

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

DOCKET NO. 07S-521E

IN THE MATTER OF ADVICE NO. 1495 - PUBLIC SERVICE COMPANY OF COLORADO
REVISION TO THE INTERRUPTIBLE SERVICE OPTION CREDIT (ISOC) TARIFF -
ELECTRIC.

**EXHIBITS OF HARRY C. DI DOMENICO
STAFF OF THE COLORADO PUBLIC UTILITIES COMMISSION**

March 24, 2008

INTERRUPTIBLE SERVICE OPTION CREDIT WORKSHOP

DOCKET NO. 06S-642E

REPORT OF THE PARTICIPANTS IN THE ISOC
WORKSHOP HELD ON AUGUST 9, 2006

October 30, 2007

OVERVIEW

Docket No. 06S-642E was opened so that the Commission could consider Public Service Company of Colorado's (public Service's) request for recovery of the payments made to customers that participated in its Interruptible Service Option Credits (ISOC) Program. The recovery period in the docket ran from June 2005 through November 2005; the initial year in which the ISOC Program was implemented.

As part of Decision No. C07-0559, the Commission ordered workshop(s) be held for the purpose of discussing the usefulness of Public Service's cost benefit analysis for the ISOC Program as well as the methodology used to prepare that analysis, and for integrating issues that may be resolved during the course of the workshop(s). Public Service, Staff and other stakeholders were ordered to address, at a minimum, the following issues.

- 1) Examine the level of coincidence between each of the ISOC Program participants' 15-minute integrated kW demand and system peak.
- 2) Evaluate the advisability and implications of applying accrual accounting to the cost recovery.
- 3) Evaluate the usefulness and purpose of preparing a cost-benefit analysis relating to the ISOC Program and the methodology to be used in preparing such an analysis.
- 4) Analyze methods for optimizing the use of ISOC hours including, but not limited to: (a) an analysis of the results of the application of actual data from the last two years of operation of the ISOC Program; and (b) an analysis of how to eliminate blocks of less than four hours.
- 5) Examine and evaluate the economic interruptions that have been called over the last two years of the ISOC Program's operation and how Energy Markets forecasting can be utilized in this process.

The workshop participants were also required to address the reasoning behind the current ISOC requirement that each interruption be at least four hours.

A single workshop was held on August 8, 2007 with representatives from Staff, Public Service, the Office of Consumer Council and Rocky Mountain Steel Mill in attendance. During the workshop Public Service stated that it considered the ISOC Program to be a key component in its effort to grow demand side management. However, in order to grow the program, Public Service explained that it is currently looking at structural changes to the program that may provide greater appeal to prospective customers. Public Service is currently looking at structural changes in the program that may provide greater appeal customers. Some of the ideas under consideration are as follows.

- Reduction of the required minimum load
- Reduction of the minimum duration for an interruption

- Provisions for aggregation of load
- Revisiting the calculation of avoided cost and contract interruptible load
- The use of a negotiated avoided cost rate
- The establishment of financial incentives for Public Service
- Removal of the eligibility requirement that necessitates being a Public Service customer during the prior year's summer season

Staff agrees with Public Service that the ISOC Program has significant growth potential and supports Public Service in exploring changes that could be used to enhance the marketability of the program and to promote participation.

However, issues surrounding both the calculation of the credits and the determination of benefits remain unresolved. While the program holds considerable promise for reaching a viable, cost effective and clean energy solution to meet Colorado's growing resource need, the benefits attributed to the ISOC program need to be realistically calculated to facilitate a comparison with alternate demand side management scenarios. The report presents for further discussion the issues outlined by the Commission in Decision No. C07-0559 presents the parties' plan for going forward.

WORKSHOP ISSUES

The examination of the level of coincidence between each of the ISOC Program participants' 15-minute integrated kW demand and system peak.

Public Service prepared a table to address the issue of coincidence between each of the ISOC Program participant's 15-minute integrated demand and its system peak. The table was presented at the workshop and is Attachment 1 to this report.

The Commission's order called for an examination of the coincidence between each ISOC Program participant's demand and Public Service's system peak demand. Public Service interpreted this directive to mean that the participants' coincident peak would be examined during Public Service's peak period¹. Therefore, the first column in Public Service's table titled *Max monthly non coincident demand* illustrates the cumulative effect of each participant's maximum peak demand during the month in question. In this instance, there is no coincidence between ISOC participants nor is there coincidence with Public Service's system. The second column titled *Max monthly coincident demand* depicts the highest participant demand on a coincident basis but does not reflect the day or the hour in which Public Service experienced its system peak.

The next two columns depict the billing credits and show whether ISOC Program participants received their full credit for contract interruptible load or whether a

¹ Public Service uses the entire peak period for evaluation, a period from 1200 to 2000 when the system peak demand could be expected to occur, versus actual historical data depicting peak demand.

participant's monthly peak demand fell below the contract interruptible load and therefore the participant received a reduced ISOC credit.²

The columns titled *Max peak period demand peak day* and *Max coincident peak period demand day* depict the participants' load during the peak period on the day Public Service experienced its monthly system peak. However, although the participants demand reflects the day on which the maximum system demand occurs, it does not reflect the actual hour(s) when the demand on Public Service's system was highest.

Staff took an alternate approach to address the Commission's directive. This analysis is presented in Attachment 2. Based on Public Service's assessment that the lion's share of the value received from the ISOC program comes from avoiding the acquisition of additional resources for serving peak load, Staff looked at Public Service's system during the time when demand on the system was highest. Because of the popularity of the ISOC option which calls for 40-hours of interruption, Staff used a forty hour period over which to assess the coincidence between ISOC load and Public Service's native load obligation.

For the forty hours in question for 2006, 9 hours occurred in the month of June, 27 hours occurred in the month of July, and 4 hours occurred in the month of August. Because Public Service called capacity interruptions during 4 of the top forty hours and economic interruptions during 19 of the top forty hours, the initial half hour segment directly prior to an interruption were used as a proxy for ISOC load during the interruption. Had an interruption not occurred, actual loads could have been higher or lower than the proxies

Data highlighted in blue in Attachment 2 represent the hours in which Public Service called an economic interruption. Data highlighted in yellow represent the hours in which Public Service called an economic interruption. Attachment 2 thus illustrates the power available from ISOC participants for reducing demand on Public Service's system and ranges from 16 percent of the ISOC credit to 75 percent of the ISOC credit. It should be noted that the 16 percent figure represents a day when CF&I was not operating and therefore Public Service's largest customer was not available to reduce load.

Evaluate the advisability and implications of applying accrual accounting to the cost recovery.

During the workshop Public Service agreed to use accrual accounting for cost recovery. In the future, the recovery period will run from January through December of each year.

Evaluate the usefulness and purpose of preparing a cost-benefit analysis relating to the ISOC Program and the methodology to be used in preparing such an analysis.

The parties present at the workshop agreed that a benefit exists from preparing an annual cost benefit of the ISOC Program. However, establishing a method for evaluating the ISOC Program presented the group with a considerable challenge. Notwithstanding the

² The tariff bases a participant's Monthly Credit on the lesser of Contract Interruptible Load or the actual Interruptible Demand during the billing month.

challenge, a definitive evaluation is important not only for establishing a cost effective pricing structure but also for the acquisition of generating resources. Currently the ISOC Program is relatively small, but as the program grows, it will become increasingly more important to correctly determine the amount of demand reduction that should be attributed to the ISOC participants. The ISOC Program effects Public Service's acquisition of resources and the reliability of its system. Thus the parties must aim to provide the greatest precision possible in the identification of available demand reduction on Public Service's system.

A benefit stemming from the ISOC Program that has been largely overlooked historically is the environmental and societal impacts resulting from demand side management. The ISOC Program provides a viable alternative to resource acquisition and should be acknowledged for the complete array of benefits inherent in reducing demand on Public Service's system. Limiting the evaluation too narrowly may create undo pressure to demonstrate a positive benefit solely from the standpoint of avoided equipment costs. Creating the proper incentives and relying on a comprehensive evaluation of benefits are both for assessing how Public Service should best to meet its native load obligation by choosing cost effective alternatives, including the ISOC Program.

The workshop produced no agreement on a method for evaluating the ISOC Program. It was agreed upon that this issue would be better left to an upcoming docket to be file at the end of October 2007 revisiting the ISOC program and outlining Public Service's plans to expand the program.

Analyze methods for optimizing the use of ISOC hours including, but not limited to: (a) an analysis of the results of the application of actual data from the last two years of operation of the ISOC Program; and (b) an analysis of how to eliminate blocks of less than four hours.

Several ideas were discussed during the workshop including Public Service's right to use the remaining balance of interruptible hours in one final interruption should the balance be less than four hours. In addition, Public Service brought up the question of whether it was better to use all of the remaining interruptible hours or whether it might be better to reduce the credit paid to ISOC customers. This issue is expected to be fleshed out in greater detail in Public Service's filing of proposed changes to the ISOC program expected on October 31, 2006.

Examine and evaluate the economic interruptions that have been called over the last two years of the ISOC Program's operation and how Energy Markets forecasting can be utilized in this process.

Public Service provided a comparison of actual to potential interruptible hours for 2005, 2006 and 2007 (through July). This comparison is included as Attachment 1.

Public Service stated that Energy Markets considers a variety of factors when evaluating whether to call economic interruptions. These factors include projected weather trends,

unit maintenance schedules, the availability and cost of energy purchases in the market, and other market conditions affecting the projected near-term and long-term prices of energy. Energy Markets also explicitly includes start-up costs when estimating the avoided costs that could be realized through economic interruptions.

Any decision as to whether to call an economic interruption is largely a matter of judgment; given the uncertainty of future market conditions, it is impossible to conclude with certainty that an economic interruption called on any given day will be more valuable than an interruption called later in the year. The Company will continue to assess carefully the need for economic interruptions with the goal of maximizing program benefits to all customers.

Reasons for the Four-Hour Minimum

Public Service explained that the four-hour minimum was included in the tariff in response to customer concerns about being interrupted many times for short periods. The Company plans to revisit this issue in its upcoming ISOC filing.

WORKSHOP CONCESUS

The parties attending the workshop indicated strong support for continuing the ISOC Program. Public Service reiterated its desire to expand the program as part of its continued commitment to demand side management. Although there are outstanding issues related to the pricing of the program and the method used for the cost benefit analysis, all parties are optimistic that these issues can be resolved.

Public Service plans to file an application with proposed changes to the ISOC program for Commission consideration on October 31, 2007. The application will provide a forum for resolving the issues presented herein, and will present an opportunity for reaching a wider audience than the parties attending the workshop. In addition Public Service's upcoming application will afford the Commission a fresh opportunity to weigh in on the extent to which the ISOC Program and other demand side management will help Public Service meet its future resource needs in the larger context of its 2007 Electric Resource Plan.

ISOC Program Participant's 15-minute integrated kW demands on monthly summer peak day

Month	Max monthly non coincident demand	Max monthly coincident demand	Contract Interruptible Load	Monthly credit value kW	Max peak period demand peak day	Max coincident peak period demand peak day	ISOC Status peak period peak day	Peak Day
Jun-05	128,726	117,748	123,884	123,032	120,405	109,258	Partial 2-6 p.m.	20-Jun
Jul-05	128,928	121,918	123,884	121,922	78,300	71,394	None	21-Jul
Aug-05	93,685	80,697	123,884	84,537	79,844	73,163	None	2-Aug
Sep-05	33,490	27,127	123,884	27,554	29,070	24,877	None	7-Sep
Jun-06	128,879	118,927	125,009	123,022	115,111	108,719	Interrupt 2-6 p.m.	14-Jun
Jul-06	128,431	119,129	125,009	120,998	116,873	114,518	Complete 3-7 p.m.	19-Jul
Aug-06	130,447	121,270	125,009	123,590	116,678	108,530	Partial 11 a.m. -7 p.m. Complete 2-6 p.m.	23-Aug
Sep-06	129,579	115,080	125,009	121,326	112,458	108,323	None	6-Sep
Jun-07	131,897	118,337	119,376	119,330	115,635	106,376	Partial 2-6 p.m.	25-Jun
Jul-07	130,673	121,342	119,376	119,291	125,675	113,305	Partial 1-8 p.m.	24-Jul

Attachment 2 Available ISOC Capacity During Top 40 Hours of PSCO's System Peak				
Date	System Load kW	ISOC Monthly Credit kW	ISOC kW Available for Interruption	
6/13/06 15:00	6,329,744	123,022	80,779	66%
6/13/06 16:00	6,390,847	123,022	80,779	66%
6/13/06 17:00	6,418,834	123,022	80,779	66%
6/13/06 18:00	6,341,160	123,022	80,779	66%
6/14/06 14:00	6,304,095	123,022	88,614	72%
6/14/06 15:00	6,371,950	123,022	88,614	72%
6/14/06 16:00	6,549,778	123,022	88,614	72%
6/14/06 17:00	6,566,287	123,022	88,614	72%
6/14/06 18:00	6,498,437	123,022	88,614	72%
7/13/06 17:00	6,283,588	120,998	21,621	18%
7/14/06 15:00	6,295,493	120,998	90,432	75%
7/14/06 16:00	6,357,004	120,998	90,432	75%
7/14/06 17:00	6,428,110	120,998	90,432	75%
7/14/06 18:00	6,366,627	120,998	90,432	75%
7/16/06 17:00	6,285,949	120,998	85,469	71%
7/16/06 18:00	6,316,904	120,998	83,205	69%
7/17/06 15:00	6,345,378	120,998	72,752	60%
7/17/06 16:00	6,388,447	120,998	72,752	60%
7/17/06 17:00	6,324,562	120,998	72,752	60%
7/18/06 14:00	6,388,158	120,998	26,361	22%
7/18/06 15:00	6,364,424	120,998	26,361	22%
7/19/06 13:00	6,323,272	120,998	65,616	54%
7/19/06 14:00	6,558,631	120,998	85,496	71%
7/19/06 15:00	6,618,065	120,998	85,496	71%
7/19/06 16:00	6,611,533	120,998	85,496	71%
7/19/06 17:00	6,490,366	120,998	85,496	71%
7/24/06 14:00	6,348,305	120,998	26,020	22%
7/24/06 15:00	6,447,128	120,998	24,609	20%
7/24/06 16:00	6,476,161	120,998	21,414	18%
7/24/06 17:00	6,378,669	120,998	26,286	22%
7/28/06 15:00	6,348,759	120,998	85,595	71%
7/28/06 16:00	6,385,811	120,998	85,595	71%
7/28/06 17:00	6,402,965	120,998	85,595	71%
7/31/06 15:00	6,378,643	120,998	83,992	69%
7/31/06 16:00	6,429,022	120,998	95,276	79%
7/31/06 17:00	6,302,751	120,998	76,894	64%
8/8/06 17:00	6,321,087	123,590	89,932	73%
8/9/06 17:00	6,309,189	123,590	20,368	16%
8/10/06 16:00	6,276,213	123,590	26,690	22%
8/23/06 17:00	6,332,458	123,590	87,805	71%



MARKET RESEARCH REPORT

PROJECT: Concept Evaluation Focus Groups
Among Large Business Customers

PREPARED FOR:



DATE: February 2, 2007

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PROJECT HISTORY

Formed by the merger of Denver-based New Century Energies and Minneapolis-based Northern States Power Co., Xcel Energy is an electricity and natural gas energy company serving the Western and Midwestern states. Xcel offers a comprehensive portfolio of energy-related products and services to 3.3 million electricity customers and 1.8 million natural gas customers. Xcel has regulated operations in 8 Western and Midwestern states and revenue of \$10 billion annually; owns over 240,000 conductor miles of electricity transmission and distribution lines, and more than 33,000 miles of natural gas pipelines; and operates regulated power plants that generate about 15,200 megawatts of electric power.

Xcel Energy was interested in gathering information from large business customers regarding a new concept whereby their service could be interrupted temporarily in order to disperse energy to other areas / customers. This would be in return for lower rates overall for the large business customers. In order to provide the necessary information, primary market research was conducted to help answer the following questions:

- What level of interest would large customers have in this new concept;
- What rates and rate discounts would be expected with the services; and
- What information is required for large businesses to understand this concept thoroughly?

OBJECTIVES

The primary objective of this research was to capture input from large business customers regarding their interest in, and requirements for, the new concept.

More specifically, the research addressed the following key objectives for Xcel Energy (not exhaustive):

- Assess the levels of satisfaction that customers currently hold for Xcel Energy and explore the set of conditions that could potential spark future changes in this relationship;
- Determine customers interest level in the new product / service offered from Xcel Energy,
- Assess customers' key requirements and purchase catalysts for the new concept; and
- Determine key messaging elements that should be included in the marketing / positioning of this new concept.

METHODOLOGY

In order to gather the necessary information, The Praxi Group conducted a series of qualitative focus group discussions in Colorado. A total of two (2) groups were held, one with large business customers in commercial industries and one with customers from the industrial segment.

The current large business customer respondents were contacted and recruited using lists provided by Xcel Energy. Each group included approximately 7 - 9 participants, lasted approximately 2 hours, and was held at an independent qualitative research facility. All groups were audio taped and videotaped (stationary), with transcripts provided, and all respondents were paid a cash incentive for their participation (\$200 - \$250).

Respondents qualified for the groups in accordance with the following criteria:

- Are solely or largely responsible for relevant decisions related to the energy supplied to the company;
- Use 300 Kilowatts or more of energy monthly;
- Do not currently utilize an interruptible rate program from Xcel Energy;
- Are not involved in construction, churches, office buildings not occupied by the owner, apartment building, or hotels / motels;
- Do not only purchase natural gas from Xcel Energy;
- Currently own their building (Commercial customers only);
- Currently hold classes on a year round basis (Schools only); and
- Do not engage primarily in managing residential apartment buildings (Property Management companies only).

The Praxi Group developed detailed recruitment screeners and discussion guides for the groups, with all drafts reviewed and approved by the clients at Xcel Energy. The Praxi Group also secured the necessary facility and supervised and managed all recruiting for the groups.

All groups were held in Denver on January 23, 2007.

CAVEAT

As with all qualitative research, the results of the focus groups were gathered from a small, non-random sample of respondents and should not, therefore, be used to generate conclusions regarding the attitudes and perceptions of all customer groups represented in the discussions.

KEY FINDINGS AND IMPLICATIONS

- Overall interest levels in the interruptible service concept vary fairly widely, with appeal generally linked to several aspects of the customer's business, operational structure, and philosophies.
 - √ Interest in the concept appears **slightly higher among Commercial businesses** relative to Industrial business customers, the latter of which are more hesitant to consider outages, interruptions, or even reductions to their ongoing power supplies based on higher perceived levels of potentially detrimental impact to their business / production operations.
 - √ Businesses in **multi-tenant real estate-related industries** see value in the concept overall, but also believe that **managing tenants' needs and expectations** during interruptions would be **a key challenge / barrier to the services**.
 - √ **Customers who share decision-making** responsibility with, or who report to, executive-level personnel are more apt to **react cautiously** to the concept based on the predicted, conservative reactions they describe as likely from their partners and superiors. These respondents are also more likely to mention a **need for in-depth cost-benefit analyses** before the concept program could be presented or considered by the decision-making team(s).
 - √ Very **few respondents feel they would be able to accept a 500kW interruption** to their service, based on their current service levels (particularly if they are unable to aggregate this level of interruption across multiple locations). However, several respondents do note an **ability to work through temporary power reductions ranging from 10 to 20 percent**.
 - √ Many respondents **initially react to the concept in terms of a total power shut-down** rather than in the context of potential power usage reductions, which underscores the importance of **cautious and strategic communications** support for the program.

- **Key benefits** associated with the interruptible service program center on **cost savings**, while potential disadvantages include decreased productivity, diminished service or physical comfort levels for customers / tenants / students, costly or otherwise negative reliance on external power generators, and a lack of control over the timing, magnitude, and duration of the interruptions.
 - √ Several respondents express **potentially higher interest levels** if they are somehow **able to control** or limit the **times of day / days of week** the interruptions would occur.
 - √ Respondents who would rely on or consider **external generators** as a substitute for power during the periods of interruption cite **fuel costs and noise as factors** they would need to manage in relation to potential benefits of the interruptible service program.
 - √ Schools and multi-tenant real estate firms note **existing efforts to manage the physical environments** of their buildings and tenant / student sensitivities to reductions in the service levels they are accustomed to as **potential challenges**.
- In terms of the alternative price and notification levels available with the concept program, respondents have difficulty describing the level(s) they would be most interested in due to their initial **objections to various core aspects of the service**.
 - √ Because customers would be unable to control the time of day / day of week of the interruptions, they **struggle to determine an appropriate notification time period for the program**.
 - √ Businesses also have **difficulty predicting how many hours of interruption** they could accept in a year based on concerns related to the use of back-up generators (cost, cleanliness, etc.).
 - √ A **buy-through option does appear to ease many customers' concerns** around the challenge of managing through an interruption that occurs at an inopportune time. While many would expect the buy through price to actually exceed their standard rate, they are also emotionally sensitive to the concept and terminology of "penalties."
 - √ Finally, because many businesses - particularly industrial customers - react fairly negatively to the concept of interruptions lasting more than 4 hours, they **resist migrating toward a specific discount level** as that which might be most attractive or appropriate for their particular operations.

