected net benefits at 110% of achievement. As shown in Exhibit 4, 30% of the proposed DSM budget of \$750,900 equals \$225,270, which is 5.480% of the expected net benefits at 110% of achievement. This value is then used to determine the percent of net benefits awarded at all possible energy saving achievement levels by declining linearly reaching zero at 80% of achievement. However, no incentive award will be earned until the company reaches 90% of goal energy savings. This scale of net benefits awarded at different energy savings levels will be determined using the final approved budget and approved energy savings as well as the corresponding net benefits resulting from the approved DSM Plan. This scale applied to the final approved Plan would result in the second component of the incentive which is proposed to be recovered throughout the year of the Plan. Upon completion of the annual status report, this scale of net benefits awarded will be applied to the resulting actual net benefits based on the actual energy savings achieved. Any resulting under- or over-recovery will be included in the true-up component of the Tracker.

### 3) Combined Incentive

To determine the appropriateness of the incentive mechanisms, the expected total incentive should be compared to the disincentive of "lost margins" expected for the utility. Based on the proposed DSM Plan, as shown in Exhibit 4, the two proposed incentive mechanism components would result in a combined incentive award to the Company of \$165,639 at 90% of goal achievements, ranging up to \$329,472 at 110% of goal achievement. Compared to the range of expected "lost margins" shown in Table 3, above that range from \$160,271 to \$480,812 the proposed incentive is within

the range of recovery. The Company believes that the models provide an incentive sufficient to cover the disincentives of DSM to the utility.

Another measure of the appropriateness of the incentive mechanisms is a measure of the net benefits that are retained by the ratepayers. To measure the net benefits retained by the ratepayers the Utility Test Net Benefits and the Rate Impact Measure Test Net Benefits, as presented in Table 2, should be considered. The Utility Test Net Benefits represent the net benefits realized by the entire population of ratepayers, including participants in the DSM programs and non-participants. The Rate Impact Measure Net Benefits remove net benefits realized by program participants in the form of bill savings, limiting the impact to just ratepayers that do not participate in the program. As shown in Table 2, the maximum combined proposed incentive of \$329,472 represents less than 10% of the Utility Test Net Benefits expected at goal of \$3,737,064, leaving more than 90% of the benefits resulting from the DSM programs to be reflected in a benefit to the entire population of ratepayers. Table 2 also shows Rate Impact Measure Test Net Benefits of \$1,789,573. The maximum combined proposed incentive represents a fraction of these net benefits, leaving \$1,460,101 in net benefits to the portion of ratepayers that do not participate in the DSM programs.

The Company believes that these mechanisms are appropriate because the proposed mechanisms are expected to achieve the goal of overcoming the disincentives to the utility while still passing the large majority of benefits to ratepayers.

A description of each of the seven DSM programs follows, beginning with the business customer programs, then the residential customer programs and lastly a budget for regulatory management.

## **DSM Program Detail**

### **III.) Proposed Business Programs**

The Business Segment includes all small business and large commercial and industrial customers in Xcel Energy's electric service area in South Dakota. We are offering a portfolio of energy efficiency and load management programs designed to appeal to the greatest number of businesses. The specific programs, listed below, are detailed in the programs section of this document:

- Lighting Efficiency
- Business Saver's Switch, and
- Peak and Energy Control Rates.

Although these specific programs have not changed materially since our original filing two years ago, their budgets have. In the interim, we refreshed the assumptions we use to analyze customer project economics and have determined that higher rebate levels are needed to adequately gain customer and trade partner attention to drive completion of energy efficiency projects, especially in these uncertain economic times. We need a more compelling message to build awareness and drive market momentum. That said, this business portfolio is a collection of some of our most effective programs, so we can deliver substantial energy savings cost-effectively to a broad group of customers.

The Lighting Efficiency Program offers rebates to our customers who purchase and install qualifying energy efficient lighting products in existing building or new construction. Rebates are offered to encourage customers to purchase energy-efficient lighting by lowering the up-front premium costs associated with this energy efficient equipment. The program is available to all commercial and industrial customers in our South Dakota electric service territory.

Xcel Energy has two load management programs available to business electric customers: the Peak and Energy Control Rates and Business Saver's Switch<sup>®</sup>. The programs provide customers with rate discounts for reducing electric load on days with peak demand for electricity (control periods). These programs have been available to customers in South Dakota since 1989.

### **A.) Lighting Efficiency**

For businesses, the cost of lighting is one of the main components of energy bills. Installing energy efficient lighting, or reducing the number of lights needed, can significantly lower energy bills. The main goals of energy efficient lighting are to ensure good visibility for the task required, increase productivity and safety for employees, provide an attractive and comfortable work environment, and reduce operating and maintenance costs.

We offer fixed rebate amounts (a.k.a. prescriptive rebates) for specific lighting equipment used in both retrofit and new construction projects. These prescriptive rebates are easy for customers and the lighting trade to understand and use, as they do not require preapproval or a significant amount of analysis or documentation. Prescriptive rebates are also a very cost-effective means to deliver the program because administrative costs are lower. We strive to provide prescriptive rebates for

as many measures as feasible, and we continually evaluate our options to update and expand the list of equipment as appropriate.

### 1) Retrofit Rebates

Rebates are available for existing facilities of any size to help offset the cost of installing new equipment that is more energy efficient than the current lighting system. Rebate amounts are based on a one-for-one replacement of existing fixtures. Situations where a lighting retrofit can be beneficial are when employees are complaining of comfort issues, such as eyestrain from over lit conditions, or where high energy bills are a concern.

