

## Appendix A

**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 2011 PLANNED COSTS TO BE  
INCLUDED IN RATES

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

DOCKET NO. EL11- \_\_\_\_

**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 including a Demand Side Management Cost Adjustment Factor ("DSM Rate") to be included in rates. The Company requests approval to expand its Demand-Side Management offering ("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 31, 2009 in Docket No. EL09-30.<sup>1</sup>

We are proposing a cost effective portfolio of programs as demonstrated by our analysis summarized in Table 1. With the exception of Ground Source Heat Pumps, all of the proposed direct impact programs have a positive benefit to cost ratio. We also believe that there is some significant built-up customer demand for these programs and that these programs will be well received by our customers. The cost impact on customers is modest. The cost of these programs for a typical residential customer using 750 kWh per month is estimated to be approximately 37 cents per month. Finally, we address the disincentive that energy efficiency programs present to utility companies in the form of lost margins. Our proposal seeks to overcome this disincentive with a mechanism that provides an incentive for the Company to achieve the full success of the programs.

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<sup>1</sup>The Company has filed a letter withdrawing its previous proposal filed on December 31, 2009 in Docket No. EL09-030.

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

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

Xcel Energy proposes to add DSM Rate 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 Rate.

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

The proposed tariff and accompanying DSM Rate are designed to implement a DSM Plan that expands on the Company's existing demand-side management offering. The proposed tariff implements a single adjustment factor for all customers' bills, regardless of customer class. Further, our proposed DSM Rate would be implemented through a separate line item on customer bills.

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

In concert with PUC Staff request, this Plan expands our current proposed 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 31-39) and the controlled air conditioner program termed the Saver’s Switch<sup>®</sup> rate rider program (SD Electric Rate Book Section No. 5 Sheet Nos 66-67.2).

## **(6) Proposed rate;**

Xcel Energy proposes to recover the costs of the DSM Plan through an annually adjusted cost recovery rider to be implemented as soon as is practical following Commission approval. 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 on the following page summarizes the DSM programs being proposed in this filing. For each of our proposed seven programs, the table lists the planned budget in 2011 and each year thereafter, the expected impact that the programs will have in terms of the number of customers reached, and the projected savings of both demand in kW and the energy in kWh. Following Commission approval we propose to prorate program budgets for the remainder of 2011 in order to reflect the actual approved program start date. These programs are discussed in detail in subsections III and IV below.

**Table 1 – Proposed Annual DSM Program Summary - 2011**

\*Based on one year of forecasted program performance.

<b>Executive Summary Table - 2011</b>					
<b>2011</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	124	\$459,641	554	2,222,483	2.26
Business Saver's Switch	20	\$33,950	147	877	5.43
Peak and Energy Control	10	\$15,000	1,763	95,401	66.39
<b>Business Segment Total</b>	<b>154</b>	<b>\$508,591</b>	<b>2,465</b>	<b>2,318,761</b>	<b>3.20</b>
<b>Residential Segment</b>					
Residential Home Lighting	5,000	\$50,000	84	1,037,572	4.22
Residential Saver's Switch	750	\$181,650	713	6,020	4.91
Consumer Education	68,000	\$19,800	0	0	-
<b>Residential Segment Total</b>	<b>73,750</b>	<b>\$251,450</b>	<b>796</b>	<b>1,043,592</b>	<b>4.36</b>
<b>Planning Segment</b>					
Regulatory Affairs	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>73,904</b>	<b>\$775,041</b>	<b>3,261</b>	<b>3,362,353</b>	<b>3.40</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 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. Exhibit 2 attached details the cost effectiveness tests used in our analysis.

The TRC test is calculated using the following formulas:

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

## **II) DSM Cost Recovery**

Xcel Energy requests to recover the costs of the proposed DSM Plan and incentive through an annually adjusted cost recovery rider, called a DSM Rate, as opposed to base rates. The costs to be collected include approved program expenditures, a forecasted incentive based on 30 percent of planned spend, and a reconciliation or “true up” amount. The DSM Rate will be assessed to all electric customers as a charge per kWh and will be separately stated on the customer bill as the DSM Factor.

Program 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 customers pay only the actual costs associated with the programs.

### **A) DSM Rate “Tracker” Accounting**

The Company proposes to use a tracker account (“Tracker”) as the accounting mechanism for 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 Rate. 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 to ratepayers on the balance at the carrying charge rate. The rate is based on the capital structure approved in our last rate case. The carrying charge calculation is shown in Exhibit 3, Page 1.

The Company proposes to file annual status reports May 1 of each year that will include the previous year’s Tracker, which will show actual expenditures, carrying costs, and recoveries for the year. The Tracker’s year-end balance will represent the amount of under or over collection to be reconciled in the following year through the new DSM Rate.