- As noted, many businesses indicate that substantial cost - benefit analyses would need to be conducted in order to fully understand the magnitude of impact the program would have on their operations, particularly in terms of the costs associated with working through operations relative to the potential savings available through participation in the program.
- √ Several respondents suggest that **assistance from Xcel Energy in the preparation of these analyses** would not only save on the demands to internal resources, but would also demonstrate commitment on the part of Xcel Energy to the needs of the customer and the value of the program overall.
- √ On a related note, customers also describe a need for all **communications** related to the program to **concentrate on customer benefits** rather than the needs and potential benefits for Xcel Energy.
- Due to the time and resources needed to prepare for an interruption, **very few, if any, respondents express initial interest in the 10-minute notification option**. In fact, many note a preference for 8 hours of notification or more.
- √ Independent of their ability to manage operations in a 10-minute notification environment, **very few respondents are willing to consider allowing Xcel Energy to manage control of their power usage externally**, or to commit the financial resources necessary to purchase the equipment that would allow for this external control.
- While relatively few concerns are voiced in relation to a 12 or 24-month contract, several respondents **react negatively to a need to provide 6-months notice to cancel their participation** in the program.

DETAILED FINDINGS

Decision-Making Structure

Respondents included a mix of autonomous decision-makers and those who team with other senior associates on decisions related to electric power management.

"I am a supervisor in the maintenance department. My first responsibility is air conditioning, plumbing, controls, asbestos management, energy management, community use, etc." (Commercial Customer)

"I am the energy maintainer, and my responsibility is to specify systems, utilities dealing with energy management, and working on projects to improve energy efficiency." (Commercial Customer)

"I work with a property management company, and we have a team that includes myself and the senior profit manager working together with the regional manager providing all services for our tenants. Anything that goes down, especially electricity, we have hundreds of tenants that call when their electricity isn't fully working. We also have the facilities managers that we call that will work directly with the electrical company to find out why the outages (have occurred)." (Commercial Customer)

"I am responsible for making sure that they are up and running 100 percent of the time. I need to know where my power is. Vice president of operations would be probably our number one go to guy for the rest of our company." (Industrial Customer)

"We do have a head of maintenance, and I am the head of operations. There is also a vice president of manufacturing. Together, we make the decisions." (Industrial Customer)

Perceptions of Xcel Energy

Most respondents describe positive ongoing relationships with Xcel Energy, many of which have been established and managed for long periods of time. A small number of respondents mentioned occasional problems managing and reconciling their Xcel Energy bills.

"I have a real good relationship. Ours is a good one; she keeps us informed, and I try to meet with her four or five times a year." (Commercial Customer)

"We have a national counselor with Xcel that does a good job. They do know their work. Our biggest problem has been with some of the billing problems. Getting the bills accurately, it is difficult to monitor and things keep changing." (Commercial Customer)

Use of Back-up Systems

A majority of all participants currently have some type of back-up power system in place, including both diesel generators and battery-based UPS systems.

"We have a UPS battery backup that sustains our data center, and other than that, we don't have any other generator backup." (Commercial Customer)

"We have backup generators in most of our schools only for emergency circuits. The generators we have are 10 kW up to 60 kW in the high school. We are not looking at keeping the building running." (Commercial Customer)

"Aside from running the base building electricity, a lot of ours are tenant specifics. We have tenants that have data centers, and those data centers will have generators. The building itself probably doesn't." (Commercial Customer)

Among those companies without a back-up system in place, standard procedure is simply to do their best to work through the problems if and when electric outages occur.

"When my building goes down, I call Xcel and find out what the problem is. They give you a length of three to six hours. Then I go to all of my tenants and tell them that we are out of power for three to six hours, you might as well start canceling patients and the building gets shut down." (Commercial Customer)

"We don't have a backup system in our office, so the phones go down and everything goes down when the power goes out. We sit there in the dark with flashlights wondering if it will come back on." (Commercial Customer)

Use of Energy Management Systems

Only a small number of respondents have an Energy Management System in place currently, most of whom use the system for managing the HVAC systems in their building(s).

"We have a system for our lighting systems, and we also have all of our HVAC and mechanical equipment on a different system." (Commercial Customer)

"I have to set my system in the modern buildings which controls all of the main operations HVAC and utilities." (Commercial Customer)

"In a property situation, at the end of the year at a monthly basis, we charge our tenants for common area expenses. They are paying a portion of that bill every month, so we can get audited by our tenants, and at any time they can walk in and say this is too high. So we are constantly trying to juggle and make sure that we are not putting energy into the building when it is not necessary because we could have tenants come back to us and say, 'We are not paying for that.' " (Commercial Customer)

"For most of the machinery, it is all computerized. It is a push-button shutdown. For the larger scale equipment, it is all integrated. It is up to the individual people to take responsibility when they aren't on shift to shutdown their individual equipment. Larger stuff, though, is computerized." (Industrial Customer)

Reactions to the Concept

Respondents were provided with the following concept statement, which was read aloud to the group. In order to capture initial reactions, respondents were asked to rate the concept on a scale of 1 to 10, where 10 means they would be "Very Interested" in the program, and 1 means they would be "Not At All Interested."

Introducing the Interruptible Service Option Credit (ISOC) Program from Xcel Energy. This new program is designed to assist Xcel Energy in meeting the seasonable increases in demand for electric services by accessing the resources being used by business customers during high demand periods. The interruptible service option credit is available to any commercial or industrial customer that agrees to have their electric service interrupted by Xcel Energy on an intermittent basis in exchange for discounts on the pricing of their electric services. More specifically, customers will receive a monthly credit on their demand charges, saving an average of 8 percent to 69 percent on annual demand charges depending on the level of participation selected.

To qualify, customers must have an interruptible demand of at least 500 kilowatts (kW) during the months of June, July, August, and September of the previous year. In order to participate, the customer signs a contract that includes their required firm demand level (the maximum load they expect to use during an interruption period), the hours of interruption per year they are willing to accept, and the amount of advanced notice they require prior to the interruption. Customers can use electricity as usual until Xcel Energy notifies them of an upcoming interruption period. Then, during the interruption period, customers cut their electricity use down to the agreed-upon firm demand level. Should the customer decide not to decrease their usage to their firm demand level, penalties would be applied.

Customers are required to install a dedicated analog phone line. The phone line will allow the customer to see their consumption usage in near real time. Xcel Energy will read the meter every 15 minutes and post the information to our secure Internet site for viewing.

Some more specific details about this program are as follows:

- All interruptions will last a minimum of 4 hours.
- Contracts begin on January 1 of each year, with an initial term of 24 months (six month notice required to cancel.)
- Notification options currently include 10 minutes, 1 hour, or 8 hours.
- Annual interruption level options currently include 40, 80, 160, or 200 hours.

A summary of respondents' ratings of the concept is as follows:

COMMERCIAL: 1, 1, 1, 1, 1, 3, 4, 5, 10

INDUSTRIAL: 1, 4, 5, 5, 6, 6, 7

Initial Reactions and Questions

Many respondents initially reacted to the program concept in the context of power outages rather than some measured reduction in their power usage. As such, many of the initial reactions were negative based on respondents' impressions of how they might continue operations without any electrical power.

"We have to make sure we have a clean power source, but also a reliable power source for most of our systems that are up 24 hours a day. There can't be any down time even in the case of a power loss for the lag of the generators. So, we have several UPS's that we use to carry our whole building load and our critical systems on the generator." (Industrial Customer)

"Everything we have, for both sides of the business, is warm shutdown stuff. There is nothing that is done in a completely cold shutdown because it is at least a 24/6 operation. The problems that you would incur with cold startups and stuff -- there is more money spent on downtime with cold startups than there is just leaving it on and consuming energy across the 24 hours it isn't in use." (Industrial Customer)

"I can see how it would apply to some businesses, but for us it would be a very bad idea. If they interrupt our power, we are shutdown. We have heavy damages if that ever happens." (Industrial Customer)

"We would have to shutdown the printing presses or binder equipment, and then you are starting to talk about production. For us, the summer is our peak production area for greeting cards, and if we fall behind in June, July, or August, we almost never catch up." (Industrial Customer)

"For the manufacturing part of the company, it is go from 7:30 until 4:00. I don't see how I could stop or slow that down. I can see where I have options in the offices and the warehouses, but not with the manufacturing." (Industrial Customer)

"If you shut the printing presses down, you are not printing. If you shut the vacuum pumps down, you are not operating machinery. If you shut the HVAC down on a 95 plus degree day, then the building is going to get hot in a half hour, and the sales people are not making their phone calls. You can't shut the IT department down because then the company goes down. For us, there are just a couple of little roof tops we could shut down; then, just a few of us suffer for a few hours before we go home." (Industrial Customer)

Health care facilities, in particular those with little or no back-up systems in place, were especially skeptical of the value of the program for their business.

"Yeah, probably because it is medical, and there would be no back-up, and the building takes too long to recover. The recovery takes too long." (Commercial Customer)

Among property management firms, single-tenant buildings were seen as possible targets for the program. Multi-tenant buildings were not seen as potential users of the service, however, based on the need to capture approval from all tenants in the building before the program could be implemented.

"I have a building that has one tenant. That one building and that one tenant might say yes to this. Most of my buildings are multi-tenant, so I would have to get the OK. My company would jump at it, but I have tenants that say absolutely not. I have medical tenants, I have attorneys, I have other people as well. There is just no way." (Commercial Customer)

Several respondents reacted immediately by asking whether they would be able to choose the time and date of the service interruptions.

"If we could do it time specific, it would be better; although, that is not the point when you are talking about a demand situation which is during the day when everyone is using their power. That building -- one building in the summertime is about 400 kilowatts, so it wouldn't qualify anyways." (Commercial Customer)

"The way it sounds, we might be able to select the times we would be willing to have our power interrupted. If that is the case, we are shutdown every night from one in the morning until about five. So, if we could do it in that four hour time, my bosses might take an interest, if the savings were acceptable." (Industrial Customer)

One school-based respondent believes the use of back-up generators for any extended period of time would cause concern and potentially negative reactions in the surrounding community.

"In the case of schools, they are quite noisy, and people would not like that generator running for that amount of time. We would have to install one of our backup generators, and what would be the payback on that? We would have to look pretty hard on that before we invest in that." (Commercial Customer)

While some respondents did eventually envision possible participation in the program based on reductions to their power usage (rather than outage), the level(s) at which they would be willing to participate appeared to represent fairly small proportions of their total usage.

"The only thing I could think of that would work is if you did some type of retro fit to all the fixtures in the building where it would take half the light and dim it. Also, instead of running your blower motors on high, you could have a setback where it kicks them to low for a couple hours. Something like that where you are running but not at 100 percent."
(Commercial Customer)

"I think it is a pretty good idea and it very well could work for us as long as it wasn't total. If it was a little bit - time of day doesn't really matter. At night, we only run two machines so we could not do it at night from ten to six in the morning. We aren't using that much then anyhow, but during that day it would be OK." (Industrial Customer)

"I think we probably could do ten percent but in the summer time we 7 to 800 kilowatts. So, we couldn't reduce 300 (kW) in a month." (Industrial Customer)

Most respondents agreed that a substantial amount of cost-benefit analyses would need to be conducted before their company could effectively gauge the value of the program and make a reliable decision regarding their potential participation.

"If I am saving eight percent, I would probably buy through all the time. It is not attractive enough, especially through the peak months when you are more likely to get a blackout. It would have to be significant savings." (Commercial Customer)

"I think, from an ownership standpoint, our company is more than willing to pay the cost and allocate the capital of five, seven, or ten years. If it increases the value to the building and it increases the value to our tenants, that is something that has to be analyzed. We will definitely put a backup system in for the whole building and say that Xcel is going to take ten percent of our power 80 hours a year, but we are going to have a backup system to cover you, and we will cover that cost as long as our savings outweighs the cost of that generator." (Commercial Customer)

"There is a whole lot we would need to know. It is very confusing. I would need to know exactly what times they are going to talk about." (Industrial Customer)

"How much are they looking at us reducing? Do we have a choice? OK, we agree to reduce 50 percent or we will reduce 100 percent? There are a lot of issues if you are going to sign a contract. I know they are trying to do it really simple, but I could come up with 100 questions." (Industrial Customer)

"I know that when all of our equipment is going in the morning that there is a demand. We started to investigate how to control that demand charge, since that is such a big component of the bill. We are not sophisticated enough. If we went through process by process and knew how much power things were consuming, we could possibly come up with - I'm thinking that there could be a possibility of shutting some processes down for a period of time." (Industrial Customer)

"I think one of the things you are going to look at is the percentage you are going to save. That is obviously part of the bottom line. If you wanted to really save, then you would see if you could figure out a way to accept more hours. That would have to be a sit down thing with everybody that would basically control this. What are we willing to accept? What can we accept? What can we do? If it has happened, what would we do? All of these things would have to be set up. It is not just a matter of yes we can do this and we do it. You have to make up the time you have lost somewhere. How do you do that? Then, are you willing to pay overtime if you have to go that route?" (Industrial Customer)

"If I am doing it right, I just did my bill with demand surcharge which is half of our power bill for the month. I think fifty percent of that is like \$35,000 annually for me. And, that is not a lot of money to deal with all the headaches." (Industrial Customer)

Some respondents suggested that assistance from Xcel in preparing and conducting the necessarily cost - benefit analyses would be valuable.

"I am sure that there are ways I don't know about that we could reduce usage. I would like to see Xcel put together some kind of energy analysis where they come out and look at your company. Then they can tell you that these are the ways they think you could get in there. If they help you out, it isn't all on you to come up with it because that penalty is always hanging over your head. So, if you make a mistake or if you need that power when they are telling you to turn it off, you pay the penalty. If you worked with Xcel to come up with a workable plan and they helped you with the analysis, Xcel is helping more with the program." (Industrial Customer)

"If Xcel could come out or just say on a day-to-day basis here is the peak that you hit and show you that on a running scale; then come out and tell us here is why you hit 1000 kilowatts today. If you turned this off or slow it down, then that will come down." (Industrial Customer)

Many respondents posed initial questions regarding the actual volume of their power usage that would be interrupted. Independent of the levels needed to qualify, many were confused by the language of the program, particularly regarding how much power they could expect to be interrupted.

"I have a question here. The last sentence on this eligibility thing just kind of hit me: 'in addition, a customer's contract interruptible must be greater than 500.' Does that mean you are going to take more than 500 kilowatts away from us? That is what it sounds like to me; I have to qualify to be able to give up a minimum of that. Then, you are going to take not only the 500 kilowatts, but you are going to take more than that." (Industrial Customer)

Eligibility

Overall, relatively few of the respondents believed their company would be eligible for the program based on the 500kW usage requirements.

"We are always looking for opportunities to shave our peak numbers and, yes, there is probably a level we could live with, but I suspect that is closer to 50 (kW)." (Commercial Customer)

Buy Through

Most respondents reacted positively to the possibility of "buying through" an interruption in the instance that they are not in position to accept at a particular point in time. The degree of flexibility this option would afford was a clear benefit to the program as a whole.

"I think it makes it more attractive. If you are out of time and it is OK for you and OK for the people in the building, you can say, 'Sure, we will do those four hours today; no problem. But if it is June 15th and it is 105 degrees outside and it is 12:00 in the afternoon then, yeah, we will pay that extra money.'" (Commercial Customer)

Most respondents would expect the costs associated with a "buy through" option to actually exceed the standard costs of their electrical power.

"Ten percent more above the standard for that time period." (Commercial Customer)

"Probably into a penalty zone because we have said yes we will, and then when you say to shutdown power, we say no we can't. I would assume it would have to be a penalty. I agree, I think it would be above the standard rate." (Industrial Customer)

"It would have to be like a 25 to 30 percent increase to buy out, and the penalty fee might be at a 50 percent increase over normal." (Industrial Customer)

Penalties

Many respondents express initial concern regarding the potential for penalties with the program, primarily in relation to the possible size of the penalties.

"Another thing here is the penalty, too. If you go over your - if we are in that period and something happens and we need power, what are we going to be looking at for penalties?" (Industrial Customer)

"The penalty thing seems like if you get involved here you have some problems. I don't know how heavy the penalty is going to be." (Industrial Customer)

Aggregation

Many respondents react negatively to any limit on their ability to aggregate their power usage across multiple locations in order to be eligible for participation in the program. Several note an inability to participate unless they are allowed to aggregate their services across locations.

"Because we have our accounting offices in one building, we could pretty much shut that building down or cut their power down 75 percent to help us get into this program. Then, we could leave our production floor up full time at full power. If we can't do that and I would have to cut the production floor, then we can't do that." (Industrial Customer)

Discounts Versus Frequency of Interruptions

Many respondents pose questions as to whether they will still receive the discounts if Xcel doesn't ask for the interruptions.

"What if I don't use my 40 hours? Is there a possibility of me not having to use my 40 hours and still being able to program?" (Commercial Customer)

"Do you get the discounted rate or do you only get the discounted rate when they are taking your power?" (Industrial Customer)

"You are in a contract with them for these rates when sign-up." (Industrial Customer)

"You wouldn't get the discounted rates, but you would be using fewer hours because the weather isn't as terrible as it normally is." (Industrial Customer)

"I guess that was my understanding: you get the rate only when they take your power. That is one of the reasons I thought it wasn't such a bad deal. No matter what, you are going to save this amount of money. If you use it fine, if they take it, so be it." (Industrial Customer)

Interruption Duration

Overall, most respondents indicate a preference for interruptions to last no longer than four hours, rather than the four-hour minimum described in the concept statement. For some businesses, the ability to work through interruptions longer than four hours is a function of their worker shifts.

"We would have to switch shifts. If we shut down processes during the summer months, that second shift, the one in the afternoon until 5:00 -- we would have to move the processes to the night shift. So, 24 hour notice - I don't think a shutdown could be later than 10:00 at night. We would have to be back full power; so, the nightshift could be running the processes we were shutdown for." (Industrial Customer)

Some respondents are willing to accept interruptions over consecutive days, provided the interruptions are not too long in terms of individual duration.

"Well, we probably could for a couple of days but it couldn't be for a whole week; maybe a Monday and a Wednesday." (Industrial Customer)

Recovery time following an interruption is a core component of businesses' consideration of the program. For many, recovery times are tied to the time of day and day of the week the interruptions might occur.

*"Initially, I suspect this interruption would be during their peak low when everyone is cooling; from three to seven on a hot summer day. If we go back up after 7:00 and the sun sets, we can start to cool our building back down easily at that point. Depending on the weather and what time the interruption is and what is going on in the building."
(Commercial Customer)*

"I was going to say that flexibility did come back up online at 7:00 at night, then I have to pay overtime and a minimum two-hour salary to the engineer that is on call to reprogram and bring that building back up. I am putting salary charges on top of that." (Commercial Customer)

Time Notification

The amount of notification businesses are provided prior to an interruption is among the most crucial components of the program. Most respondents were generally unwilling to accept any level of notification less than one hour, with many preferring eight hours or more. However, these perceptions were again often tied to the respondents' impressions of power outages rather than reductions.

"You would need a very sophisticated control system unless you were to shut down the systems yourself. It would be at least an hour, because you want to shut everything down softly. It hurts the encryption on the circuitry." (Commercial Customer)

"At least a minimum of eight hours. A ten minute notification would kill me. Because then penalties would come into effect. I couldn't shutdown my servers fast enough to not hit that ten minute mark. It takes me 15 to 20 minutes to get half of them powered off. So, I would be in the penalty phase if I only had ten minutes notice. An hour, I would be pushing it. But, eight hours, where I could schedule or plan to make sure everyone knows the servers are going down for four hours before they will be back up. I say a minimum of eight hours, if not more." (Industrial Customer)

"In the manufacturing and production of materials type environment, forget it; you can not have ten minute notification. If you are in the services based environment you might be able to do something." (Industrial Customer)

"External customers all of a sudden come up, and we now have a reason not to be interrupted. Then Xcel says 'ten minute notification. You're down. Thank you. Have a nice day.' I'm dead in the water and losing money. It is not going to happen. The ten minute notification would be a definite no, if Xcel must have control over that. No, it would not happen." (Industrial Customer)

Participants managing tenant-occupied buildings indicate that even more notice would be required due to the need to inform their tenants of the pending interruptions.