A common retrofit application is replacing an existing fluorescent T12 system in a typical office space with more efficient T8 fluorescent lamps including a high-efficiency electronic ballast. In some instances, the number of lamps installed per fixture can be reduced, while still providing ample light levels. This can yield significant energy savings. In warehouse buildings, or spaces with high ceilings, replacing a High Intensity Discharge lighting (HID) system with a more efficient fluorescent option is a typical retrofit project. Replacing HID lamps such as mercury vapor, high-pressure sodium and metal halide fixtures with high-bay fluorescent options can reduce energy costs and improve light levels. In addition, installing fluorescent T5 systems, compact fluorescent lights (CFL), and several other technologies may be eligible for a rebate when replacing less efficient systems.

Customers can also receive a rebate when “optimizing” their T8 fluorescent systems by permanently removing the equivalent of at least one 4-foot lamp from a fixture as a result of a retrofit. New lamp-quantity appropriate high-efficiency electronic ballasts must be installed and the sockets for the eliminated lamps removed. The customer may not remove more than 50 percent of the existing lamp quantity.

### 2) New Construction Rebates

Rebates are available for new facilities of any size as well as existing facilities that are going through a major renovation. There are several lighting options available to building owners and architects. Influencing better energy-efficient lighting options is the goal of the program. Fluorescent high-bay fixtures, low-wattage T8 lamps and CFLs are a few of the technologies rebated for new construction facilities.

### 3) Rebate Applications

Customers may apply for rebates by completing the application and providing a detailed invoice for the newly installed equipment. The customers will submit for a rebate after the equipment has been purchased and installed. The replacement of fixtures for retrofit situations must be a one-for-one replacement that will result in energy savings. The equipment must be new and meet all the qualifications detailed on the application. After the customer has installed the equipment, the application and invoice must be submitted within twelve months of the invoice date. Once the paperwork is completed and submitted, rebate checks are mailed to the customer within six to eight weeks.

### 4) Measurement and Verification

In order to measure and verify (“M&V”) direct impact from the program and ensure that reported savings are as accurate as possible, we plan to implement the following measures:

- All applications are reviewed prior to processing and sent back to the customer and/or account manager if they are missing information or include incorrect data.
- A daily audit is run on all rebates after processing but before the rebate checks are issued. Errors are corrected and rebates are paid.
- A random sample of approximately 10 percent of the rebates will include a field inspection to verify the equipment rebated is installed. Xcel will use results found through random audits to correct problems found in the field going forward. For instance, the audits may point out that certain lighting vendors need more training on proper installation of efficient lighting.

### 5) Program Budget

For the Lighting Efficiency Program, rebates, labor and promotional expenses drive the majority of the budget. Early in the program we expect labor and promotional costs will be higher than normal, as we work to establish the product in the market and build awareness of the offerings. In subsequent years, we expect rebates will make up a more significant portion of the total budget. The following was used to develop the budget for these specific drivers.

- Rebates: A significant portion of the Lighting Efficiency budget is dedicated to rebates. The rebate budget is an average of all the rebate amounts by lighting technology (or end-use). The rebate levels were developed using a variety of

market resources; the intent is to fund a reasonable amount of the incremental cost, with a goal of reducing the overall project payback to a range that is attractive to customers.

- Labor Charges: Are determined by estimating the number of full-time employees needed to manage the program and execute the marketing strategy and rebate process.
- Marketing and Promotion: Promotional vehicles used to reach the business customers including print, web, direct mail and email marketing efforts.



**Table 4 - Proposed Lighting Rebate Structure**

<b>Technology</b>	<b>Retrofit Rebates (per unit)</b>	<b>New Construction Rebates (per unit)</b>
<b>Fluorescent fixtures with high-efficiency electronic ballasts</b>		
T8	\$18.00 - \$28.00	N/A
T5	\$18.00 - \$24.00	N/A
T12-T8 Optimization	\$20.00 - \$26.00	N/A
T8-T8 Optimization	\$12.00	N/A
<b>Fluorescent low-wattage lamps</b>		
28W or less	\$1.00	\$1.00
CFL Plug-in	\$4.00	\$1.00
<b>Compact Fluorescent fixtures</b>		
Pin-based CFLs	\$25.00 - \$35.00	\$10.00 - \$20.00
<b>High-bay fluorescent fixtures with high-efficiency electronic ballasts</b>		
T5HO or T8	\$85.00 - \$175.00	\$40.00 - \$65.00
<b>High intensity discharge fixtures</b>		
High pressure sodium and metal halide	\$30.00 - \$45.00	N/A
Pulse start metal halide	\$60.00 - \$120.00	\$12.00 - \$28.00
Ceramic metal halide	\$25.00 - \$100.00	\$20.00 - \$45.00
<b>Controls</b>		
Occupancy sensors	\$25.00 - \$50.00	N/A
Photocells	\$25.00	N/A
<b>LED Fixtures</b>		
LED exit signs	\$25.00	N/A
LED traffic balls and arrows (red and green)	\$25.00 - \$50.00	N/A
LED pedestrian signals	\$30.00 - \$40.00	N/A
<b>Parking Garage Fixtures and Lamps</b>		
2- & 3-lamp T5HO or T8 fixtures	\$125.00	N/A
T8 low-wattage lamps 28W or less	\$1.00	N/A

## 6) Marketing Objectives & Strategy

We have focuses our efforts on lighting efficiency opportunities in South Dakota because lighting touches all business customers and is typically among the easiest and most cost-effective efficiency opportunities to implement.

Customers may hear of our Lighting Efficiency Program through several channels, including the Xcel Energy website, direct mail, email promotions, newsletters or through the lighting trade. A Company account manager will work directly with our largest customers to help them identify energy saving opportunities in lighting and our Business Solutions Center is available for all business customers, particularly the small business customers who need information on our rebate programs.

In addition, several collateral pieces are available on the Xcel Energy website. These pieces are geared toward both large and small business customers as well as the trade. The website offers information on lighting technologies, case studies of successful lighting upgrades, and external sources highlighting reasons to pursue lighting upgrades or implement efficient lighting sources. The following are detail of resources available via our Xcel Energy website.