In the proposed May 1 annual status report, the Company intends to propose a new DSM Rate for the upcoming calendar year based on the forecasted program expenditures, forecasted percent of spend incentive for the upcoming year’s planned expenditures and the previous year’s ending balance (i.e. the true up). If approved, the rate would go into effect on the first billing cycle in January of the following year.

The calculation of the proposed 2011 DSM Factor is included in Exhibit 3, Page 2. The Company proposes to keep the rate at the 2011 DSM Factor level for 2012 as no true-up data will be available prior to the start of the January billing cycle, when the new rate would be implemented. Additionally, the Company's proposal assumes that the DSM program portfolio and associated budgets will not change in 2012. According to the proposed schedule, the 2013 DSM Factor would be proposed in the 2012 Status Report filed on May 1, 2012 and would include a true-up for any under or over collection during 2011 and 2012.

Exhibit 3, Page 2, illustrates that the 2011 DSM Rate is calculated by dividing 2011 total program expenditures, including the forecasted incentive, by 2011 forecasted retail sales for all customer classes. The calculation results in the rate necessary to recover all of Xcel Energy's 2011 expenditures in 2011. The 2011 forecast shown in Exhibit 3, Page 3, estimates the monthly expenses, cost recovery and carrying costs for 2011. The 2012 forecast shown in Exhibit 3, Page 4 estimates the monthly expenses, cost recovery and carrying costs for 2012. If approved, the per kWh rate calculated in this filing, would be effective for 2011 and 2012. We have calculated the rate using annual DSM 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 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 individual measure will accumulate for half of the timeframe between rate cases.<sup>2</sup>

For our proposed set of programs, the cumulative lost margins attributable to the proposed 2011 DSM Plan are projected to be \$182,106 (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 \$364,212. The table below depicts the cumulative lost margins resulting from the proposed 2011 DSM program achievements given three different assumptions of time between rate cases.

**Table 2 - Cumulative Lost Margins; Due to 2011 DSM Plan**

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 2011 Achievements* (E) = (B)*(C)*(D)
2 Years Between	3,622,703	\$0.05027	1	\$182,106
4 Years Between	3,622,703	\$0.05027	2	\$364,212
6 Years Between	3,622,703	\$0.05027	3	\$546,317

These cumulative lost margins represent the lost margins resulting from a single year's DSM achievements - the 2011 DSM Achievements presented in this plan. Lost margins will be realized in subsequent years for future vintages of programs.

To mitigate this disincentive, the Company proposes an incentive mechanism based on a percent of spend calculation that approximates, for the set of programs proposed in this filing, recovery of the associated lost margins. This mechanism is described in the following sections.

### **C) Proposed Incentive Mechanism**

The Company's proposed incentive mechanism ("mechanism") is a result of an agreement with PUC Staff. The mechanism is proposed to be calculated as follows:

$$\text{Incentive (I)} = \text{Expenditures} \times 30\%$$

<sup>2</sup> The mean of an arithmetic progression is approximately one-half the end value of the sequence.



We believe this incentive mechanism model is appropriate and reasonable, in that it mitigates the inherent disincentive to utilities of DSM programs, and it represents a range of recovery in line with the lost margins associated with the programs.

Based on this calculation and our proposed budget, the proposed incentive under this mechanism would be \$232,512 for 2011. However, when the annual status reports are filed, the mechanism will be calculated on actual expenditures for the previous year, not budgeted costs.

**Table 3 - Proposed Percent of Spend Incentive Mechanism**

	<b>Annual Budget</b>	<b>Incentive</b>
Expenditures x 30% = Proposed Incentive	\$775,041	\$232,512

### **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. Our proposed DSM Plan offers a portfolio of energy efficiency programs designed to appeal to the greatest number of businesses. 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 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 programs have not changed materially since our original filing (December 31, 2009), the budgets have changed. In this filing we have 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.

The Lighting Efficiency Program offers rebates to our customers who purchase and install qualifying energy efficient lighting products in existing buildings or new construction. Rebates are offered to encourage customers to purchase energy-efficient

lighting by lowering the up-front costs associated with this energy efficient equipment. The program will be available to all commercial and industrial customers in our South Dakota electric service territory.

Xcel Energy has two existing 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 propose to 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 low.

### **1) Program Budget/Rebate Structure**

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, as administrative costs decrease, rebates will make up a more significant portion of the total budget. The following was used to develop the budget for these.

- **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:** Labor charges were determined by estimating the number of full-time equivalent employees needed to manage the program and execute the marketing strategy and rebate process. Labor will come from a variety of departments within the Company.
- **Marketing and Promotion:** Promotional vehicles used to reach the business customers include print, web, direct mail and email marketing efforts.