"I think it would be easier to obtain tenant approval if you could give them notice and an amount of time. I would be more inclined to the eight hour. We could take the buildings down in an hour, but for notifications, we need to let them know, and it would take over an hour." (Commercial Customer)

Up-Front Participation Costs

For most respondents, the idea of spending up to \$40,000 on premise equipment was a clear barrier to participation. For some, however, this possible investment was more a function of the possible savings / returns that could be experienced over time.

"So, now I am spending \$40,000 to save \$10,000. Potentially, but I don't know. Now you are asking me to spend a whole lot of money to possibly save a little bit." (Industrial Customer)

"If it was something that we thought would be good for our company, we would do it. Cost has a place, but if it was going to cost us \$40,000 dollars and for the next 50 years we are going to save \$10,000 a year, \$40,000 dollars is nothing." (Industrial Customer)

Some respondents questioned their ability / willingness to install an analog telephone line for use by Xcel, primarily due to the prevalence of digital lines in current businesses.

"I have an analog phone line for my alarm system and three phone lines, otherwise it is all digital." (Industrial Customer)

Physical Control

The potential to allow Xcel Energy to maintain control of their internal power systems was not something most respondents were willing to consider as part of the program. To most, this represented an unacceptable risk to their systems.

"There is no way I would let Xcel take control of our systems. There is just no way that it would pay off for us to make it worth our while. We have systems that we could set them up for an interruption. We could program things that it is like a push of a button and we are ready, but I don't see any way we would let them take control of our control systems in any way. There is too much risk there for us." (Commercial Customer)

"With the nature of safety issues, I don't think I could. With all of the data center components, it would need to be a control shutdown atmosphere. If something went wrong because they decided to do that, it would be far too costly for us." (Commercial Customer)

Contract Length and Cancellation Requirements

Most respondents felt that a 2-year contract agreement is longer than they would want to consider, at least for the initial program agreement.

"I would say, since this is the first time out of the chute, why do they make it 24 months? Why don't they change that to 12 months, for instance, and see how that goes or even 6 months? Well, 12 months I guess would be more like it." (Industrial Customer)

More than contract length, respondents reacted negatively to the requirement to provide six months notice in order to cancel their participation.

"The first time that it happens, let's say that it is right at the end of the month and they are screaming revenue. You have six months to cancel it; if the first month in June, you decide that it is the worst idea ever you have another four months during peak season of them shutting your power off before you can get out of it. I don't understand why Xcel constantly puts the risk on their customers." (Industrial Customer)

Several respondents feel it will be important for any marketing communications materials provided by Xcel Energy to focus strongly on the specific benefits available to their customers, rather than on the factors that are influencing Xcel Energy's decision to offer the program.

"You will notice in the wording of the program (concept statement), there is only one sentence that goes over the positive effects for the customer. That is the last sentence of the first paragraph. That is the only thing in here that says how it is positive for you. The rest of it is how long you are going to be interrupted, the length of contract, the notification options, and the annual interruption levels. Each one of these, someone in this group has had an issue with. I think that the analysis is going to be the first part of it but there has to be more of a benefit to the customer that is spelled out." (Industrial Customer)

As part of Xcel Energy's promotion of the program, some businesses express a willingness to review and consider testimonials provided by other businesses that have participated in similar programs in the past.

"Maybe references would help or if we could talk to them, because we don't know what kind of processes they have." (Industrial Customer)

"I would like to hear some of the different strategies and how they made it work. That is what I think would be helpful. To know what they did achieve it." (Industrial Customer)

Results from Program Element Rating Exercise

Respondents were provided with a worksheet listing the various elements of the Interruptible Service program and asked to indicate which would be most and least important in their consideration of the program. A summary of the feedback provided via this exercise is provided below.

Elements rated as Most Important by respondents included (comments provided in *italics*):

- Price Discount (12 of 16 respondents)

"Must exceed cost of alternative energy."

"Profit must be greater than expenses incurred for participating."

"Being able to offset costs of downtime."

"Discount is most important of all; incentive to get tenants to agree."

"Must be able to cost-justify."

"Minimum 25 percent."

"50% - 60%"

"Enough to make a cost-benefit analysis positive."

- Notification Time (12 of 16 respondents)

"Preset times hurt."

"Need time to notify all tenants / parties participating."

"At least 8 hours."

"24 hours +."

"4 - 8 hours."

"24 hours" (X3 respondents)

"Minimum 8 hours, prefer 24."

- Number of Hours of Interruption per Day (7 of 16 respondents)

"4 hours maximum."

"4 - 6 hours per day maximum."

"Need to be able to schedule work."

"Analysis of interruption parameters so as to not impact operations."

"2 hours maximum."

"Maximum of 4 hours."

- Proportion of Load to be Interrupted (5 of 16 respondents)

"Xcel should help determine power of each machine."

"10 percent reduction."

"Maximum of 25 percent."

Elements rated as Least Important by respondents included (comments provided in *italics*):

- Historical Load Requirements (8 of 16 respondents)

"Already determined."

- Physical Control of Customer Systems (7 of 16 respondents)

"Never."

- Eligibility (6 of 16 respondents)

APPENDICES

Recruitment Screener

The Praxi Group, Inc. PPJ6-6038

Xcel Energy
Large Business Concept Focus Groups
Recruitment Screener V5.0 (01.16.07)

NAME: _____
TITLE: _____
COMPANY: _____
ADDRESS: _____
CITY: _____
STATE: _____ ZIP: _____
PHONE: _____ FAX: _____
EMAIL: _____
RECRUITER: _____
DATE: _____ TIME: _____

RECRUITMENT GOALS:

- RECRUIT 11 FOR 8 TO SHOW
- INCENTIVE \$200 (\$250 IF NEEDED TO RECRUIT FROM OUTLYING AREAS)

RECRUITMENT CRITERIA:

- ALL RESPONDENTS MUST BE RESPONSIBLE FOR THE ELECTRIC POWER SERVICE DECISIONS MADE AT THEIR FACILITY.
- ALL RESPONDENTS MUST NOT CURRENTLY BE UTILIZING AN XCEL INTERRUPTIBLE RATE PROGRAM.
- ARE NOT OPERATING IN ANY OF THE FOLLOWING INDUSTRIES:
 - ✓ CONSTRUCTION
 - ✓ CHURCHES
 - ✓ OFFICE BUILDINGS NOT OCCUPIED BY THE OWNER
 - ✓ APARTMENT BUILDINGS
 - ✓ HOTELS / MOTELS / ACCOMMODATIONS
- MUST NOT ONLY PURCHASE NATURAL GAS FROM XCEL ENERGY
- GROUP STRUCTURE:
 - ✓ GROUP 1: COMMERCIAL BUSINESS CATEGORIES
 - ✓ GROUP 2: INDUSTRIAL BUSINESS CATEGORIES

THE PRAXI GROUP, INC. 2007© 1 Xcel Energy Concept FG Screener V5.0 (01.16.07)

Discussion Guide

Xcel Energy (SDC Concept Focus Groups)
Discussion Guide
V3.0 (01.20.07)

I. INTRODUCTION (30 minutes @ 10:00)

A. Purpose and Objectives

1. Moderator introduces self and reviews guidelines of focus groups.
 - a. Basic goal of qualitative research.
 - b. Need for candid and participation, no wrong answers.
 - c. Room specifications (audio taping, mirror, videotaping).
2. Introduce purpose / topic of groups: to discuss perceptions and usage electric services.

B. Introductions: have respondents introduce themselves and cover:

1. Name
2. Company
3. Roles and Responsibilities
4. Warm-up item (T&C)

II. DISCUSSION OF ELECTRIC SERVICE SYSTEMS / USAGE (20 minutes @ 10:30)

NOTE: RESPONDENTS ASKED TO COME PREPARED TO DISCUSS THIS SECTION

A. Please tell me a little bit about how your company is structured in terms of managing the electric power services utilized at its facilities.

1. What is your job title and what are your general responsibilities in terms of managing your company's / facility's electric power services?
 - a. Do you make decisions, recommendations, or both?
 - b. Are you responsible for just one location, or more than one?
 - c. Do your responsibilities differ at all across the different locations?
2. Who else is involved in those decisions, and what are their responsibilities?
 - a. What is your relationship to the other decision-makers?

The Praxi Group, Inc. 2007© 1 Xcel Energy SDC Concept Focus Groups Discussion Guide V3.0 (01.20.07)



MARKET RESEARCH REPORT

PROJECT: BUSINESS ACCEPTANCE OF AN ENERGY RATE SAVINGS PROGRAM

PREPARED FOR:



DATE:

April 30, 2007 (v4.0)

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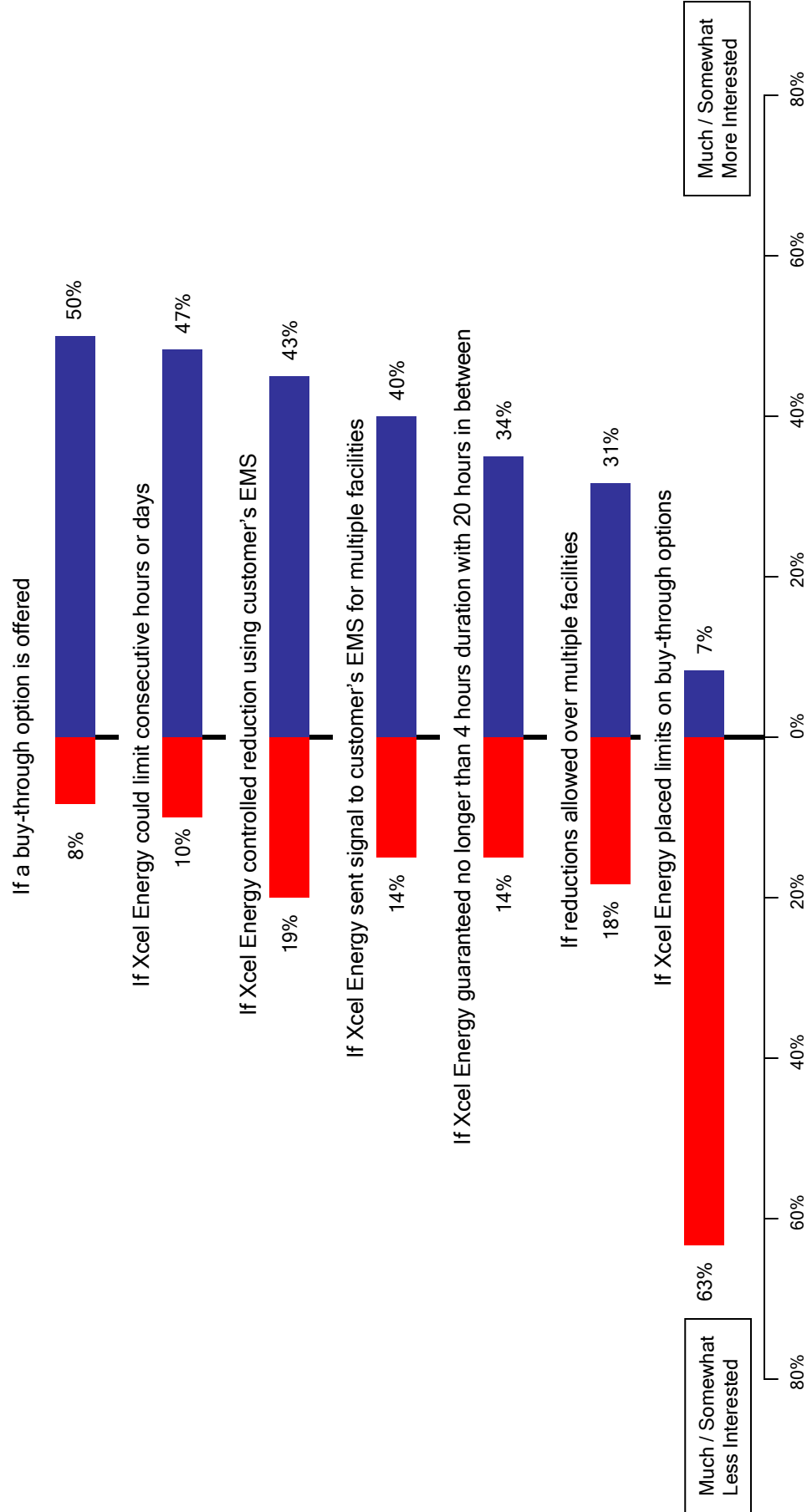
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EXECUTIVE SUMMARY

- More than half of businesses are at least “Somewhat Interested” in the Energy Rate Savings Program from Xcel Energy; one in four (23%) are “Extremely” or “Very Interested.” Companies in business for 10 years or more tend to be more interested in the concept, while those without an EMS tend to be less interested.
 - ✓ Businesses in Heavy Industry categories are significantly more likely than others to be “Extremely” or “Very Interested” in the concept (35 percent versus 16 percent).
 - ✓ Using standardized discounting measures, approximately one in four businesses - 24 percent - can be expected to express serious interest in the Energy Rate Savings Program.
- Three in four businesses would be most interested in the Program option offering 40 hours of annual control with 1 hour of notification. Overall, the 10-minute notification options appeal to fewer than one in ten businesses. Businesses that are more interested in the Program in general are more likely to prefer the 80 hour / 1 hour notification option, as are high-volume power use companies.
 - ✓ Companies in Heavy Industry categories are significantly more likely than others to prefer the 40 hours of annual control with 1 hour of notification.
- Among the potential benefits of the ERSP, businesses feel the ability to save on the costs of their power is the most important. The ability to reduce power at multiple facilities is relatively least important.
- If Xcel Energy offers the ERSP, most businesses prefer to learn about the Program via in-person sales representative visits and / or direct mail information.

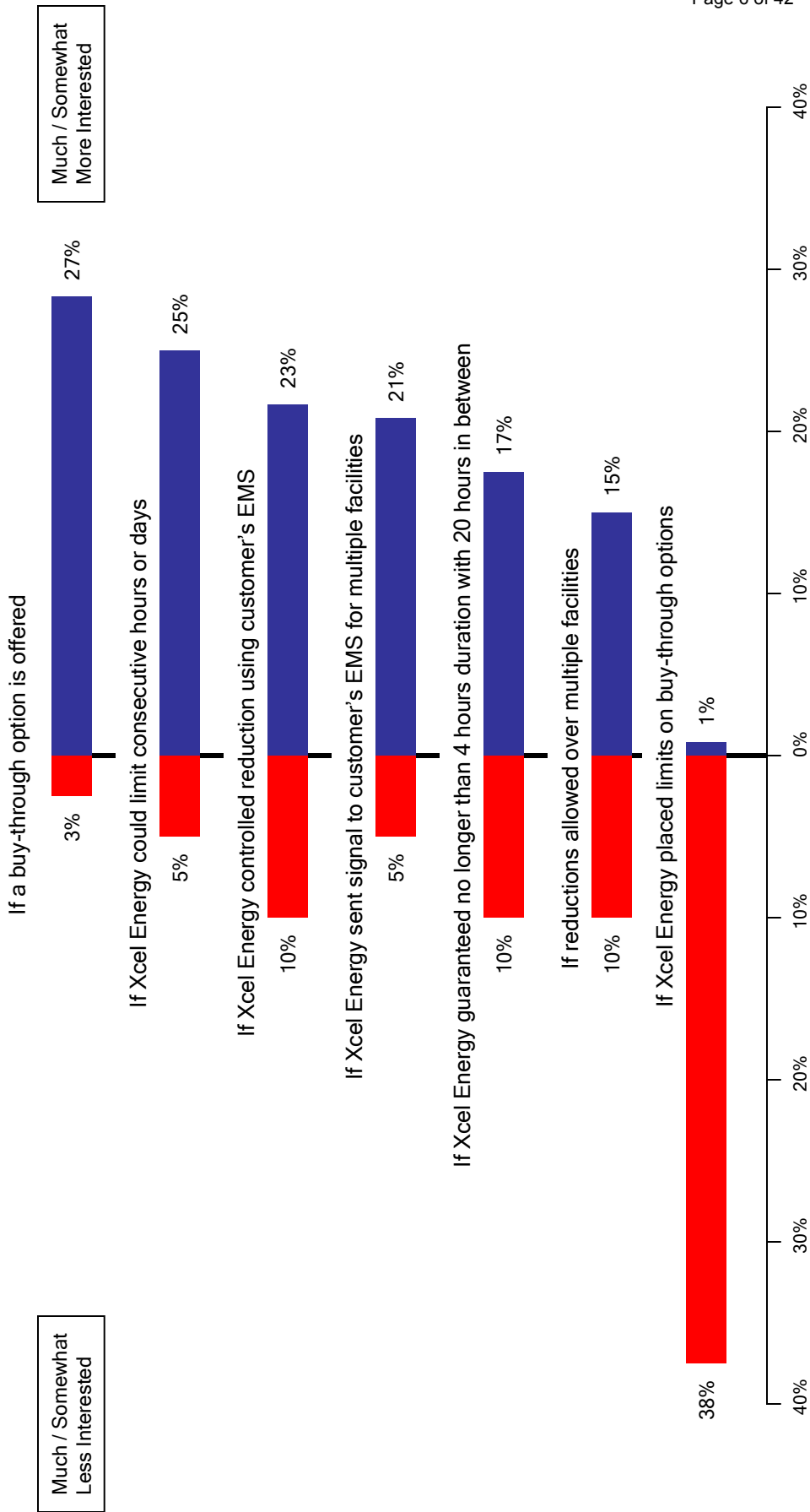
EXECUTIVE SUMMARY

- Specific modifications to the ERSP concept that would enhance businesses' interest levels include offering a buy-through option, limiting the consecutive hours or days of control periods, and management of the reductions through the customer's EMS.



EXECUTIVE SUMMARY

- Discounting the results for over-statement, one in four businesses can be expected to express interest in the ERS program. After applying similar discounts to the various program enhancements based on responses provided by the high-opportunity businesses specifically, incremental interest and disinterest rates are as follows:



IMPLICATIONS AND RECOMMENDATIONS

- Several key findings from this research parallel and support the hypotheses generated by the exploratory focus groups conducted earlier; namely:
 - ✓ A tendency among businesses to perceive power reductions as “outages”, and to react to the ERSP concept in the context of electricity shut downs rather than temporary reductions.
 - ✓ More positive reactions to the concept among EMS users and businesses that incorporate redundancy in their systems through the use of generators.
 - ✓ Strong negative reactions to program components that offer less than 10 minutes of notification prior to a control period.
 - ✓ Positive reactions to the opportunity to “buy through” a control period.
 - ✓ Hesitancy to accept control periods that last longer than four hours.
- As Xcel Energy moves forward with the exploration and development of a possible ERSP plan for Colorado, the following issues and actions should be considered:
 - ✓ Interest levels in the concept should be utilized for developing specific business case scenarios to determine the overall viability of the program.
 - ✓ Potential add-ons and enhancements to the program (such as the buy-through option) should be considered in the context of the resources necessary to implement the change versus the increase in participation likely to be realized.
 - ✓ Any assistance Xcel Energy can provide to customers in terms of reviewing their current power usage and the potential benefits available for their company will likely be positively received.

PROJECT HISTORY

Formed by the merger of Denver-based New Century Energies and Minneapolis-based Northern States Power Co., Xcel Energy is an electricity and natural gas energy company serving the Western and Midwestern states. Xcel offers a comprehensive portfolio of energy-related products and services to 3.3 million electricity customers and 1.8 million natural gas customers. Xcel has regulated operations in 8 Western and Midwestern states and revenue of \$10 billion annually; owns over 240,000 conductor miles of electricity transmission and distribution lines, and more than 33,000 miles of natural gas pipelines; and operates regulated power plants that generate about 15,200 megawatts of electric power.

Xcel Energy is interested in gathering information from large business customers regarding a concept whereby their service could be interrupted temporarily in order to reduce their contribution to system level demand peaks. This would be in return for lower rates overall for the large business customers. The research focused on new parameters and pricing components developed from a similarly-structured program offered in Minnesota.

Preliminary qualitative research has been conducted to understand the general parameters of customers' overall needs and requirements for the services. Xcel Energy then requested assistance with quantitative research to answer the following questions:

- ✓ What proportion of large business customers in the Colorado region would consider participating in the program?
- ✓ What volume of energy reserves would be available to Xcel Energy as a result of offering this program in the Colorado region?