- Rebate Applications – Applications are designed to include all program requirements, rebate levels and additional information to help complete the form and attach needed documentation quickly and easily.
- Lighting Efficiency Program Brochure – This is available on the Lighting Efficiency web page and is used by the account managers to describe the program, discuss reasons to upgrade to more efficient lighting and identify projects in facilities.
- Resource Documents – The Lighting Efficiency web page also links to several documents on energy-efficient lighting technologies, written by outside organizations such as E-Source, to further identify lighting efficiency sources and opportunities.

We also build relationships with the lighting trade to reach customers. We expect they will actively promote our programs because the rebates help provide credibility for their projects and aid in closing the sales. Trade activities include:

- Trade Website – Including applications, specific brochures and informational pieces directed toward the trade along with updates on program offerings.

- Energy Exchange – A quarterly email that is sent to the trade discussing energy-efficiency lighting applications, case studies, program changes, and other pertinent topics.
- Trainings and events as needed -- Primarily designed to bring awareness of program changes and new technologies, and provide learning opportunities to expand the knowledge base of the local trade.

### 7) Program-Specific Policies

This program follows the standard policies for prescriptive measures.

### 8) Involvement of Community Energy Organizations

We will work with a number of community organizations, such as local Chambers of Commerce, to promote the Lighting Efficiency program.

## **B.) Peak Controlled and Energy Controlled Rates**

The Peak Controlled and Energy Controlled Service Rates program offers customers a monthly discount on their demand charges in return for reducing electric loads by a minimum of 50 kW, to a predetermined level, when notified by Xcel Energy.

Participants can save as much as 60 percent on demand charges over the entire year for the demand they agree to reduce during control periods.

Peak Controlled and Energy Controlled Service Rates is generally utilized on hot, humid summer weekdays when Xcel Energy's load in the MISO region is expected to exceed peak capacity. Although control days typically occur during the summer months, they can occur anytime through the year when the reliability of the system may be at risk.

### 1) Measurement and Verification

All Peak Controlled and Energy Controlled Service Rates customers must have an interval data recording meter installed at their facility. This device records the customer's electric usage in 5 or 15 minute intervals. The data from this device is used to determine compliance during control periods and to verify the load relief realized.

## 2) Program Budget

The budget for this program includes labor costs for associated services, with the remaining costs associated with customer communications. Every year a program information packet is sent to each customer, explaining any program changes, reminders of what their responsibility is as an interruptible customer on a control day, and historical information. Every other year, customer meetings are held in the service territory, to train (or re-train) customers on the program and to bring them up to date on any program changes.

## 3) Marketing Objectives & Strategy

The target market for the Peak Controlled and Energy Controlled Rates program is any non-residential customer for general service who agrees to control demand to a predetermined level whenever required by Company. Availability is restricted to customers with a minimum controllable demand of 50kW. Currently, the program is promoted directly through our account management team.

Annual participation in this program is fairly consistent with approximately 2 percent leaving the program with another 2 percent joining the program. The current participation level is at 2,820 customers for the entire program. As a result of the consistent participation, we expect the program budget will remain level. Customer discounts are not expected to change.

Key marketing strategies with the Peak Controlled and Energy Controlled Service Rates program include the following:

- Directly market the programs through the Xcel Energy Account Management staff and the Business Solutions Center;
- Invite potential customers to attend the bi-annual Spring Customer meetings for introduction to the programs and opportunity to interact with others on the rates;
- Annual mailing of informational packets to existing customers and potential customers;
- Provide tools such as marketing material and resources to answer questions and concerns about the details of contract administration, and rate options;
- Provide superior customer service to customers currently on the program;
- Emphasize the value customers receive from being on the rate;

- Increase communications about individual control days by providing control history information in an annual mailing to each customer;
- Increase customer awareness of peak-controlled rates through annual mailings, bi-annual customer meetings and contact by the Xcel Energy Account Management Staff; and
- Prepare customers for control days by sending an information packet each year to the customer, describing in detail how to respond to a control event.

### **C.) Business Saver's Switch<sup>®</sup>**

Business Saver's Switch is a direct load control load management program available to business customers. Similar to Peak and Energy Controlled Rates program, Saver's Switch is generally utilized on hot, humid summer weekdays when our load in the Midwest Independent Transmission System Operator ("MISO") region is expected to exceed peak capacity. However, Saver's Switch is available to all commercial customers, provided they have qualifying central air conditioners.

Participating customers receive a monthly discount of \$5 per enrolled ton of air conditioning during the months of June through September. In exchange they allow Xcel Energy to control electric central air conditioners on days of peak electric demand.

Air conditioners are controlled via a radio-operated switch installed on or near the customer's air conditioner. Switches installed at customer sites are made by either Comverge or Cannon Technologies. Contracted third parties handle installation, switch maintenance, and service calls for the program. Switches installed prior to 2004 utilize a strategy of controlling air conditioners 50 percent of the time (i.e. in a control period, air conditioners are cycled 15 minutes off and 15 minutes on). Switches installed starting in 2004 utilize an adaptive algorithm designed to 'learn' how customers use their air conditioners. Upon activation, the switch adjusts the cycling to achieve a 50 percent reduction in customer load.

Switch hardware and installation work are the bulk of the costs for the commercial Saver's Switch program. In addition we incur labor costs for managing the program and promotional expenses for program expansion.

### 1) Measurement and Verification

We will be performing random site visits to 3 percent of the participating business customer sites to verify the equipment is performing as expected. We anticipate continuing this process annually going forward to ensure a healthy switch population.

### 2) Program Budget

Most of the program costs result from purchasing the switches, hiring electricians to install the switches and handle associated service calls, promotional expenses for recruiting participants, and internal labor costs for managing the program.

### 3) Marketing Objectives & Strategy

The target market for the Saver's Switch is a business customer with central air conditioning. The Saver's Switch program will be promoted directly to commercial customers, primarily via direct mail. The program will also be promoted through Xcel Energy's account management team and the commercial customer contact center.