**Table 4 - Proposed Lighting Rebate Structure – follows on the next page.**

<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>Parking Garage fluorescent fixtures with high-efficiency electronic ballasts</b>		
Parking Garage fixture	\$85.00	NA
28W or less	\$1.00	\$1.00
<b>High Intensity Discharge Fixtures</b>		
High Pressure Sodium	\$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	\$15.00 - \$55.00
<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 interior lamps – ENERGY STAR qualified	\$20.00 - \$35.00	\$20.00 - \$35.00
LED interior fixtures - ENERGY STAR qualified	\$100.00 - \$125.00	\$50.00 - \$75.00
LED refrigerated case lighting	\$100.00	\$70.00
LED exterior	\$275.00	\$150.00

## Retrofit Rebates

Rebates are proposed 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 will be based on a one-for-one replacement of existing fixtures.

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 high-pressure sodium or metal halide fixtures with high-bay fluorescent options can reduce energy costs and improve light levels. In addition, installing fluorescent T5 systems, LED lights (light emitting diode), as well as 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 Construction Rebates

Rebates are proposed to become 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.

## Rebate Applications

We propose that customers 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.

## 2) Marketing Objectives & Strategy

We plan to focus 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 will be 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 is a list 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.

## **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 substantially on demand charges over the entire year for the demand they agree to reduce during control periods.

The Peak Controlled and Energy Controlled Service Rate program 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.

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

### **1) Program Budget/Rebate Structure**

The proposed budget for this program includes labor costs for associated services, with the remaining costs associated with customer communications. Every year a program information packet will be sent to each customer, explaining any program changes, reminders of their responsibility as an interruptible customer on a control day, and historical information. Every other year, customer meetings will be held to train customers on the program and to bring them up to date on any program changes.

### **2) 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.

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 and other program features;
- Annual mailing of informational packets to existing customers providing information on program structure, rates, and control history
- Provide marketing materials and resources to answer questions regarding contract administration, and rate options

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

Saver's Switch is a direct load control load management program available to business customers with qualifying central air conditioners. Similar to Electric Rate Savings, Saver's Switch is generally utilized on hot, humid summer weekdays when Xcel Energy's load in the MISO region is expected to exceed peak capacity.

Air conditioners are controlled via a radio-operated switch installed on or near the customer's air conditioner. 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% 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% reduction in customer load.

#### **1) Program Budget/Rebate Structure**

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.

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.



## 2) Marketing Objectives & Strategy

The target market for the Saver's Switch Program is a business customer with central air conditioning. Saver's Switch 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 Business Solutions contact center.

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

The Residential Segment includes all residential customers in Xcel Energy's electric service area in South Dakota. We propose to offer a portfolio of:

- Residential Home Lighting;
- Saver's Switch; and
- Consumer Education programs.

We believe that these programs will appeal to the greatest number of customers. As these programs mature, we will continue to evaluate options for possible additions to the residential programs offered in the future

#### **A.) Residential Home Lighting**

Compact fluorescent light bulbs are an economical and easy way for customers to save electricity. The Home Lighting Program is proposed to offer two ways for customers to obtain CFLs: customers may either purchase CFLs through limited-time discount promotions with local retailers, or through a mail-order sales program, as discussed below:

**Retail Discount Promotions** – Xcel Energy proposes to promote CFLs by offering in-store retail discounts. In these promotions, the bulb manufacturer, retailer, and Xcel Energy will combine funds to offer instant rebates enabling customers to purchase a CFL for the discounted price of approximately \$1.00. The process should be relatively easy; the customer purchases a bulb and receives the discounted price at the cash register.

**Mail Order Sales** – In addition a mail order sales channel will offer customers the ability to purchase a wide variety of CFLs on the web at competitive prices. Many types of CFLs will be available from the website, including twist, globe, decorative, A-line, 3-way, bug lights, full spectrum, dimmable, and torchiere. Xcel Energy will also offer an incentive for customers to buy in quantity. Customers will be able to order bulbs via mail, phone, Internet, and fax. The customer then can pay the vendor directly and the bulbs will be

delivered to the customer's home. Xcel Energy will provide this channel because it believes that it is important to encourage customers to go beyond purchasing the typical twist CFLs and to find models and styles that will work throughout their homes.

### 1.) Program Budget/Rebate Structure

For the Home Lighting Program, incentives, labor and promotional expenses make-up the majority of the budget, with incentives accounting for over 40 percent. Early in the program we expect the cost per unit to be higher, as we work to build awareness of the offering, we expect the cost per unit to decline.