This report provides the key findings of a primary research study conducted by The Praxi Group on behalf of Xcel Energy in support of the questions outlined above.

OBJECTIVES

The primary objective of this research was to capture quantitative feedback from large business customers regarding their interest in and requirements for the new concept.

More specifically, the research addressed the following key objectives for Xcel Energy (not exhaustive):

- What proportion of customers would consider participating in the program being considered by Xcel Energy?
- What would these customers prefer or require in terms of the specific ancillary elements associated with the program, such as notification time frames, total hours of interruption per year, the duration of individual interruptions, recovery time frames, and pricing discounts?

METHODOLOGY

In order to quantify large businesses' needs and requirements for the new concept from Xcel Energy, The Praxi Group conducted a series of quantitative online surveys among 64 Xcel business customers in the state of Colorado.

Respondents qualified for the study based on the following criteria (not exhaustive):

- Are solely or largely responsible for relevant decisions related to the energy supplied to the company; and
- Use 100 Kilowatts or more of energy monthly.

Input from respondents was captured using a two-phase approach to data collection, including an initial telephone survey to recruit respondents to participate in the research and a subsequent online survey to capture their detailed feedback.

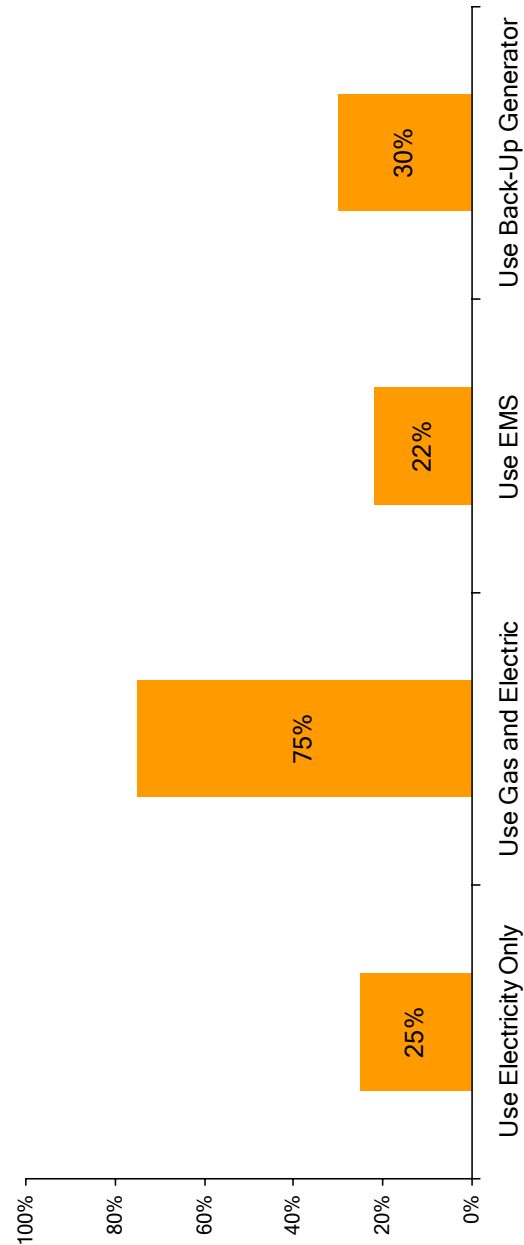
A total of 175 respondents were recruited for the study in order to complete the 64 online surveys (37% response rate). Email addresses for the respondents were captured during the telephone interview and were used to send the customers detailed instructions for accessing the online survey. All respondents who completed the survey were paid a \$25 cash incentive.

Xcel Energy provided the sample lists for the study, including the business name, contact name, and telephone number. The online survey was hosted by a third party vendor secured and managed by The Praxi Group using a password-protected secure survey server. Respondents were contacted using email invitations sent to the respondents recruited via the telephone interviews.

DETAILED FINDINGS

Business Profiles

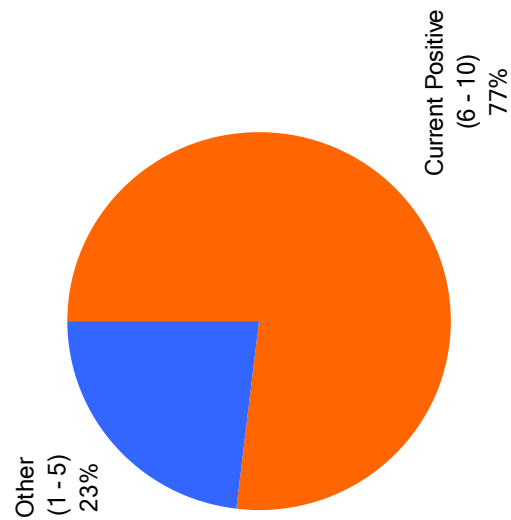
Three in four businesses utilize both natural gas and electric services from Xcel Energy. Just one in five, however, currently use an EMS, while one in three have a back-up generator.



QS2: Does your business receive electric services, natural gas services, or both electric and natural gas services from Xcel Energy?
QS3: Does your company currently utilize any type of Energy Management System or EMS?
QS4: Does your company currently have a back-up generator?
Base: Total respondents (n = 64).

Overall Satisfaction with Xcel Energy

Three in four businesses surveyed are currently satisfied with Xcel Energy, rating the company as “6” or higher on an 11 point scale (0 - 10; 10 = Very Satisfied).



Average = 7.0

11-point scale; 10 = Very Satisfied, 0 = Very Dissatisfied

Q.1: As you think about Xcel Energy, all things considered, overall how satisfied are you with Xcel Energy?
Base: Total respondents (n = 64).

Electric Rate Savings Program – Initial Concept Statement

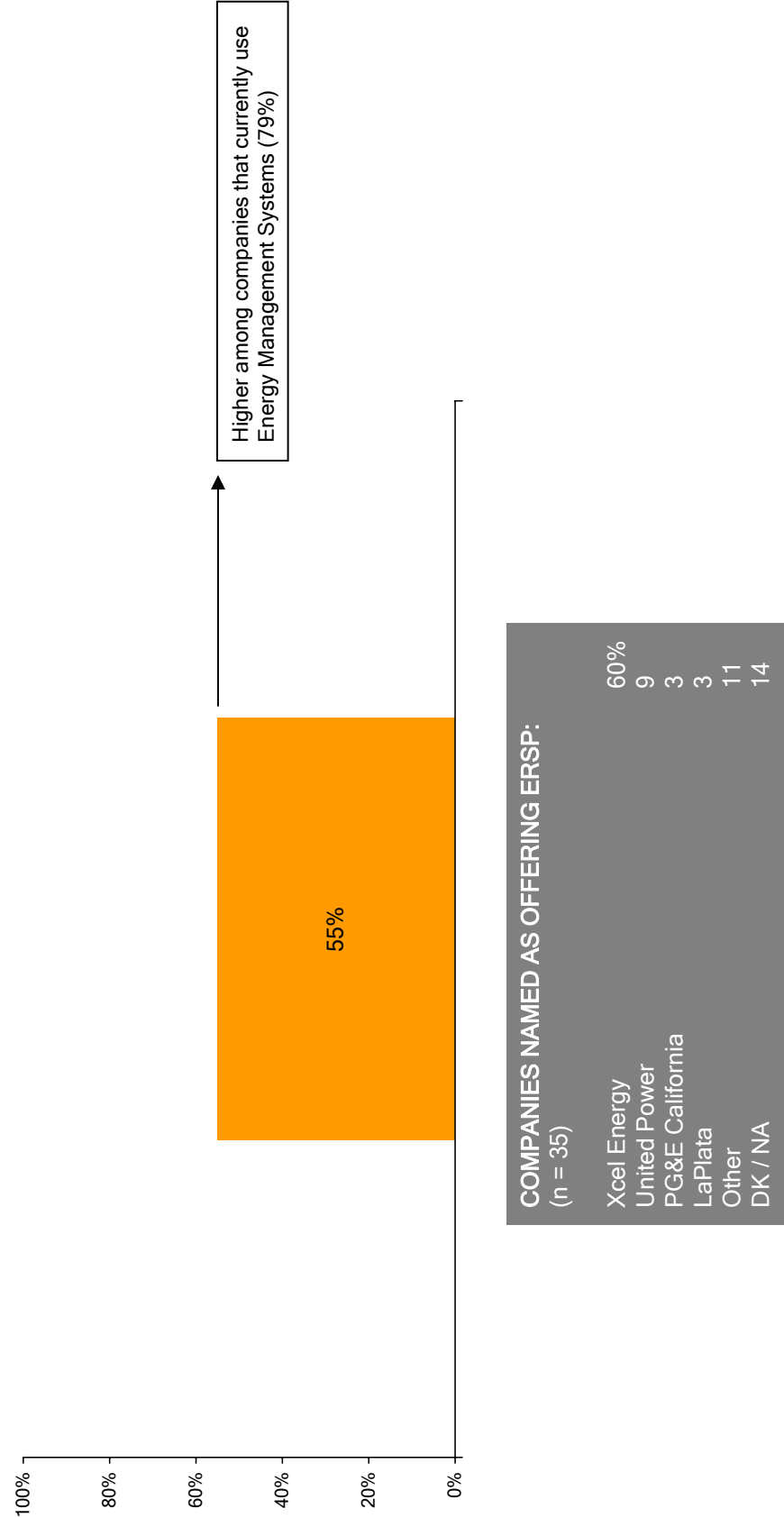
Utility customers tend to use electricity at the same time. This creates energy peaks that require utility companies to build expensive power plants to meet peaks in demand. Some utility companies offer discounts to customers who can control their energy use when requested in order to limit those peaks and reduce the need for additional power plants or expensive energy purchases. All customers can benefit from programs that manage energy peaks more efficiently because the utility avoids building expensive power plants, the costs for which are spread among all customers.

The **Electric Rate Savings Program** is designed to provide savings to customers on their electricity bills. Those who participate in the program will **receive a credit on their demand (\$ / kW) charges year-round** in return for allowing Xcel Energy to request they control their electricity use during times of peak demand and / or high electricity costs.

To qualify, **a customer must be able to reduce (or “control”) at least 100 kilowatts (kW) of demand** at their facilities when Xcel Energy requests. Electricity can be used as usual until Xcel Energy notifies the participant of an upcoming control period. Participants then choose which facilities and loads to reduce – they can even combine loads at different facilities.

Awareness of Previous Electric Rate Savings Programs

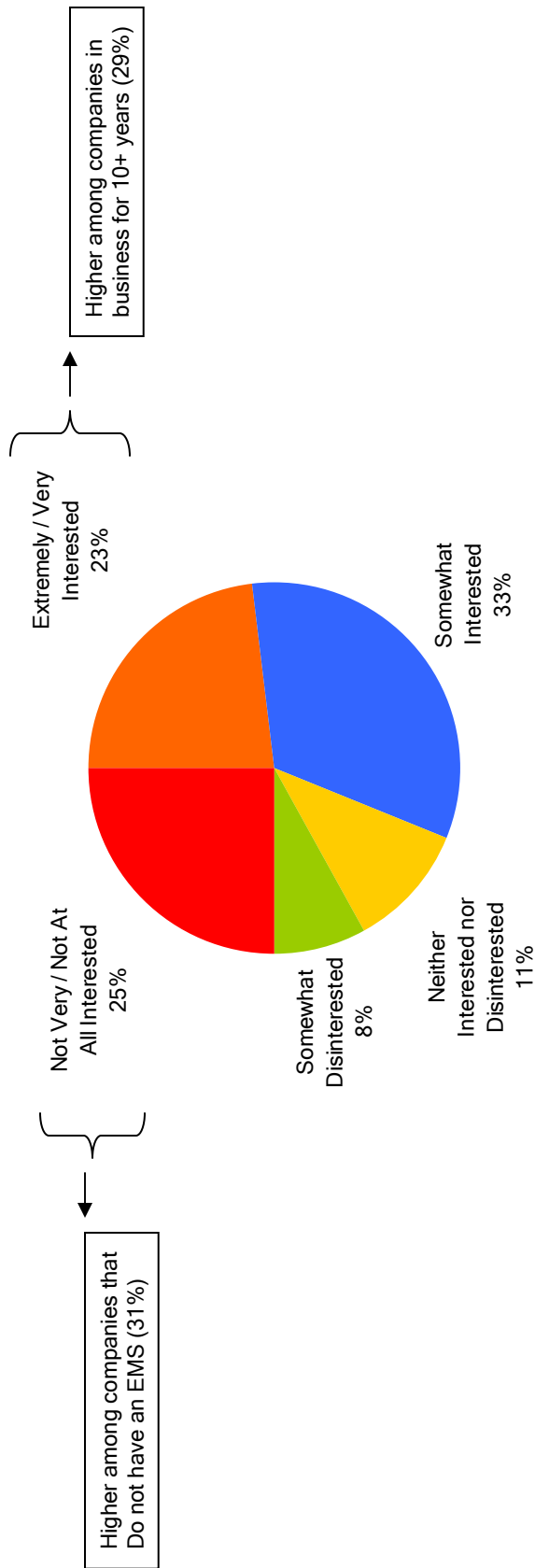
Slightly more than half of businesses have heard of similar Energy Rate Savings Programs in the past, most of whom associate the programs with Xcel Energy.



Q.2: Have you ever heard of an Electric Rate Savings Program like this in the past?
Q.3: What company offered the Electric Rate Savings Program?
Base: Total respondents (n = 64).

Overall Interest in Electric Rate Savings Program

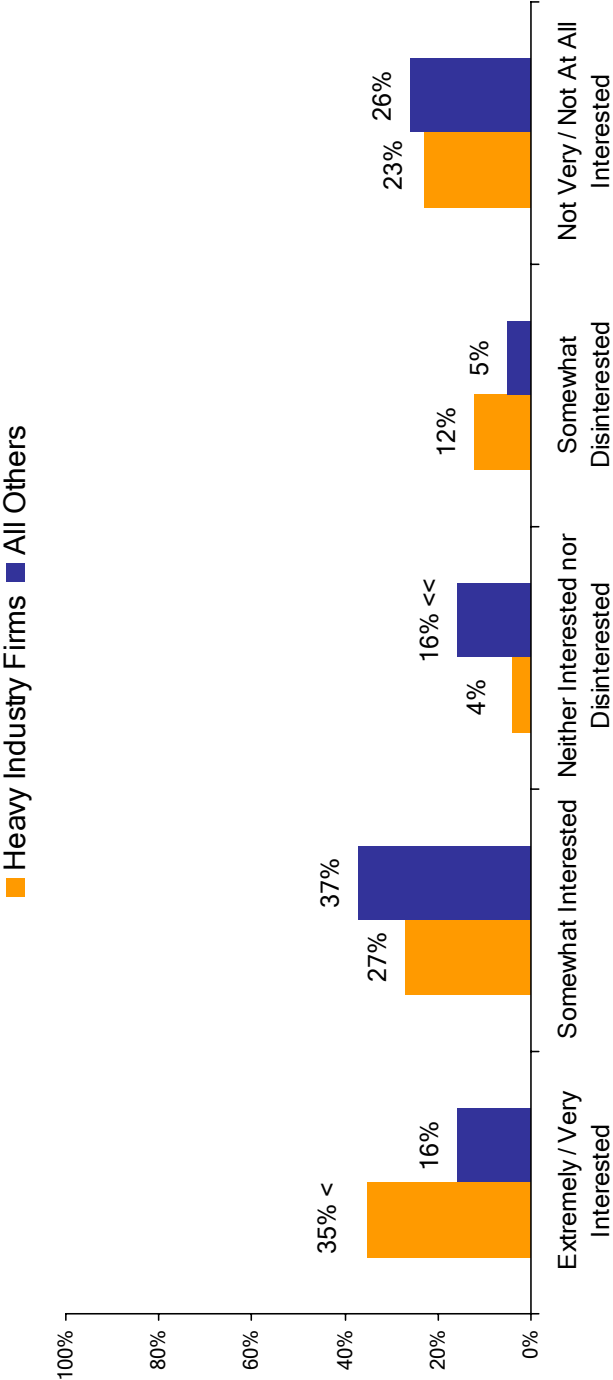
More than half of businesses are at least “Somewhat Interested” in the Energy Rate Savings Program from Xcel Energy; one in four (23%) are “Extremely” or “Very Interested.”



Q.4: Based on the description of the Electric Rate Savings Program you read earlier, how interested would your company be to learn more about this program and the potential benefits available for a company like yours?
Base: Total respondents (n = 64)

Overall Interest in Electric Rate Savings Program

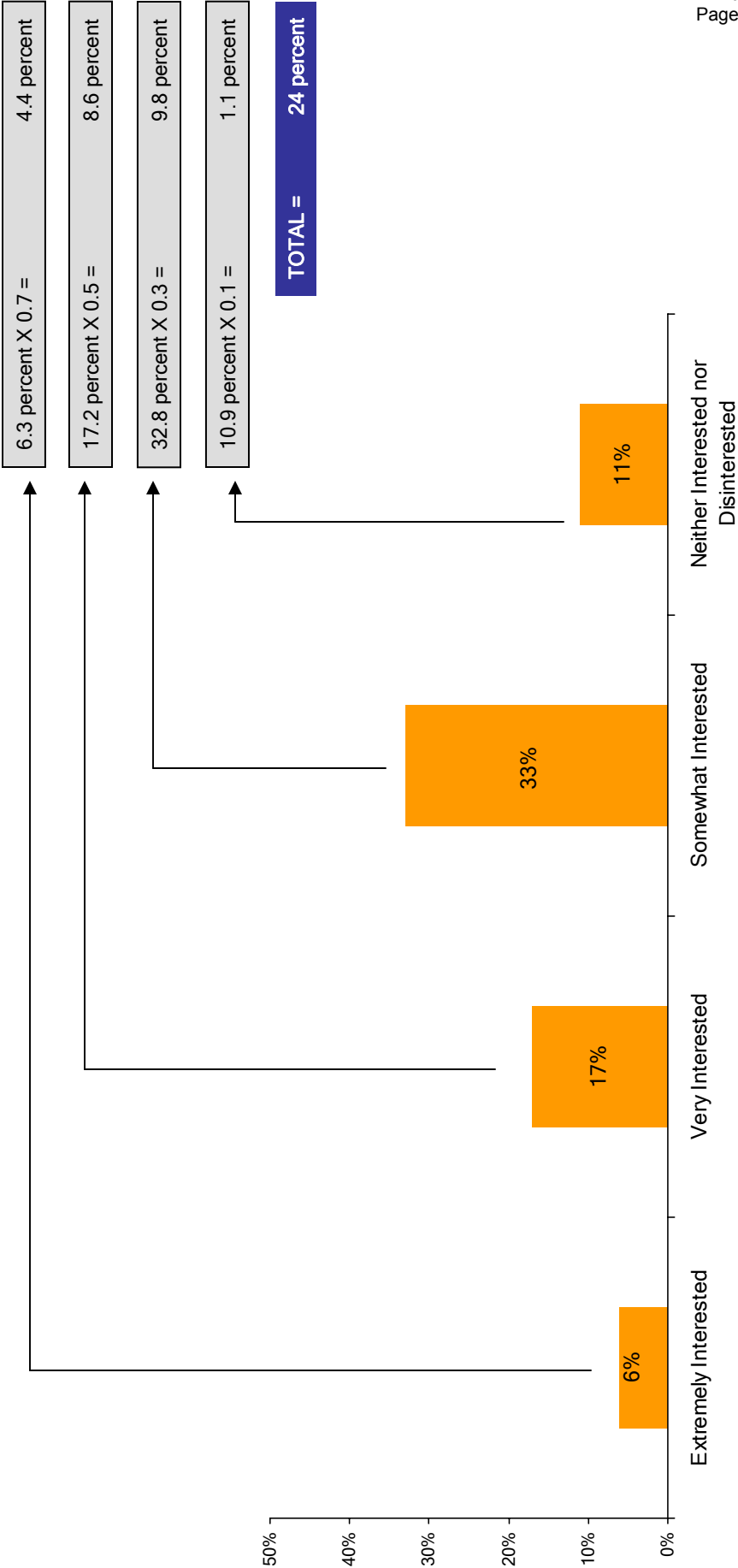
More than half of businesses are at least “Somewhat Interested” in the Energy Rate Savings Program from Xcel Energy; one in four (23%) are “Extremely” or “Very Interested.”