As of the end of 2008 approximately 500 commercial customers, with a total of about 1,500 air conditioners, are enrolled in the program.

## **IV.) Proposed Residential Programs**

The Residential Segment includes all residential customers in Xcel Energy's electric service area in South Dakota. We are offering a portfolio of a Ground Source Heat Pump rebate program, Saver's Switch and Consumer Education programs which will appeal to the greatest number of customers. As these programs mature, we will continue to evaluate options for possible changes to the residential programs offered in the future

### **A.) Ground Source Heat Pump**

The Ground Source Heat Pump ("GSHP") Rebate program provides a cash rebate incentive to Xcel Energy electric customers who choose to purchase and install a qualifying closed-loop GSHP for heating and cooling their homes. GSHP technology is also referred to by other names such as. GeoExchange, Geothermal, etc.

To be eligible for the rebate, an Xcel Energy customer must not have access to any natural gas service (new home) or must use an electric heating system (existing home) for space heating. We will determine eligibility for existing homes based on the home's winter usage and whether electricity was the primary heating source.

To participate in the program, customers must install the GSHP for both space heating and space cooling; systems installed for the purpose of heating only or cooling only will not be rebated through the Xcel Energy program. This program does not offer additional rebate dollars for domestic water heating with the GSHP unit.

Customers choose an installer for their system. After installation, the application process requires the customer's signature, specific identifying data about the equipment including model number, equipment size, installation address and serial number. The rebate application form, which is provided upon request by Xcel Energy, is submitted to Xcel Energy by either the customer or the installer. A copy of the invoice proving equipment purchase must be submitted with the rebate application form. The information on the invoice must accurately represent the purchased equipment. The applications are reviewed by Xcel Energy Rebate Operations, which verifies the equipment eligibility via [www.energystar.gov](http://www.energystar.gov) site, where a list of qualifying GSHPs is updated frequently. Customers have until July 31 the year following purchase and installation to apply for the rebate.

This rebate program is managed and implemented by an Xcel Energy product portfolio manager who oversees budget and marketing responsibility. A trade relations manager will work with appropriate trade partners and a marketing assistant will help with daily tasks.

### 1) Measurement and Verification (M&V)

An independent third-party contractor will conduct M&V of the equipment and installations. M&V will be performed for approximately 15 percent of the participants. M&V will include site verification of all data required and submitted for the rebate application and verification of the installation of the system and components as designed and detailed in the submittals.

### 2) Program Budget

A budget for this program was developed based on the costs per expected participant and expenses needed to create awareness and to market the program. The expected participation level was determined based on our estimate of new home construction and major remodeling in the service area.

It should be noted that the GSHP program was added at the request of Staff and as such, we have included it in our portfolio offering. However, the cost benefit analysis shows the program to be non-cost-effective due to the relatively high costs of the systems required to meet the maximum heating loads of homes. While there are considerable energy savings from GSHP, especially for heating, they have considerably higher costs than other technologies currently available in the marketplace. To estimate the costs of the systems we have used actual costs of two typical GSHP homes in the Sioux Falls area along with other publically available sources. We also took appropriate tax credits from the Federal Energy Policy Act to reduce the initial cost in our analysis. At this time the initial costs are likely influenced by limited infrastructure and competition, which may change in the future. Also, the system benefits to Xcel Energy are largely driven by summer demand reductions which are nominal for GSHPs. The combination of the above noted factors are causing the GSHP program to fail cost-effectiveness tests. If the Commission determines that we should not offer a GSHP program at this time because it is not cost-effective, we will remove it from our Plan.

### 3) Proposed Rebate Structure

The Proposed Rebate Schedule is below. A complete ENERGY STAR rated system installation is required. Note that trade partner incentives may be implemented in the form of seasonal promotions depending on budget availability and program performance.

#### **Ground Source Heat Pump Rebate Schedule**

<b>Rebate</b>	<b>\$500 Per Heating Ton</b>
<b>Equipment Criteria</b>	<b>SEER/COP Minimum</b>
ENERGY STAR Rated GSHP – Cooling Application	14.1
ENERGY STAR Rated GSHP – Heating Application	3.3

Tons for calculating rebates are defined consistent with ISO 13256-1 or ISO 13256-2 ground-loop conditions; equal to Btuh heating delivered divided by 12,000 Btuh/Ton equaling the Tons for rebate purposes or:

$$\text{Tons (for rebate purposes)} = \frac{\text{Btuh heating}}{12,000 \text{ Btuh/Ton}}$$



Xcel Energy will take savings credit for the actual equipment efficiency and system size installed. The system efficiencies may be higher than the ENERGY STAR requirements, but rebates will be paid on meeting the ENERGY STAR performance levels, based on \$500 per ton heating capacity provided equipment is ENERGY STAR Rated.

#### 4) Marketing Objectives & Strategy

GSHP equipment rebate programs target a small market of our customers who seek out the technology. These customers are typically very energy-conscious, are well informed about GSHP technology and its benefits, and seek out rebates and manufacturer incentives and tax credits to help decrease the purchase cost. Xcel Energy customers experience immediate (cash rebate) and long-term energy savings with their GSHP equipment. GSHPs are currently eligible for a federal tax credit of 30 percent of the cost of the installed system; the tax credit is scheduled to continue through 2016. The estimated tax credits have been used in the cost/ben analyses to reduce the cost of the system to the homeowner.

Program performance is reviewed weekly by the program manager and reviewed monthly by marketing management. Marketing strategies may change to meet the dynamic needs of the program depending on its performance throughout the year.

The GSHP program will use a variety of marketing communications strategies to make customers aware of the program in addition to communicating with participating trade partners. The primary marketing communications tools are:

- Bill inserts opportunities and the customer-focused EnergyWise newsletter mailed to customers' homes with their bills.
- The Xcel Energy website has separate heating and cooling pages by state dedicated to customers and energy partners, such as installers, contractors, and distributors. The pages are updated according to changes or promotions. The rebate schedule is always available on these pages, along with links to related pages or to forms and collateral.
- A trade relations manager will communicate program details to the dealer and distributor channels, conduct training sessions on program specifics, and provide technical support navigating internal computer applications supporting the program, and will mail a quarterly Rebate Central newsletter to registered trade partners.