The Home Lighting Program will not offer a direct rebate to customers. Rather, customers will receive discounts at the time of purchase of CFLs from retailers. The average rebate will be \$1.05 per unit.

### 2.) Marketing Objectives & Strategy

The retail discounts that are proposed to be offered for limited periods during the year will drive most of Xcel Energy's CFL sales. We believe that retail discounts will be cost effective, offering the lowest prices and reaching the most diverse subset customers. To promote retail discounts, Xcel Energy participates in the national ENERGY STAR Change A Light, Change the World campaign. This campaign was initiated by the Environmental Protection Agency and encourages utility sponsors nationwide to engage in retail discount promotions during the fall, when consumers are using their lights more. The campaign leverages a nationwide effort providing economies of scale in promotion costs and offers a consistent message across various sponsors. The CFLs will be promoted through a variety of channels including: advertising or promotion, in-store signage, public relations efforts and events.

Xcel Energy will require that manufacturers use ENERGY STAR rated CFLs. Each retailer must offer at minimum one CFL for as little as \$1.00. All retailers must submit monthly sales data including store location, model number and quantity of units sold. Customers may purchase up to 12 bulbs.

## **B.) Consumer Education**

Consumer Education will be 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.

### 1.) Program Budget/Rebate Structure

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.

### 2.) Marketing Objectives & Strategy

Promotional objectives and strategy include:

- Seasonal advertising spots promoting conservation information and resources for residential customers;
- Online messaging through local newspaper media websites; and
- Potential 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.

### **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 Xcel Energy to control enrolled central air conditioners and water heaters during times of peak demand.

Enrolled central air conditioners are cycled off and on when system or economic conditions exceed predetermined trigger points. Electric water heaters are shed for durations up to eight hours during system or economic conditions. Enrolled equipment is controlled via a radio-operated switch installed on or near the customer's air conditioner. Customers receive a rate discount on their monthly electric charges June through September each year they participate

Customers enrolling a central air conditioner have the option to also enroll an electric water heater for additional discounts. Currently, customer cannot enroll a water heater without also enrolling an air conditioner. Xcel Energy contracts with licensed electricians to handle switch installation, switch maintenance, and service calls for the program.

Switches installed prior to 2004 utilize a strategy of controlling air conditioners 50% 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% reduction in customer load

Saver’s Switch has been a successful program for Xcel Energy 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 3% of participants opt to enroll their water heater in the program. Annual customer attrition from the program is estimated to be about 0.7%.

With our automated meter reading system (AMR) we are able to test switches remotely to identify sites with failed switches. This process ensures that non-working switches in the field are identified and replaced, which leads to greater peak demand savings and ongoing success of the program. Our annual installation targets reflect the combined total of new installations and the replacement of failed hardware in the field

## 1) Program Budget/Rebate Structure

Participants on the central air conditioning program receive a 15 percent discount on their June through September electric energy charges. 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.

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.

## 2) Marketing Objectives & Strategy

Saver's Switch is promoted through mass-market channels. Eligible electric consumers will be informed about the program via direct mail, bill inserts, newsletters, and outbound call campaigns. Customers can also enroll at the Xcel Energy website ([www.xcelenergy.com](http://www.xcelenergy.com)) and view an interactive demo that explains the switch, installation, and what happens on control days.

## **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 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/Rebate Structure

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.

### 2.) Marketing Objectives/Strategy

Planning and Administration does no program marketing.

## **(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 \$0.37 per month.

Exhibit 3, Page 2, shows the DSM Tracker Account activity for 2011. This schedule applies the 2011 DSM Factor to the forecast sales for each month of 2011 and develops

the expected monthly revenues predicted for 2011 for this proposed DSM Plan. Again, we will intend to prorate the 2011 budget over the months of actual operation remaining in 2011 after Commission approval.

**(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 83,000 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. The Company has posted a notice of this proposed change in rate in the entryway to our Sioux Falls Service Center.

## Service of Filings

We request that communications regarding this Application be directed to:

Kari L. Valley  
Assistant General Counsel  
Xcel Energy Services Inc.  
414 Nicollet Mall, 5<sup>th</sup> Floor  
Minneapolis, MN 55401  
(612) 215-4526

[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, incentive mechanism and DSM rate described in this filing. An incentive mechanism is crucial to the enabling of this proposal. There are significant disincentives to the Company caused by implementing these proposed programs yet there are also significant benefits to all of our customers. If approved, the Company will file an annual status report and proposed changes to the approved DSM plan for the following year on May 1, 2012. The Company believes that the proposed DSM plan, tariff, incentive mechanism and DSM rate reflect a 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: May 27, 2011

Xcel Energy



By: \_\_\_\_\_

JAMES C. WILCOX  
Manager, Government & Regulatory Affairs