Q.4: Based on the description of the Electric Rate Savings Program you read earlier, how interested would your company be to learn more about this program and the potential benefits available for a company like yours?
Base: Total respondents (n = 64)
< - Represents statistically significant difference at 95% confidence level. << - Represents statistically significant difference at 90% confidence level.

Discounted Interest in Electric Rate Savings Program

Using standardized research discounting factors, results from the interest measure suggest that approximately one in four businesses - or 24 percent - could be expected to express serious interest in the Electric Rate Savings Program.



Q.4: Based on the description of the Electric Rate Savings Program you read earlier, how interested would your company be to learn more about this program and the potential benefits available for a company like yours?
Base: Total respondents (n = 64)

Reasons for Interest / Disinterest in Electric Rate Savings Program

Businesses interested in the ERSP concept cite the potential to save energy costs, while those not interested in the program mention an inability to reduce their power usage at any given time.

Extremely / Very / Somewhat Interested (n = 15 *)	Somewhat Interested or Disinterested (n = 33)	Not Very / Not At All Interested (n = 16 *)
Cost savings	Reductions not possible at any time	Reductions not possible at any time
Energy savings	Cost savings	We don't control when peak times occur
We have generators that could make this work	Don't have enough info / would like more	Manufacturing needs / demand dictates power use
Manufacturing needs / demand dictates power use	We don't control when peak times occur	Cost savings
We don't control when peak times occur	We use a significant amount of electricity	Other
We use a significant amount of electricity	Manufacturing needs / demand dictates power use	
Other	Energy savings	
	Other	

Q.5: Why do you say that?
Base: Total respondents. * - Caution: Small sample size.

Electric Rate Savings Program - Reduction / Price Savings Statement

Savings to customers can be maximized:

- 1) when customers can reduce more demand,
- 2) when demand is reduced more frequently, and
- 3) when shorter notice is required to signal demand reduction.

The charts below illustrate four different savings levels that are available in return for controlling a customer's electricity demand, listed as Options A, B, C, and D. The savings levels vary based on 1) the amount of notice provided by Xcel Energy prior to a control period being implemented, and 2) the maximum number of hours for control in a year.

For example, a customer who chooses Option D would agree to control their electric demand up to 40 hours per year, and would do so within one hour of Xcel Energy's request to control. In return, this customer's demand charge would be reduced on average to \$11.52 per kW / month year-round. On average, customers currently pay \$13.55 per kW / month in demand charges year-round. **Even greater demand charge savings (up to 50% lower than the standard demand charge) are available if customers agree to reduce their electricity demand for more hours or with shorter notice.**

During some control periods, customers may have the option to decline Xcel Energy's control request and pay a predetermined market level energy (\$/kWh) price compared to standard rates. There are times, however, when control periods are considered mandatory. During mandatory control periods (on average about 8 hours in a year), with Options A or B, Xcel Energy would require remote and automatic control over the load reduction. For longer periods of notification, such as Options C or D, Xcel Energy would not have control over the amount of electricity reduced at your facility. Rather, it would be up to the customer to take steps to reduce their load during control periods.

Electric Rate Savings Program - Reduction / Price Savings Example Charts

Electric Rate Savings Program

NOTE: Standard Demand Charge = \$13.55 / kW

Maximum Hours Controlled Annually

80 hours

40 hours

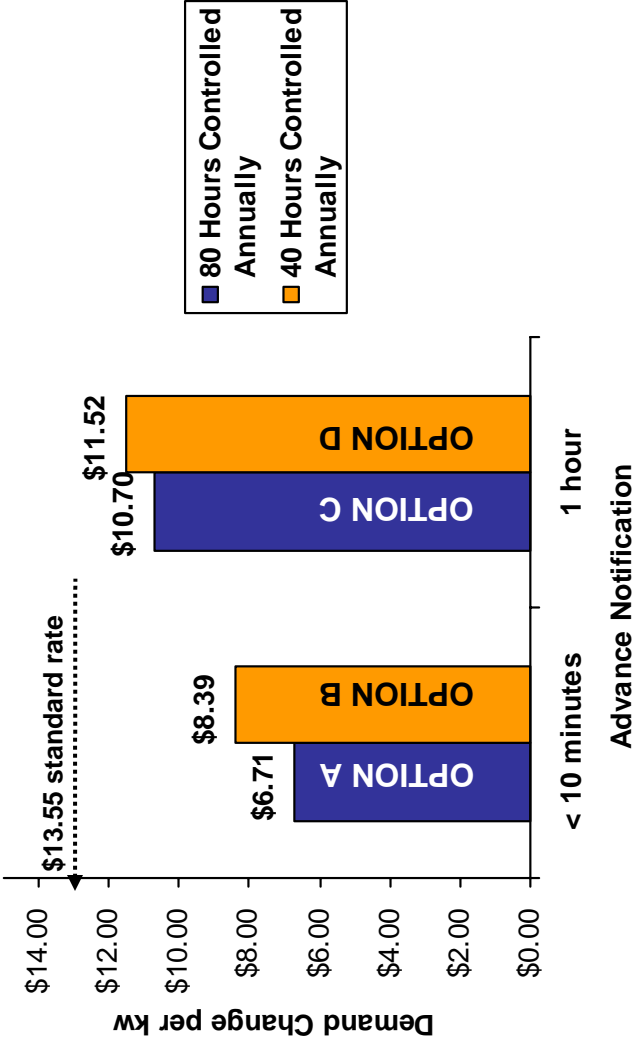
Advanced Notice Time

Less than 10 minutes

1 hour

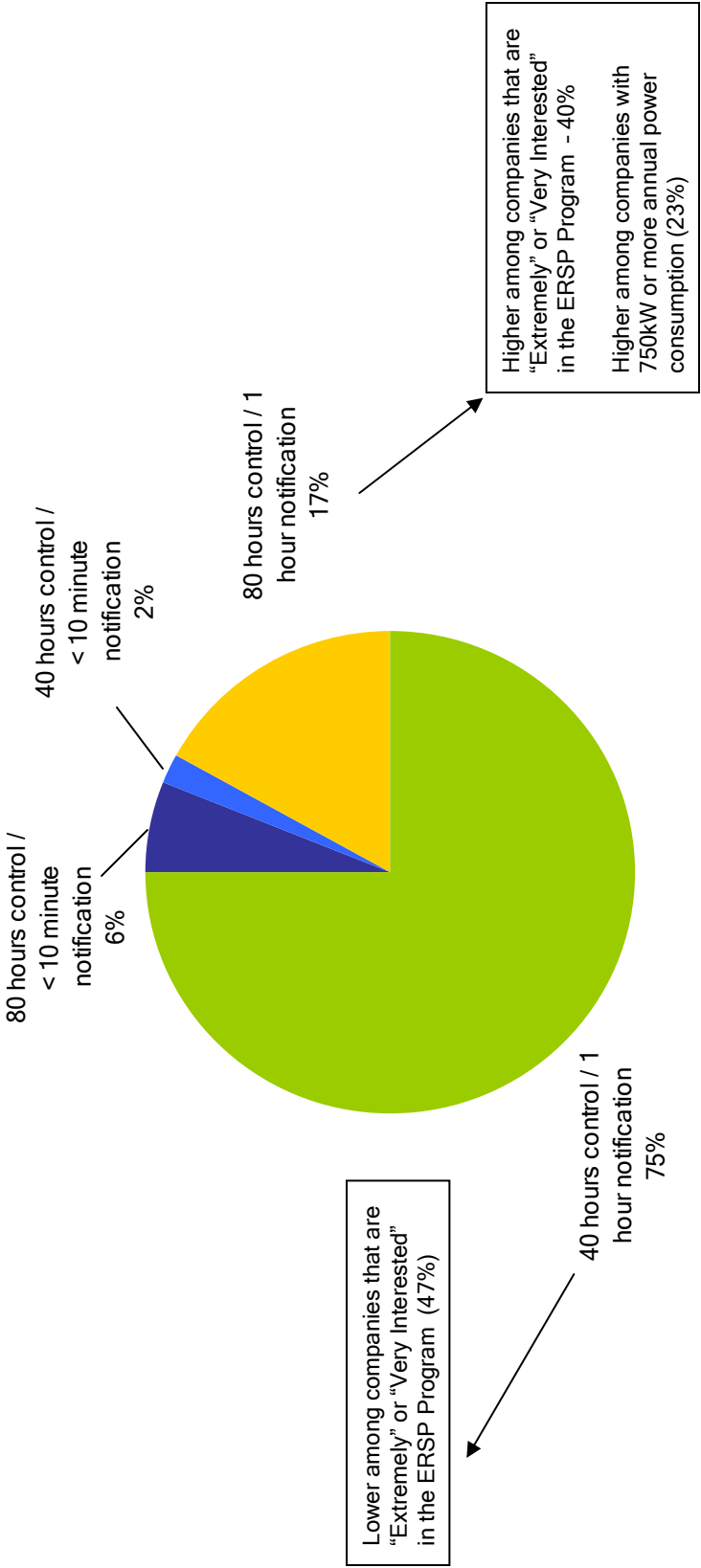
OPTION A: Adjusted cost = \$6.71 / kW Savings = 50%	OPTION B: Adjusted cost = \$8.39 / kW Savings = 38%
OPTION C: Adjusted cost = \$10.70 / kW Savings = 21%	OPTION D: Adjusted cost = \$11.52 / kW Savings = 15%

Electric Rate Savings Program - Reduction / Price Savings Example Charts



Preferred Option for Controllable Hours and Notification

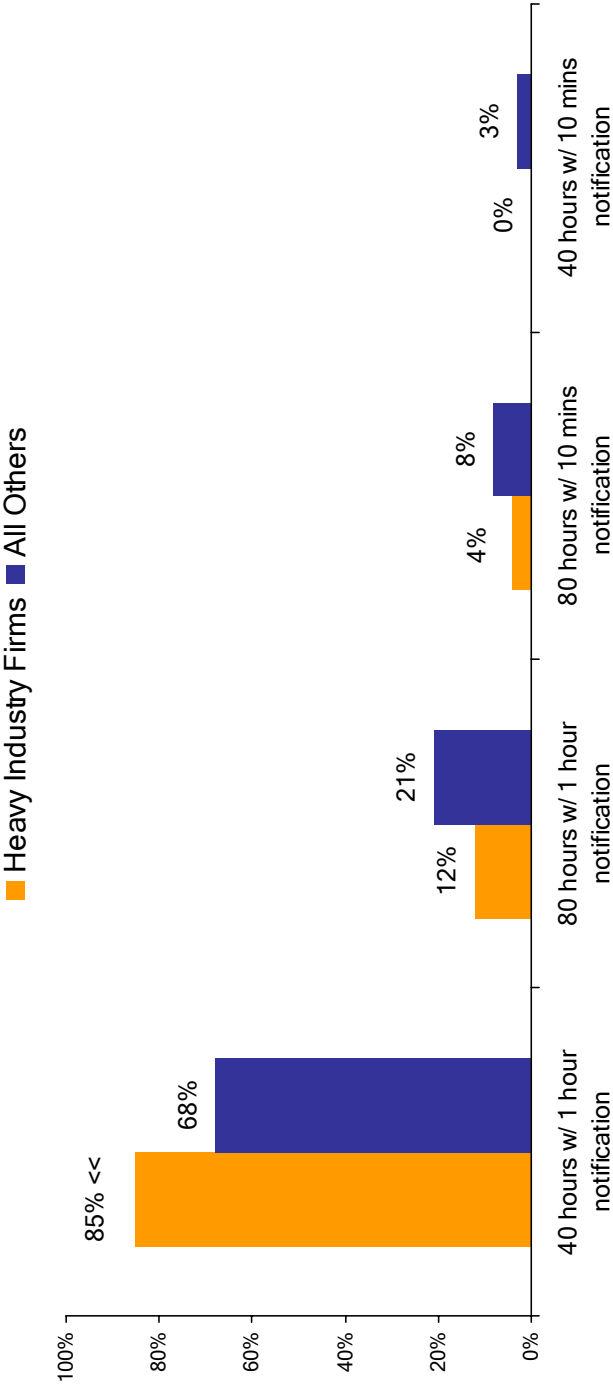
Three in four businesses would be most interested in the Program option offering 40 hours of annual control with 1 hour of notification. Overall, the 10-minute notification options appeal to fewer than one in ten businesses. Businesses that are more interested in the Program in general are more likely to prefer the 80 hour / 1 hour notification option, as are high-volume power use companies.



Q.6: If your company was considering participating in the Electric Rate Savings Program, which of the following Notification / Controllable Hours options would you be most likely to consider?
Base: Total respondents (n = 64).

Preferred Option for Controllable Hours and Notification

Businesses in Heavy Industry categories are significantly more likely than others to prefer the option which includes 40 hours of control with 1 hour of notification.

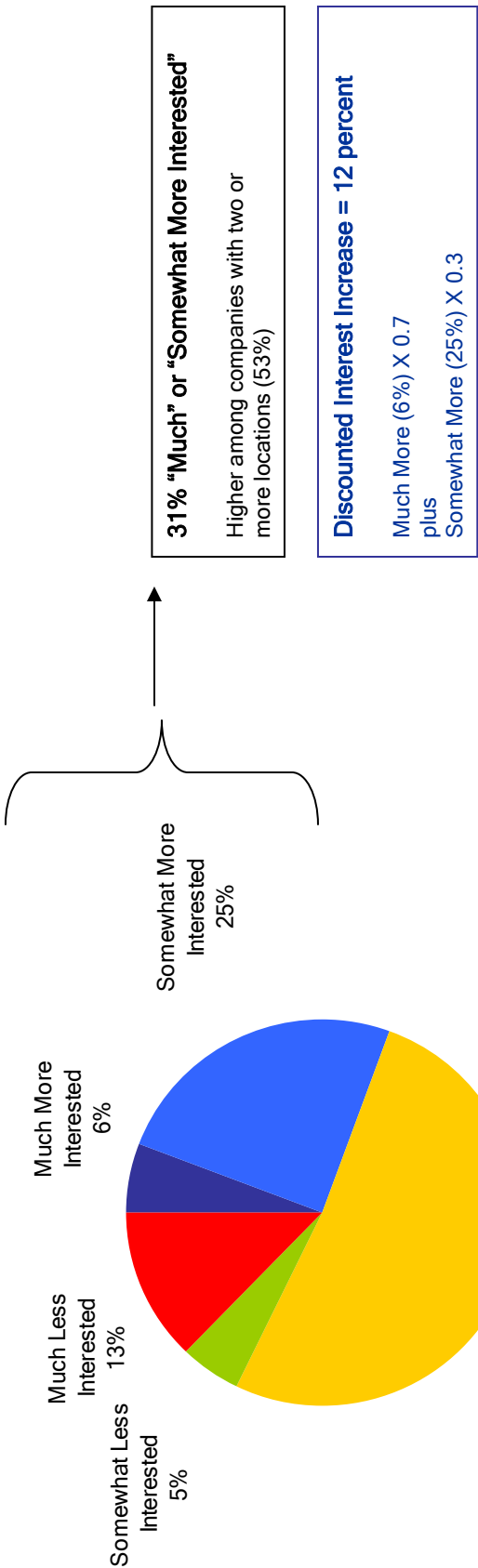


Q.6: If your company was considering participating in the Electric Rate Savings Program, which of the following Notification / Controllable Hours options would you be most likely to consider?
Base: Total respondents (n = 64). << - Represents statistically significant difference at 90% confidence level.

Impact on Interest if Control Allowed at Multiple Facilities

Nearly one in three businesses would be at least “Somewhat More Interested” in the Program if they were able to reduce power usage at multiple facilities in order to reach their demand reduction quota.

Discounted Interest Decrease = 11 percent
Much Less (13%) X 0.7
plus
Somewhat Less (5%) X 0.3

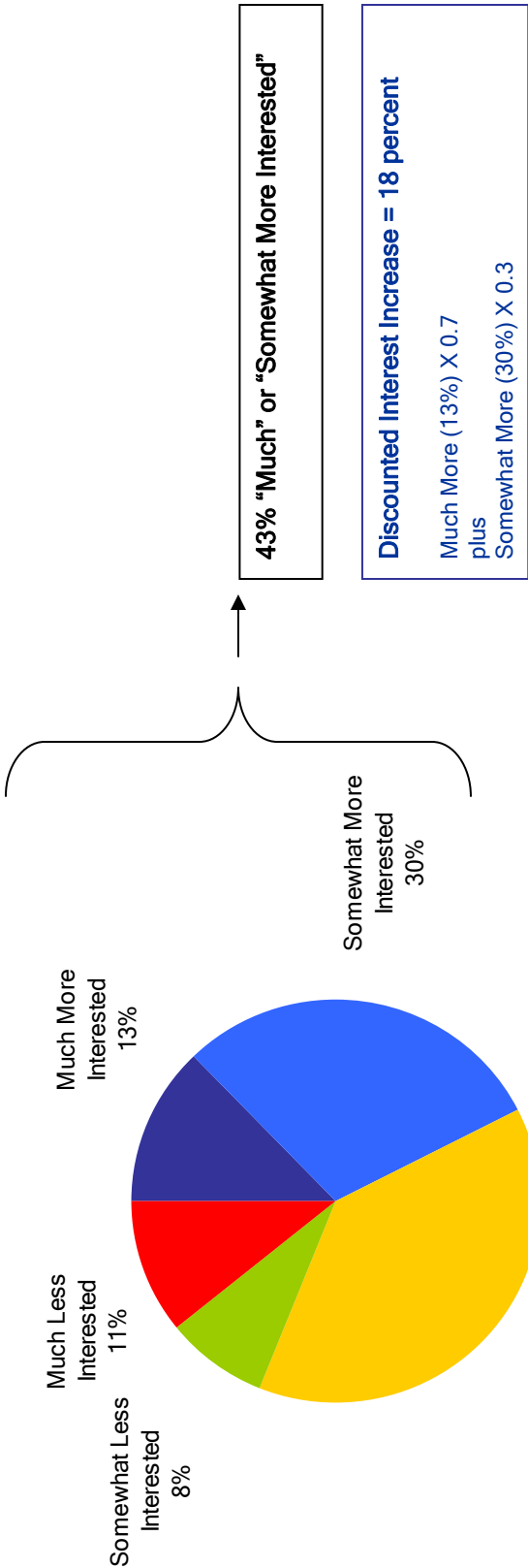


Q.7: As noted earlier, a company must be able to reduce / control at least 100 kilowatts (kW) of demand at their facilities when Xcel Energy requests. If your company were able to reduce demand over multiple facilities to achieve this level of control - rather than at just a single facility - how would this impact your interest in this program?
Base: Total respondents (n = 64).

Impact on Interest in < 10-minute Notification if Services Controlled by Xcel Energy Using Customer's EMS

Nearly half of businesses would be at least "Somewhat More Interested" in the ERS if Xcel Energy was able to control their demand using the customer's own EMS.

Discounted Interest Decrease = 10 percent
Much Less (11%) X 0.7
plus
Somewhat Less (8%) X 0.3



Q.8: If Xcel Energy were able to automatically control your electric services by utilizing your own Energy Management System (EMS) using settings you have predetermined, would this change your level of interest in Options A or B (10-minute notification; 38% to 50% cost savings)?
Base: Total respondents (n = 64).

Reasons for Impressions of Xcel Energy Control Over Customer EMS for 10-minute Notification

Most businesses that would not be positively impacted by Xcel Energy’s management of their internal EMS express an inability to relinquish control of the system to that degree.