- Contractors will be encouraged to register as participants of this program with Xcel Energy to ensure they receive accurate and up-to-date information.
- Special training to our call center phone representatives' on program benefits as well as the general benefits of energy efficiency.

### 5) Program-Specific Policies

- The minimum qualifying rebate requirements are for ENERGY STAR qualification (14.1 EER; 3.3 COP).
- Rebates are offered for new home systems or for existing homes to replace less efficient electric systems.
- Homes with on-site access to natural gas service (existing or new homes) will not be eligible for the this program's rebate.
- Eligible equipment for heating and cooling must be installed in new homes or in existing homes where Xcel Energy supplies the electricity.
- Only ground or water source closed-loop systems that include heating *and* cooling will be rebated. Those installed for water heating only are not eligible for the rebate.
- The program is applicable only for the purchase of new ground source heat pump systems, not simply replacement parts.
- This prescriptive rebate program pays the customer rebate according to the qualifying equipment's size when the equipment meets ENERGY STAR standards.
- Program deadlines are consistent with other Xcel Energy residential rebate programs for ease of program management and customer awareness. The date of verification is officially the day that Xcel Energy processes the rebate application.

### 6) Involvement of Community Energy Organizations

GSHP systems can be very complex; trade support is imperative to achieving our goals. The Xcel Energy team will reach out to trade allies to discuss new technologies, program issues, and general market topics to enhance the program.

## **B.) Consumer Education**

Consumer Education is an indirect-impact program that focuses primarily on creating awareness of energy conservation and providing residential customers with information on how to reduce energy usage at home. Because the residential segment is demographically varied, Xcel Energy employs a variety of resources and media to communicate the conservation message.

Communication Strategies include:

- Seasonal advertising spots promoting conservation information and resources for residential customers;
- Online messaging through local newspaper media websites;
- Sponsorship of local conservation publications;
- Publication of reference materials (Spanish and English versions); and
- Sponsorship of seminars and conferences supporting residential conservation.

We will focus on renewing existing and establishing new partnerships with television, online and print media resources. Through these media channels, we will increase contact with our customers, which will help us educate our customers about energy conservation and the variety of resource options and services available to them.

Budgets are developed through identification of customer growth patterns, costs to produce materials, advertising scope, and sponsorship costs. Goals are established by determining the different ways customers consume information and how often these messages are received.

## **C.) Residential Saver's Switch<sup>®</sup>**

Xcel Energy's residential load management program is called Saver's Switch<sup>®</sup>. The program gives participating customers bill discounts in exchange for allowing the Company to control enrolled central air conditioners and water heaters during times of peak demand.

Saver's Switch is a load management program that provides direct load control of central air conditioners and electric water heaters. Participants help Xcel Energy reduce peak electric demands at critical periods. Enrolled central air conditioners are cycled off and on when system or economic conditions exceed predetermined trigger points. Electric water heaters are controlled for durations up to eight hours during

system or economic conditions. Customers receive a 15 percent rate discount on their monthly electric charges June through September each year they participate.

Air conditioners are controlled via a radio-operated switch installed on or near the customer's air conditioner. Customers enrolling a central air conditioner have the option to also enroll an electric water heater for additional discounts. Xcel Energy contracts with licensed electricians to handle switch installation, switch maintenance, and service calls for the program.

Participants receive an additional two percent discount for enrolling their electric water heater. Water heater discounts apply year round and water heaters can also be controlled year round. Currently, a customer cannot enroll a water heater without also enrolling an air conditioner.

Switches installed prior to 2004 utilize a strategy of controlling air conditioners 50 percent of the time (i.e. in a control period, air conditioners are cycled 15 minutes off and 15 minutes on). Switches installed starting in 2004 utilize an adaptive algorithm designed to 'learn' how customers use their air conditioners. Upon cycling, the switch adjusts the cycling to achieve a 50 percent reduction in customer load

Saver's Switch has been a successful program for us since it originated around 1992. It has helped reduce the impact of peak demands for electricity on the hottest days of summer when increased electric use occurs as of result of customers trying to stay cool. We currently have about 15,000 residential customers enrolled in the program. Approximately three percent of participants opt to enroll their water heater in the program. Annual customer attrition from the program is estimated to be about 0.7 percent.

### 1) Measurement & Verification

In territory where the automated meter reading system is available we are able to test switches remotely to identify sites with failed switches. We anticipate continuing this process annually going forward to ensure a healthy switch population.

### 2) Program Budget

The primary costs for the program are switch hardware and installation work. We also incur labor costs for managing the program and promotional expenses for program expansion.

### 3) Marketing Objectives & Strategy

Saver's Switch is promoted through mass-market channels. Eligible electric consumers are informed about the program via direct mail, bill inserts, newsletters, and outbound call campaigns. Customers can also enroll at the Xcel Energy website and view an interactive demo that explains the switch, installation, and what happens on control days.

Utilizing its automated meter reading capabilities, Xcel Energy has developed a process, "Virtual Visit", for identifying non-working switches in the field. This allows us to target our switch replacement efforts (maintenance) rather than visiting large quantities of customer sites. These maintenance efforts lead to greater peak demand savings and ongoing success of the program.

## **V.) Planning & Administration Expenses**

The Planning & Administration group manages all DSM regulatory filings, directs and prepares cost-benefit analyses, provides results of energy conservation achievements, manages electric and gas potential studies and analyzes and prepares cost recovery reports. The group also provides procedures for effectively addressing requirements for the DSM regulatory process. These functions are needed to ensure a cohesive and high-quality DSM portfolio that meets the expectations of Xcel Energy's customers, regulators and staff.