	Much / Somewhat More Interested (n = 27 *)
Interested in cost / energy savings	7 respondents
Need more information	5
System has operational control / giving control up is not an option	4
Can't decrease / reduce power use due to nature of business	2
Cost savings / economics	2
Concerned about 10-minute notification	2
Other	8
DK / NA	2

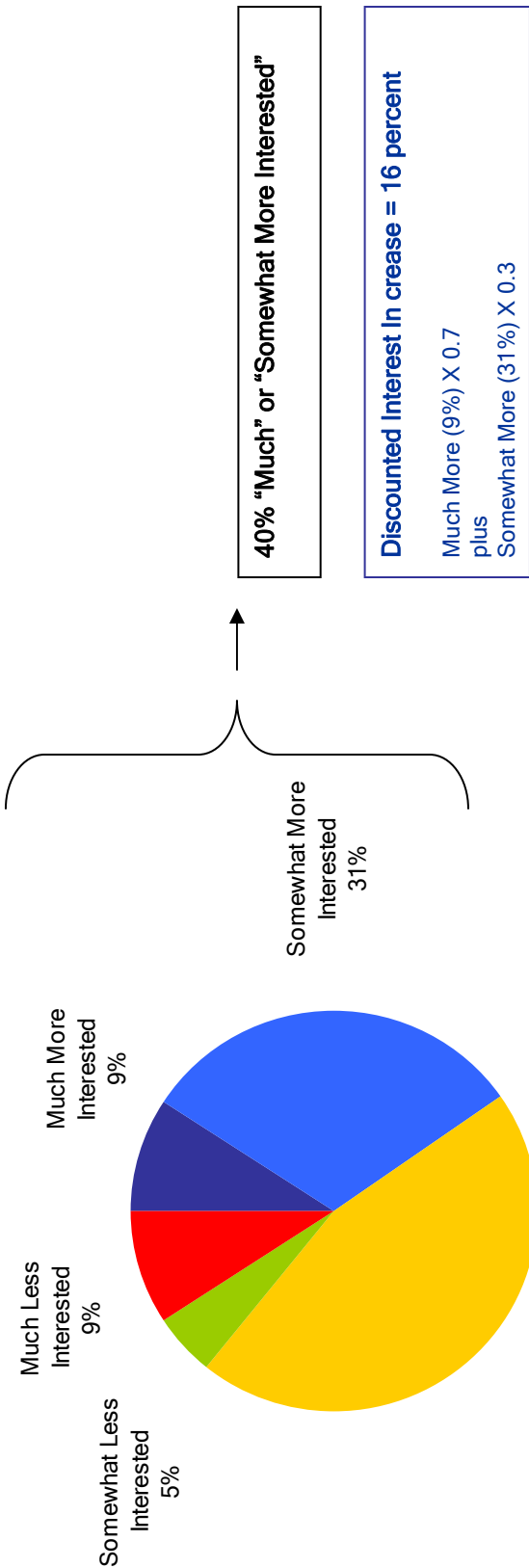
	Much / Somewhat Less Interested (n = 12 *)
Can't decrease / reduce power use due to nature of business	6 respondents
System has operational control / giving control up is not an option	3
Need more information	1
Other	2

Q.9: Why do you say that?
Base: Total respondents. * - Caution: Small sample size.

Impact on Interest in 10-minute Notification if Xcel Energy Could Signal Customer EMS at Multiple Facilities

Four in ten businesses would be at least “Somewhat More Interested” in the ERSP if Xcel Energy were able to signal their EMS at multiple facilities prior to a load reduction.

Discounted Interest Decrease = 8 percent
Much Less (9%) X 0.7
plus
Somewhat Less (5%) X 0.3



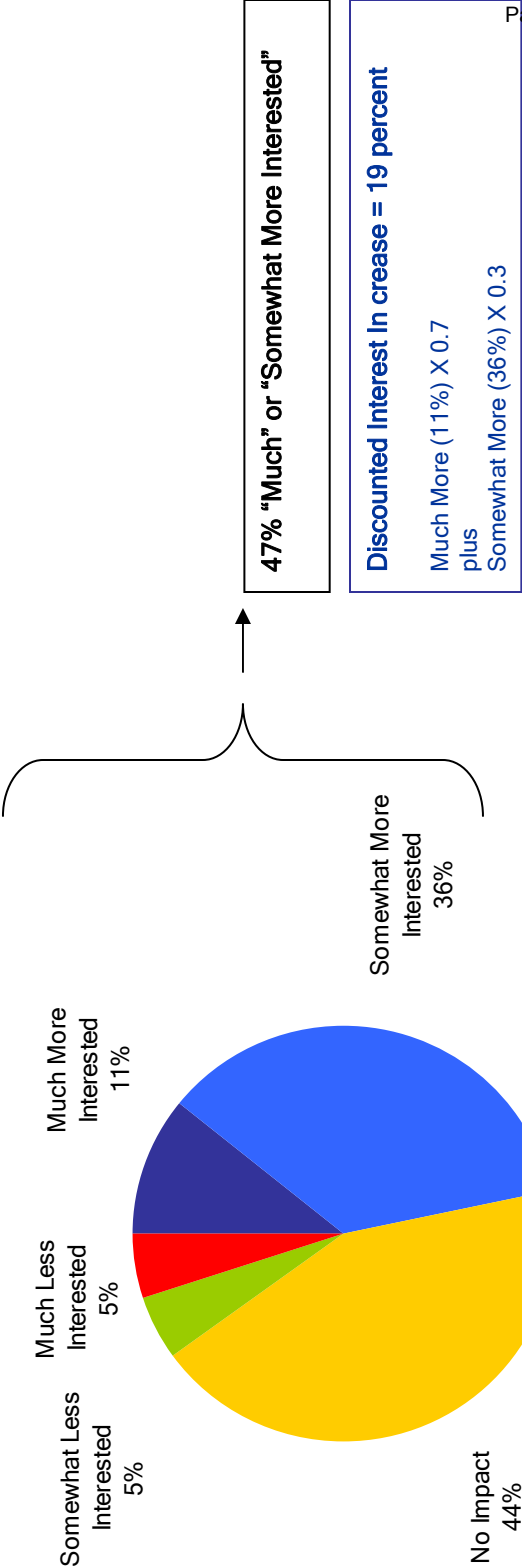
Q.10: If Xcel Energy were able to send a signal to your Energy Management System (EMS) that allowed you to reduce load to a predetermined level at multiple buildings / facilities, how would this impact your level of interest in Options A or B (10-minute notification; 38% to 50% cost savings)?
Base: Total respondents (n = 64).

Impact on Interest if Xcel Energy Could Limit Consecutive Days / Hours of Control Periods

Nearly half of businesses would be at least “Somewhat More Interested” in the Program if Xcel Energy could limit the consecutive number of hours or days the customer is required to control their power demand; one in ten (11%) would be “Much More Interested.”

Currently, there is no limit to the number of consecutive hours or days your service could be interrupted, aside from the annual maximum hours mentioned earlier.

Discounted Interest Decrease = 5 percent
Much Less (5%) X 0.7
plus
Somewhat Less (5%) X 0.3

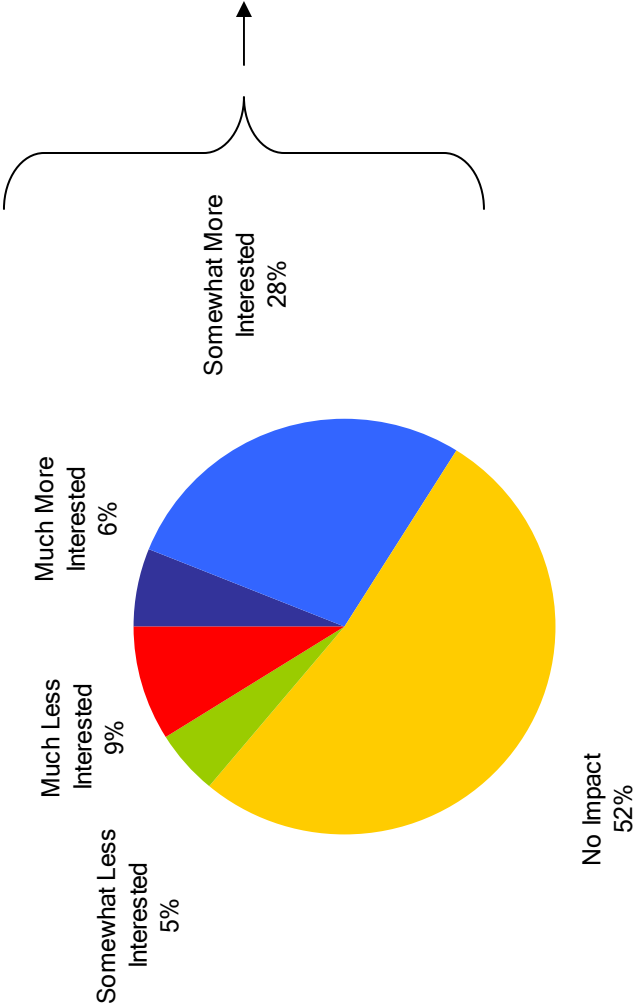


Q.11: If Xcel Energy could limit the consecutive number of hours or days of control periods, how would this impact your level of interest in the program?
Base: Total respondents (n = 64).

Impact on Interest if Xcel Energy Could Limit Control Periods to 4 hours in Duration / 20 hours Between

Just one in three businesses would be more interested in the program if Xcel Energy limited interruptions to 4 hours in duration, with at least 20 hours in between.

Discounted Interest Decrease = 8 percent
Much Less (9%) X 0.7
plus
Somewhat Less (5%) X 0.3



Q.12: If Xcel Energy guaranteed that control periods would last no longer than 4 hours, with at least 20 hours in between, how would this impact your level of interest in the program?
Base: Total respondents (n = 64).

Reasons for Impressions of Xcel Energy Limits of Control Duration

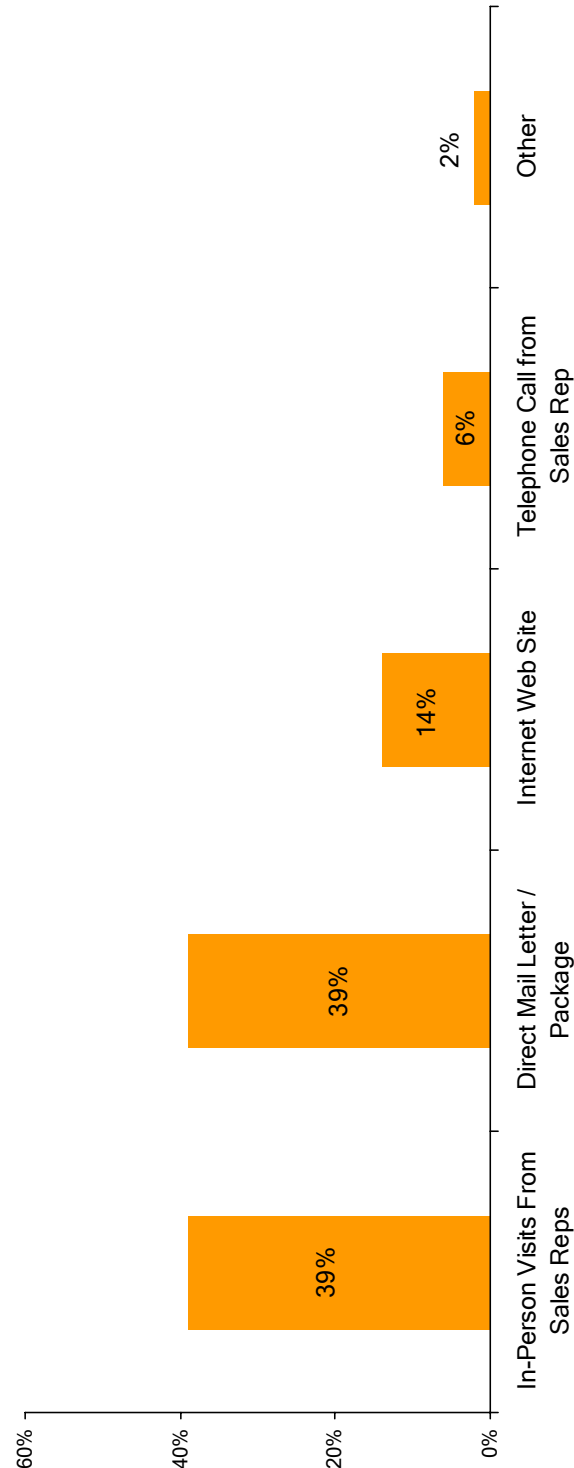
Businesses' reactions to the proposition of 4 hour duration / 20 hour spacing for the ERSF reflect concerns with that structure for the Program.

	Much / Somewhat More Interested (n = 22 *)	Much / Somewhat Less Interested (n = 9 *)
Would allow for better production planning	5 respondents	
Can't allow disruption of service	4	3
Need more notice / time to plan for outage	3	2
Can't be without power that long	3	2
Depends on timing of reduction	3	2
Need more information	3	2
Depends on tenants' / facility needs	2	1
Other	2	

Q.13: Why do you say that?
Base: Total respondents. * - Caution: Small sample size.

Preferred Sources of Information for Electric Rate Savings Program

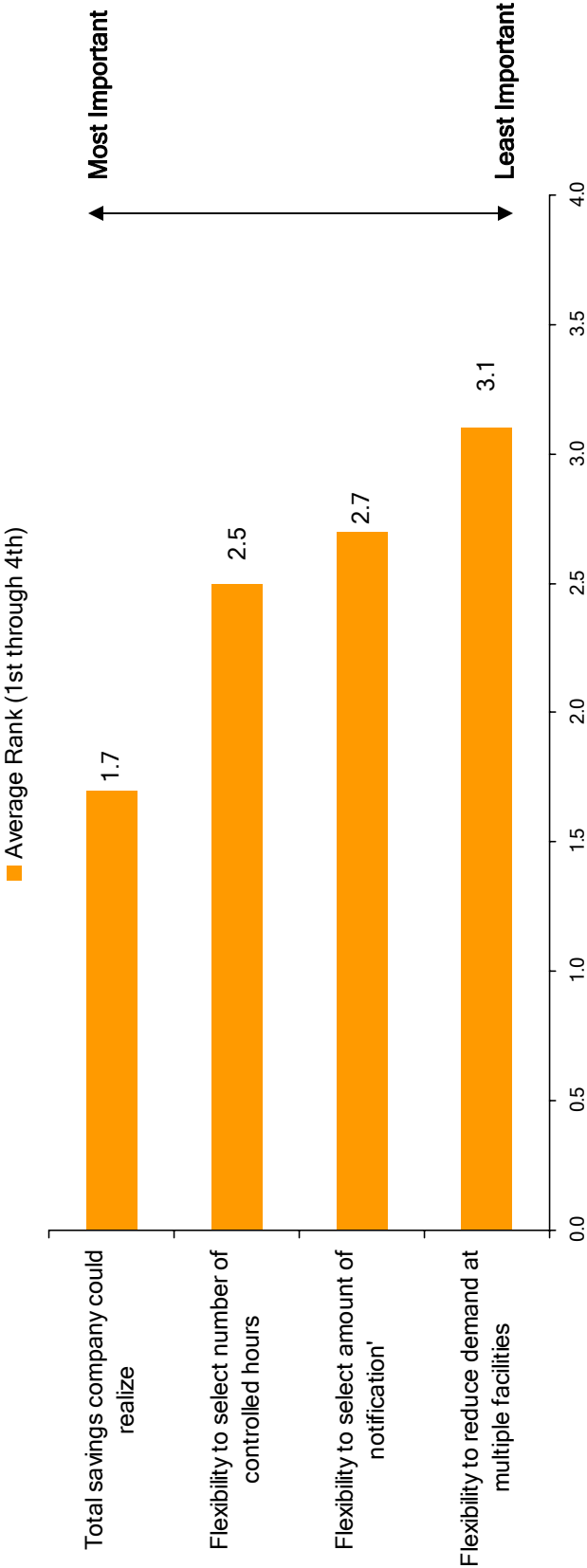
If Xcel Energy offered the ERSP, most businesses prefer to learn about the Program via in-person sales representative visits and / or direct mail information.



Q.14: If Xcel Energy were to introduce this program in Colorado, how would you prefer to learn about the Program?
Base: Total respondents (n = 64).

Ranked Important of Program Benefits

Among the potential benefits of the ERSP, businesses feel the ability to save on the costs of their power is the most important.



Q.15: If your company was considering participating in this Program, which of the following potential benefits would be most important to you? Please rank order the items from 1 to 4, where 1 is the most important, 2 is the 2nd most important, and so on.
Base: Total respondents (n = 64).

Other Potential Benefits of ERSP

Some businesses feel an analysis of their overall power consumption would also be an important benefit of the ERSP.

	Total Response (n = 64)
Analysis / review of our power usage	11%
Cost / savings (non-specific)	11
Conserving energy	6
Better control over production setbacks	5
Flexibility (non-specific)	5
Impact on tenants / residents	3
Cannot cut back on usage	3
Other	13
DK / NA	43

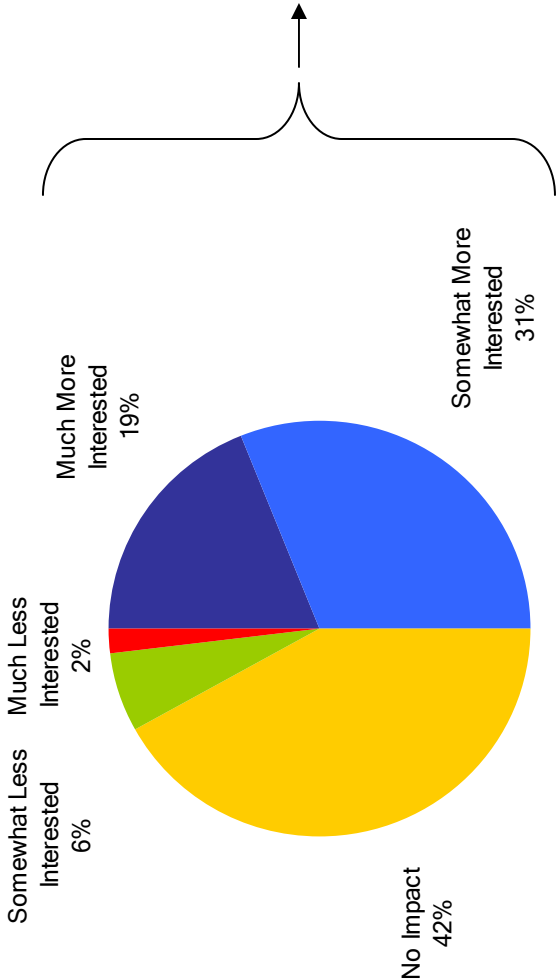
Q.15: What other benefits might be important to you?
Base: Total respondents.

Impact on Interest if Xcel Energy Offered Buy Through

Half of businesses would be at least “Somewhat More Interested” in the ERSF if Xcel Energy offered a buy-through option; one in five (19%) would be “Much More Interested.”

When most control periods are announced by Xcel Energy, Electric Rate Savings Program customers would have an option to decline the reduction in their power demand and “buy through” the control period at a predetermined market price level.

Discounted Interest Decrease = 3 percent
Much Less (2%) X 0.7
plus
Somewhat Less (6%) X 0.3



50% “Much” or “Somewhat More Interested”

Discounted Interest In crease = 23 percent
Much More (19%) X 0.7
plus
Somewhat More (31%) X 0.3

Q.16: If Xcel Energy offered this “buy through” option with the Program, how would this impact your level of interest in the Program?
Base: Total respondents (n = 64).

Reasons for Impressions of Program if Xcel Energy Offered Buy Through

Among businesses interested in the buy-through option, the value of the offer lies in their ability to avoid power reductions during peak production times.

	Much / Somewhat More Interested (n = 32)
Ability to opt out if needed	34%
Ability to avoid critical interruptions / lost production	28
Depends on cost / details of buy-through	12
Better meet our / tenants' needs	9
Good to have options / flexibility	6
Hard to control our energy consumption	3
Other	6

	Much / Somewhat Less Interested (n = 5 *)
Complicated billing / paperwork	2 respondents
Depends on cost of buy-through	1
Hard to control our energy consumption	1
Other	2

Q.17: Why do you say that?
Base: Total respondents. * - Caution: Small sample size.

Conditions Under Which Customers Would Most Likely “Buy Through”

Scenarios where businesses would be most likely to opt for the buy-through option include heavy production periods and peak demand times.

	Total Response (n = 64)
High demand / heavy production times	38%
During peak hours / seasons	20
Cannot accept interruptions ever	13
Depends on operations / scheduling	9
When we need to control temperature of facility	6
When we didn't have enough notice prior to interruption	3
Other	8
NA / DK	14

Q.18: Under what kinds of conditions would your company be most likely to decline the power reduction and select the “buy through” option?
Base: Total respondents (n = 64).