### 1) Program Budget

The Planning & Administration budget consists of labor for the department to produce and evaluate DSM Plans and annual Status Reports, as well as labor to address regulatory issues related to our SD DSM activities. In addition, the budget includes a small allocation for employee travel expenses for in-person meetings at the PUC.

### 2) Annual Status Update

We propose to file an annual status report in May of each year. In this report, we will include achievements and budget expenditures for the previous year and any proposed program or goals and budget changes for the following year. We also will

include the Tracker for the previous year and the calculation of the next year's DSM Factor.

**(7) Proposed effective date of modified rate;**

Xcel Energy proposes to recover the costs of the DSM Plan through an annually adjusted rider beginning as soon as is practical following approval.

**(8) Approximation of annual amount of increase in revenue;**

The impact to a typical non-electric heating residential customer using 750 kWh of electricity per month would be approximately \$0.38 per month.

Exhibit 3, Page 2, shows the DSM Tracker Account activity for 2010. This schedule applies the 2010 DSM Factor to the forecast sales for each month of 2010 and develops the expected monthly revenues predicted for 2010 for this proposed DSM Plan. In total, we propose to recover \$991,629 through the DSM Factor in 2010.

**(9) Points affected;**

The proposed electric tariff would be applicable to all areas served by Xcel Energy in South Dakota.

**(10) Estimation of the number of customers whose cost of service will be affected and annual amounts of either increases or decreases, or both, in cost of service to those customers;**

The proposed electric tariff will apply to all customers throughout all customer classes as described within the filing. Xcel Energy presently serves just over 82,000 electric customers in 36 communities in Eastern South Dakota.

**(11) Statement of facts, expert opinions, documents, and exhibits to support the proposed changes.**

Exhibits attached.

## Planned Customer Notice

The Company plans to provide notice to customers regarding inclusion of this cost on their monthly electric bill. The following is proposed language to be included as a notice on the customers' bill the month the DSM Adjustment Factor is implemented:

*“The Demand-Side Management Adjustment Factor recovers the costs of load management and energy efficiency programs that are being implemented to provide customers with opportunities for cost savings.”*

The Company will work with the Commission Staff to determine if there are any suggestions to modify this notice.

## Service of Filings

We request that communications regarding this Application be directed to:

Kari L. Valley  
Senior Attorney  
Xcel Energy Services Inc.  
414 Nicollet Mall, 5<sup>th</sup> Floor  
Minneapolis, MN 55401  
(612) 330-5500

[SaGonna](#) Thompson  
Records Analyst  
Xcel Energy Services Inc.  
414 Nicollet Mall, 7<sup>th</sup> Floor  
Minneapolis, MN 55401  
(612) 330-5500

## Conclusion

The Company respectfully requests that the Commission approve the proposed DSM Plan, Tariff, financial incentive mechanism and DSM Factor described in this filing. We believe that this proposal reflects an appropriate sharing of the benefits and costs of implementing this DSM plan. If approved, the Company will file an annual status report with proposed changes to the approved DSM Plan for the following year on May 1, 2011. We believe that the proposed DSM Plan, Tariff, financial incentive and DSM Factor reflect an appropriate public policy desire by the Commission to encourage energy efficiency and demand-side management practices while providing customers with an opportunity to decrease their monthly bills.

Xcel Energy looks forward to implementing these programs in South Dakota. The Company appreciates the interest and efforts of South Dakota policy makers in supporting this effort.

Dated: December 31, 2009  
Xcel Energy



By: \_\_\_\_\_  
JAMES C. WILCOX  
Manager, Government & Regulatory Affairs



# Legislative

Northern States Power Company, a Minnesota corporation  
 Minneapolis, Minnesota 55401

PROPOSED

**SOUTH DAKOTA ELECTRIC RATE BOOK - SDPUC NO. 2**

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Date Filed:	<del>09-07-07</del> <u>12-31-09</u>	By:	<del>David M. Sparby</del> <u>Judy M. Poferl</u>	Effective Date:	<del>02-01-09</del>
Docket No.	<u>EL09-07-026</u>		President and CEO of Northern States Power Company, a Minnesota corporation	Order Date:	<del>01-13-09</del>

Northern States Power Company, a Minnesota corporation  
Minneapolis, MN 55401

PROPOSED

**SOUTH DAKOTA ELECTRIC RATE BOOK - SDPUC NO. 2**

**DEMAND SIDE MANAGEMENT COST  
ADJUSTMENT FACTOR**

Section No. 5  
Original Sheet No. 73

**APPLICATION**

Applicable to bills for electric service provided under the Company's retail rate schedules.

**RIDER**

There shall be included on each customer's monthly bill a Demand Side Management Cost Adjustment, which shall be calculated by multiplying the monthly applicable billing kilowatt hours (kWh) by the Demand Side Management Factor (DSM Factor). This Demand Side Management Cost Adjustment shall be calculated before city surcharge and sales tax.

**DETERMINATION OF DSM FACTOR**

A DSM Factor shall be calculated by dividing the forecasted balance of the DSM Tracker Account (Tracker), including any True Up, by the Forecasted Retail Sales for the Next Recovery Period. The DSM Factor shall be rounded to the nearest \$0.00001 per kWh.

The DSM Factor may be adjusted annually with approval of the South Dakota Public Utilities Commission (Commission). The DSM Factor is:

All Customers \$0.000501 per kWh

DSM Tracker shall include all annual expenses, costs and incentives associated with demand side management programs and that are approved by the Commission. All revenues recovered pursuant to the Demand Side Management Cost Adjustment shall be credited to the Tracker.

Forecasted Retail Sales shall be the estimated total retail electric sales for the Next Recovery Period.

Next Recovery Period shall be that period that begins January 1 and ends December 31 following the Company's most recent May 1 filing.

**TRUE-UP**

True Up shall include the difference between the revenues received from customers and actual expenditures for the most recent recovery period ending December 31.

A True Up will be included in each annual May 1 filing beginning with the May 1, 2011 filing. The 2010 and 2011 DSM Factor calculations will not include a True Up due to no previous cost or revenue activity prior to implementation of the Demand Side Management Cost Adjustment in 2010 and only six months of Tracker activity when the 2011 DSM Factor is proposed on May 1, 2010. Beginning with the Company's request submitted on May 1, 2011, the DSM Factor may include a True Up.

N

N

Date Filed: 12-31-09

By: Judy M. Pofert

Effective Date:

President and CEO of Northern States Power Company, a Minnesota corporation

Docket No. EL09-

Order Date:

# **Non-Legislative**

Northern States Power Company, a Minnesota corporation  
 Minneapolis, Minnesota 55401

PROPOSED

**SOUTH DAKOTA ELECTRIC RATE BOOK - SDPUC NO. 2**

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Date Filed: 12-31-09	By: Judy M. Poferl	Effective Date:
	President and CEO of Northern States Power Company, a Minnesota corporation	
Docket No. EL09-		Order Date:

Northern States Power Company, a Minnesota corporation  
Minneapolis, MN 55401

PROPOSED

**SOUTH DAKOTA ELECTRIC RATE BOOK - SDPUC NO. 2**

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**DEMAND SIDE MANAGEMENT COST  
ADJUSTMENT FACTOR**

Section No. 5  
Original Sheet No. 73

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**APPLICATION**

Applicable to bills for electric service provided under the Company's retail rate schedules.

**RIDER**

There shall be included on each customer's monthly bill a Demand Side Management Cost Adjustment, which shall be calculated by multiplying the monthly applicable billing kilowatt hours (kWh) by the Demand Side Management Factor (DSM Factor). This Demand Side Management Cost Adjustment shall be calculated before city surcharge and sales tax.

**DETERMINATION OF DSM FACTOR**

A DSM Factor shall be calculated by dividing the forecasted balance of the DSM Tracker Account (Tracker), including any True Up, by the Forecasted Retail Sales for the Next Recovery Period. The DSM Factor shall be rounded to the nearest \$0.00001 per kWh.

The DSM Factor may be adjusted annually with approval of the South Dakota Public Utilities Commission (Commission). The DSM Factor is:

All Customers \$0.000501 per kWh

DSM Tracker shall include all annual expenses, costs and incentives associated with demand side management programs and that are approved by the Commission. All revenues recovered pursuant to the Demand Side Management Cost Adjustment shall be credited to the Tracker.

Forecasted Retail Sales shall be the estimated total retail electric sales for the Next Recovery Period.

Next Recovery Period shall be that period that begins January 1 and ends December 31 following the Company's most recent May 1 filing.

**TRUE-UP**

True Up shall include the difference between the revenues received from customers and actual expenditures for the most recent recovery period ending December 31.

A True Up will be included in each annual May 1 filing beginning with the May 1, 2011 filing. The 2010 and 2011 DSM Factor calculations will not include a True Up due to no previous cost or revenue activity prior to implementation of the Demand Side Management Cost Adjustment in 2010 and only six months of Tracker activity when the 2011 DSM Factor is proposed on May 1, 2010. Beginning with the Company's request submitted on May 1, 2011, the DSM Factor may include a True Up.

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Date Filed: 12-31-09

By: Judy M. Poferl

Effective Date:

President and CEO of Northern States Power Company, a Minnesota corporation

Docket No. EL09-

Order Date:

N

N

**Cost-Effectiveness Test Formulas**

**Total Resource Cost Test**

The TRC test is calculated using the following formulas:

- $TRC \text{ Test Net Benefits} = Gen_{LAC} + T\&D_{LAC} + ME_{LAC} + PART_{LB} - PAdmin - PART_{LC}$ ,
  - $TRC \text{ Test Ratio} = (Gen_{LAC} + T\&D_{LAC} + ME_{LAC} + PART_{LB}) / (PAdmin + PART_{LC})$ ,
- where*
- $Gen_{LAC}$  = present value of future generation avoided costs over the lifetime of the equipment,
  - $T\&D_{LAC}$  = present value of future transmission and distribution avoided costs over the lifetime of the equipment,
  - $ME_{LAC}$  = present value of future marginal energy avoided costs over the lifetime of the equipment
  - $PART_{LB}$  = present value of participant O&M savings over the lifetime of the equipment, incremental capital savings and rebates from utility
  - $PAdmin$  = program administration costs (including rebate).
  - $PART_{LC}$  = present value of participant O&M costs over the lifetime of the equipment plus incremental capital cost of equipment

**Utility Cost Test**

The Utility Cost test is calculated using the following formulas:

- $Utility \text{ Test Net Benefits} = Gen_{LAC} + T\&D_{LAC} + ME_{LAC} - PAdmin$ ,
  - $Utility \text{ Cost Test Ratio} = (Gen_{LAC} + T\&D_{LAC} + ME_{LAC}) / PAdmin$ ,
- where*
- $Gen_{LAC}$  = present value of future generation avoided costs over the lifetime of the equipment,
  - $T\&D_{LAC}$  = present value of future transmission and distribution avoided costs over the lifetime of the equipment,
  - $ME_{LAC}$  = present value of future marginal energy avoided costs over the lifetime of the equipment, and

$PAdmin$  = program administration costs (including rebate).