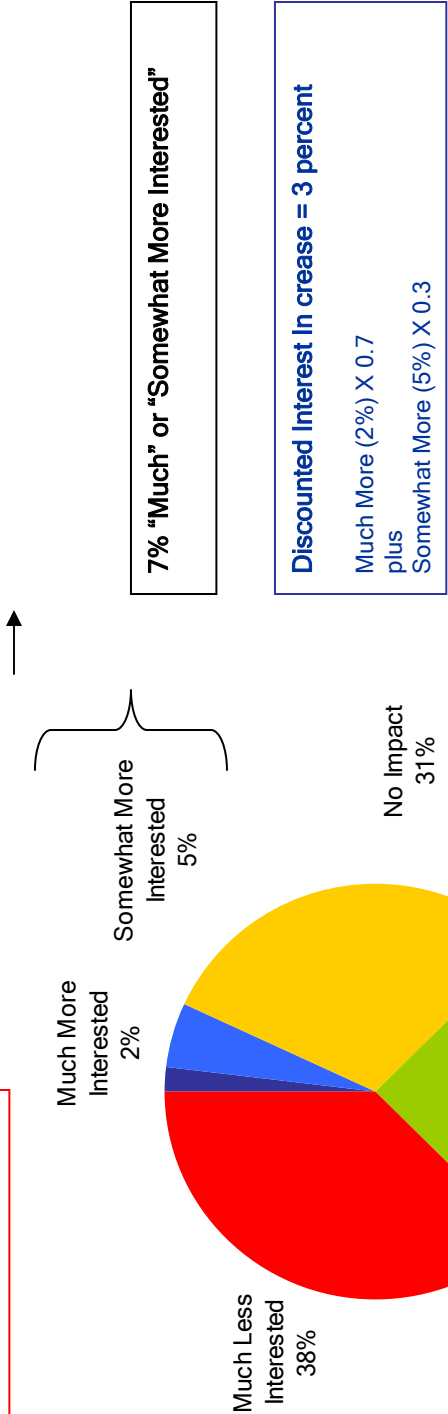
Electric Rate Savings Program - Mandatory Control Period Statement

On an infrequent basis, however (on average about 8 hours total in a year), **some control periods do not have a “buy through” option.** These are considered mandatory control periods due to the impact they have on the overall system capacity at critical times. Customers who are not able to reduce load in a mandatory control period would incur a surcharge of 50% of their annual credit rate times the kW of service that is used above their agreed-upon demand level. In other words, their inability to respond to a mandatory control period could result in a reduction (by half) of the annual demand credit provided for participating in the program.

Impact on Interest if Xcel Energy Implemented Limits to the Buy-Through Option

Very few businesses would be positively impacted by limits imposed on the buy-through option for the ERSP.

Discounted Interest Decrease = 34 percent
Much Less (38%) X 0.7
plus
Somewhat Less (25%) X 0.3



Q.19: How would the limits to the buy-through option (the surcharge for not reducing load in a mandatory control period) affect your overall interest in the Program?
Base: Total respondents (n = 64).

Other Comments / Questions / Suggestions

Similar to earlier comments, several respondents request additional information related to the ERSP in order to fully evaluate its appropriateness for their business.

	Total Response (n = 64)
More information would be helpful to evaluate program	17%
Do not see benefit / viability for our business	10
Need to offer better rates / incentives / savings	9
Production needs / critical periods can outweigh savings	6
Limited flexibility / limited opportunities to reduce demand	5
I like the program / it sounds beneficial	3
Not suited for health services businesses	3
Back-up generators would help with the program	3
Other	14
DK / NA	35

Q.20: What other comments, questions, or suggestions do you have for Xcel Energy as they consider the development of this Electric Rate Savings Program?
Base: Total respondents (n = 64).

RESPONDENT CHARACTERISTICS

	Total Sample (n = 64)
XCEL ENERGY SERVICES USED	
Electricity only	25%
Electricity and Gas	75
USE OF ENERGY MANAGEMENT SYSTEM	
Yes	22%
No	78
USE OF BACK-UP GENERATOR	
Yes	30%
No	70
NUMBER OF LOCATIONS	
One	45%
Two or More	53
DK / NA	2
YEARS IN BUSINESS	
Less than one year	--%
One year but less than three years	3
Three years but less than five years	3
Five years but less than 10 years	17
Ten years or more	77

	Total Sample (n = 64)
MAXIMUM MONTHLY DEMAND - ALL FACILITIES	
100 kW - 150 kW	23%
151 kW - 200 kW	25
200 kW - 300 kW	16
300 kW - 600 kW	23
600 kW or more	13
TITLE	
Facility manager / lead director	16%
General / plant manager	13
Owner / president	11
Director / supervisor / officer	8
Maintenance director / manager	8
Controller	6
Office manager	6
Other	32
NUMBER OF EMPLOYEES	
Less than 25	23%
26 to 50	16
51 to 100	20
101 to 500	30
501 or more	11

APPENDICES

RECRUITMENT SCREENER

THE PRAXI GROUP, INC.
Praxi Group, Inc.
10000 West 10th Avenue, Suite 100
Denver, CO 80202
Phone: (303) 750-1000
Fax: (303) 750-1001
www.praxi.com

NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
PHONE _____
E-MAIL _____

RECRUITMENT SCREENING
PLEASE PRINT OR TYPE CLEARLY.
1. DO YOU HAVE A HIGH SCHOOL DIPLOMA OR GED?
2. DO YOU HAVE A COLLEGE DEGREE?
3. DO YOU HAVE A PROFESSIONAL LICENSE OR CERTIFICATION?
4. DO YOU HAVE A CURRENT DRIVER'S LICENSE?
5. DO YOU HAVE A CURRENT PASSPORT?
6. DO YOU HAVE A CURRENT PHOTO IDENTIFICATION?
7. DO YOU HAVE A CURRENT SOCIAL SECURITY NUMBER?
8. DO YOU HAVE A CURRENT TAXPAYER IDENTIFICATION NUMBER (ITIN)?
9. DO YOU HAVE A CURRENT VEHICLE REGISTRATION?
10. DO YOU HAVE A CURRENT VEHICLE INSURANCE?
11. DO YOU HAVE A CURRENT HOMEOWNERS INSURANCE?
12. DO YOU HAVE A CURRENT LIFE INSURANCE?
13. DO YOU HAVE A CURRENT HEALTH INSURANCE?
14. DO YOU HAVE A CURRENT DENTAL INSURANCE?
15. DO YOU HAVE A CURRENT VISION INSURANCE?
16. DO YOU HAVE A CURRENT LIFE SAVING INSURANCE?
17. DO YOU HAVE A CURRENT LIFE SAVING INSURANCE?
18. DO YOU HAVE A CURRENT LIFE SAVING INSURANCE?
19. DO YOU HAVE A CURRENT LIFE SAVING INSURANCE?
20. DO YOU HAVE A CURRENT LIFE SAVING INSURANCE?

QUESTIONNAIRE

THE PRAXI GROUP, INC.
Praxi Group, Inc.
10000 West 10th Avenue, Suite 100
Denver, CO 80202
Phone: (303) 750-1000
Fax: (303) 750-1001
www.praxi.com

NAME & LAST NAME _____
1. DO YOU HAVE A HIGH SCHOOL DIPLOMA OR GED?
2. DO YOU HAVE A COLLEGE DEGREE?
3. DO YOU HAVE A PROFESSIONAL LICENSE OR CERTIFICATION?
4. DO YOU HAVE A CURRENT DRIVER'S LICENSE?
5. DO YOU HAVE A CURRENT PASSPORT?
6. DO YOU HAVE A CURRENT PHOTO IDENTIFICATION?
7. DO YOU HAVE A CURRENT SOCIAL SECURITY NUMBER?
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12. DO YOU HAVE A CURRENT LIFE INSURANCE?
13. DO YOU HAVE A CURRENT HEALTH INSURANCE?
14. DO YOU HAVE A CURRENT DENTAL INSURANCE?
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17. DO YOU HAVE A CURRENT LIFE SAVING INSURANCE?
18. DO YOU HAVE A CURRENT LIFE SAVING INSURANCE?
19. DO YOU HAVE A CURRENT LIFE SAVING INSURANCE?
20. DO YOU HAVE A CURRENT LIFE SAVING INSURANCE?

In the Matter of Advice Letter 1495-Electric	)	Ninth Set of Discovery Requests
Public Service Company of Colorado - Revision	)	Of the CPUC Staff - Beckett
To Interruptible Service Option Credit Tariff	)	Served On Public Service Company
Docket No. 07S-521E	)	February 15, 2008

DISCOVERY REQUEST NO. CPUC9-3:

How many Public Service customers that participated in the ISOC program in 2005, 2006 and/or 2007 use an EMS? For these customers, please provide

- A. The customer's name;
- B. The peak demand for each customer in the last three years;
- C. The specific make/model of EMS that the customer has; and
- D. The years in which the customer had an EMS.

RESPONSE:

PSCo is unaware which ISOC customers use an Energy Management System to control their loads.

Sponsor: Joe Petraglia

Response Date: February 28, 2008

Re: The Tariff Sheets Filed by	)	First Set of Audit Requests
Public Service Company of Colorado	)	Of the CPUC Staff - Sharon Podein
With Advice Letter 1495 - Electric	)	Served On Public Service Company
	)	November 8, 2007

AUDIT REQUEST NO. CPUC1-1:

On page 20 of his direct testimony, Mr. Sheesley states that limiting ISOC interruptions to a 4 hours period during 24-hours and using a customer's energy management system will require new automated systems. Please describe in detail why the new systems are necessary, what the new systems would consist of, the cost of the new systems, and who would pay for the new systems.

RESPONSE:

The Company is planning to issue a request for proposals to design new automated systems with the conclusion of this filing. The new systems are needed in order to automate the process of interrupting customers and to allow automated control through a customer owned energy system. By automating the administration of the ISOC program, the Company can ensure that it will be able to efficiently and accurately administer the program for all ISOC customers regardless of the options they select in choosing to participate. The Company does not yet know what these systems would cost. The Company is proposing to recover the costs of any new systems needed to administer the ISOC program through rates assessed to ISOC program participants – in this case through a customer charge.

Sponsor: Tim Sheesley
20, 2007

Response Date: November

In the Matter of Advice Letter 1495-Electric	)	Eighth Set of Discovery Requests
Public Service Company of Colorado - Revision	)	Of the CPUC Staff - Beckett
To Interruptible Service Option Credit Tariff	)	Served On Public Service Company
Docket No. 07S-521E	)	February 12, 2008

DISCOVERY REQUEST NO. CPUC8-26:

Identify each and every modification to existing equipment, as well as each and every piece of new equipment, that Public Service will need to send a signal to the program participant's EMS? For each modification or addition, identify the associated costs?

RESPONSE:

Since official approval by the PUC has not been granted to allow PSCo to send signals to a customer's EMS in order to control their load, PSCo has not fully investigated the engineering, design, purchase cost or installation costs of the equipment needed to accomplish load control to a customer's EMS.

Sponsor: Joe Petraglia

Response Date: February 26, 2008

In the Matter of Advice Letter 1495-Electric	)	Eighth Set of Discovery Requests
Public Service Company of Colorado - Revision	)	Of the CPUC Staff - Beckett
To Interruptible Service Option Credit Tariff	)	Served On Public Service Company
Docket No. 07S-521E	)	February 12, 2008

DISCOVERY REQUEST NO. CPUC8-27:

To whom will any costs identified in the response to data request CPUC 8-26 be assessed? An individual ISOC program participant? All ISOC program participants (and if so, how allocated)? All or a subset of Public Service's customers?

RESPONSE:

ISOC participants must pay for the costs of phone lines, switches, engineering and any other expenses directly attributable to their participation in the program. The Company proposes to recover direct costs of the program that are not directly attributable to any one participant through a customer charge paid by all ISOC program participants.

Sponsor: Tim Sheesley

Response Date: February 26, 2008

Decision No. R07-0358

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

DOCKET NO. 06S-642E

RE: THE INVESTIGATION AND SUSPENSION OF TARIFF SHEETS FILED BY PUBLIC
SERVICE COMPANY OF COLORADO FOR ADVICE LETTER NO. 1468-ELECTRIC.

**RECOMMENDED DECISION OF
ADMINISTRATIVE LAW JUDGE
DALE E. ISLEY
PERMANENTLY SUSPENDING TARIFF**

Mailed Date: May 3, 2007

Appearances:

Ann E. Hopfenbeck, Esq., Ducker, Montgomery, Aronstein &
Bess, Denver, Colorado, for Public Service Company of Colorado;

David A. Beckett, Esq., Assistant Attorney General, for Staff of
the Colorado Public Utilities Commission; and

Christopher M. Irby, Esq., Assistant Attorney General, for the
Colorado Office of Consumer Counsel.

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I. PROCEDURAL BACKGROUND

1. The captioned proceeding was initiated on October 30, 2006, when Public Service Company of Colorado (Public Service) filed Advice Letter No. 1468 – Electric. By this filing Public Service seeks to correct its Demand Side Management Cost Adjustment (DSMCA) factor for the purpose of recovering credits it paid to customers in 2005 under its Interruptible Service Option Credit (ISOC) program over a seven-month period.

2. On November 29, 2006, the Commission suspended the effective date of the proposed tariff until March 31, 2007, and referred this matter to the undersigned Administrative Law Judge (ALJ). *See*, Decision No. C06-1396. On March 21, 2007, the Commission further suspended the effective date of the subject tariff through June 29, 2007. *See*, Decision No. C07-0234.

3. Timely interventions were filed in this matter by the Staff of the Commission (Staff) and the Colorado Office of Consumer Counsel (OCC).

4. A pre-hearing conference was held on January 24, 2007. *See*, Decision No. R07-0046-I. All parties appeared through their respective legal counsel. Procedures and a procedural

schedule were discussed and the matter was scheduled for hearing on April 3 and 4, 2007, in Denver, Colorado. *See*, Decision No. R07-0082-I.

5. Public Service submitted its direct testimony and exhibits on February 2, 2007. Answer testimony and exhibits were submitted by the OCC and Staff on March 9, 2007. Staff also submitted corrected answer testimony and exhibits on March 30, 2007. Public Service's rebuttal and supplemental rebuttal testimony and exhibits were filed on March 16 and 21, 2007.¹

6. On March 16, 2007, Public Service filed a Motion to Strike Portions of the Answer Testimony of Staff Witness, Sharon L. Podein (Motion to Strike). The Motion to Strike contended that those portions of Ms. Podein's answer testimony dealing with the 2006 ISOC program performance issues were irrelevant to the 2005 interruptible service credit recovery issues involved in this proceeding and should, therefore, be stricken. Staff filed its Response to the Motion to Strike on March 30, 2007.

7. On March 16, 2007, Public Service also filed a Motion for Approval of a One-Time Waiver of Tariff Provisions Requiring the Imposition of Penalties for Failure to Interrupt in the Event of a Capacity Interruption (Motion for Waiver). The Motion for Waiver sought a one-time waiver of the penalty provisions set forth in Public Service's ISOC tariff in connection with certain customer failures to interrupt their interruptible load in 2005 in response to Public Service's call for a series of capacity interruptions. Public Service requested that the relief sought in the Motion for Waiver be granted within the context of this proceeding. Staff filed its Response to the Motion for Waiver on March 30, 2007.

¹ Public Service's unopposed request to submit supplemental rebuttal testimony and exhibits on March 21, 2007, was granted as a preliminary matter at the April 3, 2007, hearing.

8. On April 3, 2007, the ALJ called the matter for hearing at the assigned time and place. All parties appeared through their respective legal counsel. Due to the large volume of confidential material submitted with the parties' pre-filed testimony and exhibits it was determined that the hearing would be conducted as a confidential hearing. As a result, the ALJ instructed that all testimony and exhibits presented and/or admitted at hearing be treated as confidential and subject to the protective provisions set forth in Rules 1100 through 1102 of the Commission's Rules of Practice and Procedure, 4 *Code of Colorado Regulations* (CCR) 723-1-1100 through 1102. In light of this ruling, all attendees at the hearing were required to execute and file Nondisclosure Agreements pursuant to 4 CCR 723-1-1100(g).

9. The Motion to Strike was denied as a preliminary matter at the April 3, 2007, hearing. In denying the Motion to Strike the ALJ agreed with Staff that the subject portions of Ms. Podien's answer testimony were designed to rebut Public Service's general contention that the problems it encountered in implementing the ISOC program were limited to the 2005 "start-up" period. The ALJ also found pertinent the fact that Public Service broached the subject of 2006 ISOC performance issues in connection with the discussion of economic interruption issues contained in its direct testimony. As a result, the ALJ concluded that the involved answer testimony of Ms. Podein is relevant to the issues involved in this proceeding and should not be stricken.

10. After hearing and considering further oral argument, that portion of the Motion for Waiver which sought relief from the subject tariff provisions *within the context of this proceeding* was also denied as a preliminary matter at the April 3, 2007, hearing. In so ruling, the ALJ determined that the relief requested in the Motion for Waiver broadened the scope of this proceeding beyond that originally contemplated in the public notice of this advice letter filing

and, therefore, due process considerations require that proper notice of the same be provided to other potentially interested parties. The filing of the Motion for Waiver at such a late stage in this proceeding effectively precluded a “re-notice” of this matter so as to properly advise interested parties of the waiver relief requested and to afford them an opportunity to be heard on the subject. This effectively prevents the ALJ from considering the merits of the Motion for Waiver in this proceeding.

11. During the course of the hearing testimony was presented by the following witnesses: Mr. Timothy J. Sheesley, a Chief Economist for Public Service; Dr. P.B. Schechter, a Rate Analyst with the OCC; and Ms. Sharon L. Podein, a Professional Engineer employed by the Staff. Exhibits 1 through 6, 7, 8, and 10 were marked, offered, and admitted into evidence.² Administrative Notice was taken of Exhibit 7, and Exhibit 9 was rejected.

12. The hearing concluded on April 3, 2006, at which time the evidentiary record was closed and the ALJ took the matter under advisement.

13. Public Service, OCC, and Staff filed their respective Statements of Position on April 13, 2007.

14. In accordance with § 40-6-109, C.R.S., the undersigned ALJ now transmits to the Commission the record in this proceeding along with a written recommended decision.

² Many of the exhibits containing the witnesses’ pre-filed testimony also contain sub-exhibits. These sub-exhibits are identified by the witnesses’ initials and are numbered consecutively. For example, Mr. Sheesley’s direct testimony, Exhibit 1, contains six sub-exhibits, Exhibits TJS-1 through TJS-5.

II. FINDINGS OF FACT

15. The ISOC program that is the subject of this proceeding was implemented by Public Service on June 1, 2005. It was approved by the Commission pursuant to a settlement reached in Docket No. 04S-164E (Decision No. C05-0412) and replaced a prior interruptible service program that had been in effect since 1996. *See*, Exhibit 1, TJS-1 (Settlement Agreement relating to the ISOC program) and Exhibit 4, SLP-1 (Sheets 90-90F of Public Service Tariff No. 7, hereinafter referred to as the “ISOC tariff”).

16. Under the prior program, service to interruptible customers could be interrupted for capacity reasons but not for economic reasons. There was no limit to the number of capacity interruptions that could be called and all customers received the same amount of notice from Public Service prior to its calling an interruption. Once an interruption was called, Public Service was responsible for physically controlling the customer’s load through its Moscad system.³ Interruptible customers received a discount from the base rates they would have paid had they not been interrupted and were also paid \$1.61 per kW when interrupted.

17. The ISOC program implemented in 2005 is designed to value and treat interruptible load like the avoided generation resource it replaces. As a result, interruptible customers are paid a monthly credit based on the avoided capacity and energy costs of a quick-start combustion turbine. Monthly credits are based on a formula set forth in the ISOC tariff. It takes into account the capacity and energy values of a turbine, as well as the level of interruption notice and the number of hours a customer elects to be interrupted set forth in the customer’s Interruptible Service Option (ISO) Agreement. For 2005, the formula for the capacity portion of

³ The Moscad system allowed Public Service to exercise physical control over an interruptible service customer’s load.

the credit was \$4.83 times the capacity availability factor based on hours multiplied by the notice factor. The formula for the energy portion of the credit was \$0.00189 multiplied by the annual number of hours. *See*, Exhibit 1, TJS-2. Both the capacity and energy portions of the monthly credit are adjusted for the summer and winter time periods and for losses.

18. The credits are paid regardless of whether Public Service actually calls any interruptions. Customers can be interrupted for capacity or economic reasons and can designate the number of hours (40, 80, 160, or 200) for which they will be subject to interruption during the year.⁴ The ISOC tariff does not require that Public Service use all of the subscribed hours under the ISOC program. Customers have the option of receiving less than ten minutes' notice, one hour's notice, or eight hour's notice in advance of a capacity interruption. Public Service is required to give at least one hour's notice in the event of an economic interruption.

19. Unlike the prior program, with the exception of customers electing ten minutes' notice of an interruption, customers have the responsibility to self-interrupt when a capacity interruption is called. The failure to do so subjects the customer to a penalty of 50 percent of its expected annual credit for all demand it was obligated to interrupt but did not interrupt. If the customer fails to self-interrupt twice, Public Service has the option to cancel the customer's ISO Agreement. If the ISO Agreement is cancelled, the customer is not eligible to participate in the ISOC program for one year. *See*, Exhibit 4, SLP-1, Sheet 90F.