**Xcel Energy - 2010 DSM Adjustment Factor Calculation**

<b>2010</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>August</b>	<b>September</b>	<b>October</b>	<b>November</b>	<b>December</b>	<b>Total</b>
1. Beg. Balance	\$0	\$33,884	\$76,520	\$209,444	\$295,118	\$384,821	\$499,973	\$591,348	\$674,483	\$747,816	\$814,566	\$899,979	
2. DSM Program Expenditures	\$13,823	\$22,575	\$112,864	\$65,613	\$69,642	\$95,091	\$71,315	\$63,074	\$53,272	\$46,689	\$65,353	\$71,589	\$750,900
3. Performance Incentive	\$20,061	\$20,061	\$20,061	\$20,061	\$20,061	\$20,061	\$20,061	\$20,061	\$20,061	\$20,061	\$20,061	\$20,061	\$240,729
4. Total Expenditures + Incentive (Sum Lines 1 - 3)	\$33,884	\$76,520	\$209,444	\$295,118	\$384,821	\$499,973	\$591,348	\$674,483	\$747,816	\$814,566	\$899,979	\$991,629	\$991,629
5. Forecasted Sales Volume (MWh)	164,743	151,287	144,491	141,444	158,809	170,617	201,176	190,154	166,601	154,589	160,923	173,217	1,978,052
6. DSM Adjustment Factor (\$/MWh)													
7. Cost Recovery													
8. Sub-Balance (Over/Under Recover (Line 4 - Line 7)	\$33,884	\$76,520	\$209,444	\$295,118	\$384,821	\$499,973	\$591,348	\$674,483	\$747,816	\$814,566	\$899,979	\$991,629	
9. Accumulated Deferred Tax (Line 8 x 35%)													
10. Net Investment (Line 8 - 9)													
11. Carrying Charge Rate													
12. Carrying Charge (Line 10 x Line 11)													
13. End of Month Balance (Line 8 + 12)	\$33,884	\$76,520	\$209,444	\$295,118	\$384,821	\$499,973	\$591,348	\$674,483	\$747,816	\$814,566	\$899,979	\$991,629	

**DSM Adjustment Factor (=Forecasted Total Jan 2010-Dec 2010 DSM Expenditures/ Forecasted Sales Jan 2010-Dec 2010)**  
 = \$991,629/1,978,052  
 = \$ 0.5013 per MWh  
 = \$ 0.000501 per kWh





**Xcel Energy**  
**South Dakota Capital Structure**  
**Carrying Charge Calculation**

**2009 Rate Case**

**Base Assumptions**

<u>Capital Structure:</u>	<u>Percent</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long-term Debt	48.37%	6.64%	3.21%
Short-term Debt	0.00%	0.00%	0.00%
Perferred Stock	0.00%	0.00%	0.00%
Common Equity	51.63%	11.25%	5.81%
	100.00%		9.02%

<b><u>Weighted Cost of Capital</u></b>	
Equity	5.81%
Debt	3.21%
Total	9.02%
Weighted Cost of Capital	9.02%

**Use these values beginning January 1, 2010:**

(b) Composite SD Tax Rate 35.0000%

(c) Carrying Charge Rate =

Annual Revenue Requirements Factor (Rate Base Factor)

$$= \{ \text{Overall Rate of Return} - (\text{Weighted Debt Cost} \times \text{Tax Rate}) \} / (1 - \text{Tax Rate})$$

$$= \{ 0.0902 - (0.0321 \times 0.35) \} / (1 - 0.35)$$

$$= 0.1215$$

Monthly Revenue Requirements Factor

$$= \{ (1 + \text{Annual Revenue Requirements Factor})^{(1/12)} \} - 1$$

$$= \{ (1 + 0.1215)^{(1/12)} \} - 1$$

$$= 0.0096$$

Carrying Charge Rate =

0.009600

**Xcel Energy  
DSM Proposal  
2010 Proposed Incentive Plan**

**Exhibit 4**

**Proposed DSM Plan Goals**

Proposed Budget	\$750,900
Energy Savings Goal at Proposed Budget	3,011,155
Estimated Net Benefits at Proposed Goal	\$3,737,064

**Proposed DSM Investment Incentive**

DSM Investment Incentive Rate	9.02%	Required Rate of Return from the 2009 SD Rate Case (EL09-009, as proposed)
Tax Rate	35.00%	
Incentive @ Proposed Budget	\$104,202	

**Proposed DSM Performance Incentive**

Performance Incentive Cap	\$225,270	30% of Proposed Budget
Performance Incentive Achievement Threshold	90%	
Performance Incentive Achievement Target	110%	
Performance Incentive Multiplier Steps	3	
% of Net Benefits Step Multiplier	1.827%	Incentive Cap/ Projected Net Benefits @ 110% of goal / 3

**Proposed Incentive Calculation**

% of Goal Achievement	Total Energy Savings	% of Net Benefits Multiplier	Estimated Net Benefits Achieved	Estimated Performance Incentive	DSM Investment Incentive (Spend = Budget)	Total Incentive
90%	2,710,040	1.827%	3,363,357	\$61,437	\$104,202	\$165,639
100%	3,011,155	3.653%	3,737,064	\$136,527	\$104,202	\$240,729
110%	3,312,271	5.480%	4,110,770	\$225,270	\$104,202	\$329,472
Maximum Performance Incentive				\$225,270	\$104,202	\$329,472

**Example Proposed Incentive Calculation @ 100% of Goal**

2010 Expected Energy Savings		3,011,155	
2010 Proposed Expenditures		\$750,900	
2010 Performance Incentive Cap	A	\$225,270	30% of Approved Budget
2010 Achievement as a Percent of Goal			2010 Actual Energy Savings / Energy Savings Goal at 100% Approved Budget
Performance Incentive % Net Benefits Multiplier	B	3.653%	Incentive Step Multiplier * ( 1 + (Achievement % - 90%) / 10% )
Achieved Net Benefits	C	\$3,737,064	2010 Actual Net Benefits
Performance Incentive Proposed	(A or B x C)	\$136,527	Lesser of Incentive Cap or Net Benefits Multiplier X 2010 Actual Net Benefits
DSM Investment Incentive Proposed	D	\$104,202	Actual Expenditures * ROR% * 1/(1 - Tax Rate)
Total Incentive Proposed	(A or B x C) + D	\$240,729	Sum of Performance and DSM Investment Incentive