20. On May 12, 2005, Public Service conducted a group training session for its prospective ISOC customers regarding the ISOC program. *See*, Exhibit 4, SLP-2. Forty-eight Public Service customers were invited to the training session. Eight of the 19 customers who

⁴ Customers have the option to "buy-through" economic interruptions by paying the actual cost of by-through energy incurred by Public Service. *See*, Exhibit 4, SLP-1, page 5.

ultimately decided to participate in the program failed to attend. *See*, Attachment Staff 2-2.A2 to Exhibit 6. In addition to this training, individual Public Service account representatives worked with individual customers in an attempt to assist them in understanding how the ISOC program was to operate.

21. Public Service called its first economic interruption under the ISOC program on June 20, 2005. Five ISOC participants were asked to interrupt on one hour's notice and four successfully self-interrupted. One of the participants did not and, instead, elected to "buy-through" the interruption.

22. Public Service called its first capacity interruption under the ISOC program on July 12, 2005. However, eight of the 19 ISOC program participants failed to self-interrupt. Four failed to do so on the basis of their erroneous belief that Public Service would continue to use its Moscad system to interrupt them as it had done under the previous interruptible service program. Three did not do so as a result of their failure to receive notice of the interruption under Public Service's Envoy Notification System (Envoy System). This failure resulted from an error in the way these customers' data had been entered into the Envoy System by Public Service.⁵ Although aware of the interruption, one 10-minute notice customer requested that it be allowed to continue to operate a portion of its facility as it had been allowed to do under the prior interruptible service program. Public Service erroneously granted this request as a result of a misunderstanding on the part of company personnel as to the requirements of the

⁵ The three involved customers were notified of the interruption by their Public Service Account Managers at various times after the attempt to provide notice via the Envoy System was made. As a result, there were delays in when these three customers were interrupted on July 12, 2005. This resulted in different interruption start times for each customer and in the failure to notify these customers that the initial four-hour interruption had been extended by one hour. *See*, Exhibit 4, SLP-3.

ISOC program.⁶ As a result, the involved customer was allowed to maintain approximately 10 to 15 percent of its load during the July 12, 2005, capacity interruption.

23. As a result of the problems described above, Public Service corrected the Envoy System on July 12, 2005. Sometime prior to July 13, 2005, it also contacted seven of the eight customers who failed to interrupt in order to clarify the ISOC program's interruption process. Public Service did not contact the remaining customer who failed to interrupt on July 12, 2005, because it did not become aware of that failure until after the July 20, 2005, capacity interruption discussed below. That customer continued to believe that Public Service was controlling its load through the Moscad system.

24. Public Service called additional capacity interruptions on July 13, 14, and 20, 2005. All customers successfully self-interrupted on these dates except the customer discussed above who continued to believe that Public Service was controlling its load. That customer failed to interrupt on any of these occasions.

25. Public Service did not assess penalties against any of the customers who failed to interrupt on July 12, 2005, or against the one customer who also failed to interrupt on July 13, 14, and 20, 2005.⁷ Under the ISOC tariff, the total amount of these penalties is \$301,665. *See*, Exhibit 4, SLP-5. On September 2, 2005, Public Service notified a member of the Commission's

⁶ The ISOC tariff provides that Public Service will maintain physical control over load for customers electing the ten-minute notice option for capacity interruptions. On July 12, 2005, Public Service had the ability to interrupt this particular customer's load through its substation breaker but did not do so. Instead, as indicated above, it erroneously allowed the customer to continue using a portion of its facility through the interruption. Problems relating to Public Service's unwillingness or inability to assume physical control of this customer's load continued into 2006. *See*, Exhibit 4, SLP-6. As a result of an increase in the number of ten-minute notice customers, Public Service has now decided to use a real-time web-based monitoring tool, the Cannon control box, to interrupt such customers.

⁷ With the exception of this single customer, Public Service assessed penalties against all customers who failed to interrupt after July 12, 2005.

Staff of its intent not to assess the subject penalties. *See*, Exhibit 1, TJS-5. Staff did not respond to that notice.

26. During 2005 Public Service used 506 of the 674 hours available to it under the ISOC program for economic interruptions. The 168 hours it did not use (25 percent of the total available hours) were spread among 8 of the 19 ISOC program participants.⁸ Two of the 160-hour participants each had 66 unused hours. The one 10-minute notice customer had 14 unused hours, one customer had 15 unused hours, 3 customers each had 3 unused hours, and 1 customer had 1 unused hour. *See*, Exhibit 4, SLP-7. No hours were remaining for 11 customers.

27. Between June and November 2005 Public Service paid \$3,470,965 in credits to its interruptible service customers under the ISOC program.⁹ *See*, Exhibit 1, TJS-3. As provided in the Settlement Agreement, Public Service seeks to recover \$3,467,126 of this amount through the DSMCA mechanism over seven months.¹⁰ *See*, Exhibit 1, TJS-1, ¶ 10.

28. As required by the Settlement Agreement, Public Service prepared a cost/benefit analysis of the ISOC program for 2005. *See*, Exhibit 1, TJS-4. It showed that the ISOC program realized a net benefit of \$556,034 in 2005.¹¹

⁸ During 2006 Public Service used 95 percent of the total hours available to it for economic interruptions.

⁹ The subject period starts in June 2005 since it was the first month of the ISCO program and ends in November 2005 since November credits are the last credits paid in 2005.

¹⁰ The \$3,839.00 reduction from the amount of credits paid and the amount of recovery sought by Public Service results from two adjustments, one for \$3,400.56 and another for \$438.08. They are described at page 19 of Mr. Sheesley's direct testimony (Exhibit 1).

¹¹ This amount consists of the difference between the cost of avoided capacity and energy and the credits paid to ISOC participants under the ISOC program in 2005. The methodology employed by Public Service in calculating this benefit is described at pages 7 through 10 of Mr. Sheesley's direct testimony (Exhibit 1).

III. SUMMARY OF PARTY POSITIONS

A. Public Service

29. Public Service believes that it acted prudently in operating the ISOC program in 2005 and that the Commission should approve a full recovery of the \$3,467,126 in credits it paid to program participants that year through the DSMCA mechanism. It submits that the cost/benefit analysis it prepared in connection with its operation of the ISOC program in 2005 accurately quantifies the savings of avoided capacity and energy costs that were realized from the program and demonstrates that it produced net financial benefits to ratepayers. Public Service disagrees with Staff's position that the cost/benefit analysis inflates the value of the capacity benefit and was only to be used for consideration of whether to retain the ISOC program on a going-forward basis.

30. In furtherance of its position, Public Service points out that the ISOC program differed significantly from the previous interruptible program which had been in place for a number of years. It states that the ISOC program required the implementation of new, more complex systems for notifying customers and that, unlike the prior program, interruptions of its largest participating customer involved interrupting its entire load. In addition, the former program did not include economic interruptions, customers were subject to interruption at anytime, and there were no differing ranges in the number of hours of interruption. It contends that it conducted comprehensive training for its prospective ISOC customers and its employees responsible for operating the new program prior to its implementation.

31. As indicated above, the interruptions called on July 12, 2005, were the first capacity interruptions called under the ISOC program. Public Service contends that the operational difficulties experienced on that day resulted from confusion and misunderstanding

regarding the operation of the ISOC program on the part of some ISOC participants and its own employees. It believes that, in general, customers did not interrupt because they were either confused about the operational differences between the prior program and the new ISOC program or they did not receive notice of interruption from the Envoy System. It points out that it corrected the Envoy System immediately after the July 12, 2005 operational problems. It also immediately contacted seven of the eight customers who failed to interrupt to clarify the new process. Public Service also points out that, with the exception of one customer, all ISOC participants either performed as required in connection with the three other interruptions called in July 2005 or were assessed a penalty for noncompliance.

32. Under the circumstances, Public Service does not believe that it was fair or reasonable to assess penalties to its participating customers in connection with their failure to self-interrupt in July 2005. As a result, it disagrees with Staff's contention that its recovery of ISOC program credits paid in 2005 should be reduced by \$301,227, the amended total amount of the penalties that it could have assessed under the ISOC tariff.¹²

33. It believes that its decision not to assess the subject penalties was fair in light of the information available to it at the time and that it acted reasonably in recognizing the legitimate confusion that existed. It also believes that imposition of the subject penalties against those customers who failed to receive notice of the interruption is not appropriate. In its opinion, none of these customers failed to interrupt within the meaning of the ISOC tariff since their obligation to self-interrupt can only be triggered upon receipt of appropriate notice of the interruption. Finally, it points out that the penalty provision is severe, amounting to 50 percent

¹² The total penalty amount shown in Exhibit 4, SLP-5 is \$301,665. However, the \$438.00 penalty shown therein has already been deducted from the amount Public Service seeks to recover in this proceeding. Therefore, the \$301,665 total penalty amount must be reduced by \$438.00 as well.

of the annual credit associated with the load that is maintained during the interruption. It believes that the assessment of such a severe penalty under the circumstances would have acted as a disincentive for customers to remain in the ISOC program.

34. Public Service also disputes Staff's argument that failing to assess the involved penalties deprives ratepayers of a benefit for which they have paid. It contends that this argument ignores the fact that the capacity value of the ISOC program exists regardless of whether the ISOC participants are actually interrupted. Public Service points out that once participants subscribe to the ISOC program, it does not need to acquire capacity necessary or stand ready to serve those participants' loads. It argues, therefore, that it is reasonable to allow it to recover costs for resources that generated an overall savings for retail customers.

35. Public Service also disagrees with Staff that the penalty provision contained in the ISOC tariff is mandatory. It points out that some of the operational problems occurring on July 12, 2005, were not a case of customers defying a direction to interrupt since three customers who failed to interrupt on that day did not receive notice of the interruption. It contends that the effect of these operational problems is no different than if it had simply excluded certain customers from the capacity interruption. Therefore, Public Service believes that circumstances dictate that the subject penalty provision should not be considered mandatory.

36. Public Service also disagrees with Staff's contention that its failure to use 25 percent of the hours available for interruption under the ISOC program require that it be denied some level of recovery for failing to optimize the value of the program. Given the newness and complexity of the ISOC program, Public Service submits that it was not unreasonable for it to fail to use all available hours. It points out that it does not have the luxury of 20/20 hindsight; *i.e.*, the ability to know what market prices will be for the remainder of the

year or what reliability issues may arise at the time it is making decisions about how to use available program hours.

37. Public Service contends that Staff's calculation of the level of energy savings it could have obtained had it called additional economic interruptions overestimates both the number of kWh that remained unused and the potential energy savings per kWh. Regarding the number of kWh, it believes that it is unreasonable to assume, as Staff did, a 100 percent load factor in calculating avoided energy savings. As for the cost of energy, it believes Staff erred in failing to offset the calculated cost by the rate that would have been paid by the interrupted customer for energy used.

38. Public Service also contends that Staff's estimate of the decremental cost of energy is inflated since it only includes peak hours. It points out that the system operator does not have perfect foresight and cannot necessarily determine the highest cost hours during a particular month. Further, it submits that the system operator has no way of knowing whether he will need to have hours available to meet system emergencies that could occur at a later time. Public Service contends that its actions in failing to use all available hours should be considered reasonable in light of the very low potential for incremental energy savings as compared to the harm that would occur if it were to experience a system emergency and did not have hours remaining.

39. For these reasons, Public Service believes that its calculation of the maximum potential economic benefit of \$32,001 for unused hours is more accurate than the \$197,885 calculation advanced by Staff.

B. Staff

40. Staff contends that Public Service mismanaged the ISOC program in 2005 during capacity interruptions and failed to maximize the benefit of the program to ratepayers by failing to call sufficient economic interruptions. It believes that Public Service should be held accountable for such failures and should be denied full recovery of the costs incurred in operating the ISOC program in 2005. It submits that Public Service's cost recovery should be reduced by the amount of the penalties it failed to assess in connection with the July 2005 capacity interruptions and the amount of lost benefits associated with Public Service's failure to fully use the hours available in the ISOC program.

41. Staff generally contends that the failure of certain ISOC customers to interrupt when capacity interruptions were called in July 2005 resulted from the following Public Service ISOC program management mistakes: 1) inadequate formal training; 2) over reliance on its account managers to informally train participants; 3) failure to timely install Cannon control devices; and 4) incorrect entry of data into the Envoy System. Staff believes that Public Service should bear the financial burden for these mistakes since no other entity involved with the operation of the ISOC program in 2005 contributed to the circumstances surrounding the problems that arose in July 2005.¹³

¹³ In rebutting Public Services' contention that these problems were quickly corrected, Staff points out that they continued, at least with regard to one ISOC customer, into 2006. In this regard, Staff notes that Public Service was slow to implement measures to keep this customer offline during a capacity interruption called on February 18, 2006. *See*, Exhibit 4, SLP-6. As a result, Staff contends that these operational mistakes were not addressed in a timely fashion and cannot be excused as non-recurring mistakes.

42. Staff believes that granting Public Service's request for full cost recovery of its 2005 ISOC program costs will result in the general body of ratepayers paying for something they did not receive. As a result, it believes that Public Service should not be allowed to effectively charge the general body of ratepayers for the full costs of the ISOC program as if there had been no operational issues. It believes that Public Service must be sent a signal that its management of the ISOC program must be prudent in order to justify a full recovery of program costs.

43. Regarding the penalty assessment issue, Staff contends that the ISOC tariff provision that provides for penalties to be assessed for an ISOC customer's failure to interrupt during a capacity interruption is mandatory. It submits that the ISOC tariff does not allow Public Service to unilaterally elect not to assess such penalties which, if paid, would offset the ISOC credits that it now seeks to recover in this proceeding. Staff acknowledges that Public Service's decision not to assess penalties arising out of the July 2005 capacity interruptions might help it preserve its business relationship with its large ISOC customers. However, it submits that Public Service, and not the general body of ratepayers, should bear the financial burden of that decision.

44. Staff argues that Public Service has provided no explanation as to why it believed it was necessary to hold 168 hours (or 25 percent of the total available hours in reserve) for possible capacity or contingency interruptions that might be called in late December 2005.¹⁴ For program participants with less than four hours remaining to be used, Staff submits that an extension of an interruption could have easily used up remaining hours with little inconvenience to the participant. The less than ten-minute notice program participants, unlike the one and eight-hour notice participants, are the only participants that can count towards operating reserves.

¹⁴ In this regard, Staff points to prior representations made by Public Service in Docket No. 04S-164E that it would maximize the benefit of the ISOC program in 2005 by using virtually all available program hours. *See*, Exhibits 7 and 4, page 22.

Further, Staff argues that holding hours in reserve for the less than ten-minute customers does not benefit ratepayers if that energy is redundant to native load energy. In sum, Staff contends that Public Service has failed to demonstrate that the withholding of 168 available interruptible hours was just and reasonable and that this failure should preclude Public Service from securing a full recovery of its 2005 ISOC program costs.

45. Staff contends that ratepayers have experienced a lost economic benefit of between \$32,001 and \$197,885 in 2005 as a result of Public Service's mismanagement of the ISOC program. It submits that an estimate of the energy (kWh) that might have been interrupted and a calculation of the decremental price of electricity for the time periods in question, when multiplied together, determine that value of these lost benefits. It believes that a value in the upper half of the range referred to above should be deducted from the amount that Public Service seeks to recover.

46. Staff's decremental price calculation results from dividing the program participants into three groups in order to identify the December 2005 hours that could have been used. Staff used blocks of hours in the late afternoon and early evening which typically represent the highest priced hours. It also avoided typically lower cost days between December 26 and 31. Further, by establishing three groups, Staff refined the use of the Cost Calculator and, contrary to Public Service's approach of using values 50 MW into the resource stack, Staff took into account the relative load size. For Group I this represented 1 MW and for Group II 100 MW. For Group III, Staff's approach was to use the lower of the buy-through prices offered in December 2005.

47. Staff submits that it did not attempt to maximize the value of lost benefits. It contends that this is demonstrated by the fact that the decremental cost of Group II is significantly less than the decremental prices at which Public Service called economic

interruptions in 2005. Considering the circumstances, Staff believes that Public Service's Energy Markets group should be able to determine a better than average price for the purpose of valuing a lost benefit.

48. Staff believes that the calculation of lost economic benefit proposed by Public Service is flawed since it estimates potential interrupted energy by using the actual energy consumed over 159 on-peak December 2005 hours. Staff contends that this produces an unreasonably low value since it includes periods of zero energy usage for over 10 percent of the time. As a result, it believes that Public Service has unreasonably reduced the assumed available energy to a level significantly below the available energy. Staff submits that a 50 percent load factor represents a moderate position with respect to the potential unused kilowatt hours available to the ISOC program.

49. In sum, Staff recommends that the Commission hold Public Service accountable for the failure to optimize the value of the ISOC program in 2005 by a reduction in the cost recovery it seeks in this proceeding of between \$32,001 and \$197,885. It recommends that the reduced amount be recovered over a 12-month period as opposed to the 7-month recovery period proposed by Public Service.

50. Staff disputes Public Service's contention that the cost/benefit analysis it prepared justifies a full recovery of its 2005 ISOC program costs. It contends that the cost-benefit analysis was never intended to be used for this purpose and, instead, was designed to be used by Public Service in assessing the value of the ISOC program for the purpose of making any necessary program changes. Aside from not being relevant for purposes of determining cost recovery, Staff contends that the cost/benefit analysis relies on a number of suspect inputs and, as

a result, inflates the capacity benefit. If that is true, Staff believes that the ISOC program unintentionally subsidizes its subscribers.

51. Finally, Staff recommends that the Commission order Public Service and it to participate in workshops in order to devise an appropriate methodology for evaluating the benefit provided to ratepayers by the ISOC program.

C. OCC

52. The OCC recommends that the Commission approve full recovery of Public Service's request for \$3,467,126 in interruptible ISOC credits through the DSMCA mechanism. While acknowledging there were some problems with the ISOC implementation in 2005, it believes Public Service acted with reasonable speed and diligence in investigating and solving these problems. It also points out that Public Service's operation of the ISOC program has improved in 2006. As a result, the OCC does not believe the Commission should deny recovery for operational issues encountered by Public Service during the start-up phase of the ISOC program.

IV. DISCUSSION

A. Reduction of Requested Recovery Due to Capacity Interruptions

53. The ALJ agrees with Staff's recommendation that Public Service's request for recovery of amounts paid in 2005 as credits under the ISOC program be reduced by \$301,227, the adjusted amount that could have been assessed to certain ISOC program participants as penalties for their failure to self-interrupt when the capacity interruptions discussed above were called in July 2005. The ALJ finds persuasive Staff's argument that these capacity interruption failures resulted primarily from Public Service's mismanagement of the ISOC program. Regardless of the precise cause of these failures, it is undisputed that they cannot be assigned to

the general body of ratepayers. As a result, it would not be just or reasonable for them to bear the cost impact occasioned by such interruptions.

54. Regarding Public Service's management of the ISOC program, it is undisputed that four of the eight customers who failed to interrupt on July 12, 2005, did so either as a result of Public Service's failure to properly notify them of the interruption or as a result of its own misunderstanding of the ISOC program. As discussed above, three of the involved customers did not receive notice of the interruption as a result of Public Service's failure to properly input necessary data into the Envoy System. One of the involved customers was allowed to continue to operate a portion of its facility on the basis of Public Service's erroneous belief that this was allowed under the ISOC program. As such, the failure of these customers to interrupt on July 12, 2005, was directly attributable to operational errors or omissions committed by Public Service.

55. It is also logical to attribute the remaining four customers' failure to interrupt on July 12, 2005, as well as to the one customer's failure to interrupt on July 13, 14, and 20, 2005, to Public Service's failure to properly educate them on the terms of the ISOC program. Notwithstanding Public Service's recognition that operational differences between the prior interruptible service program and the ISOC program were "significant," it conducted only one formal training session for its program participants three weeks prior to the time the program was implemented. Eight of the nineteen participants failed to attend this training session. Public Service's reliance on its individual account managers to educate participants concerning the operational differences between the prior interruptible service program and the ISOC program were obviously inadequate given the problems encountered in July 2005. In addition, there was no evidence presented indicating that Public Service tested the ISOC program before it became operational.

56. The adjusted penalty amount of \$301,227 constitutes an appropriate measure of the recovery disallowance for the July 2005 capacity interruptions in light of the mandatory nature of the penalty provisions set forth in the ISOC tariff. That portion of the ISOC tariff entitled “FAILURE TO INTERRUPT – CAPACITY & CONTINGENCY INTERRUPTIONS” provides, in pertinent part, as follows:

In the event the customer fails to interrupt during a capacity or contingency interruption, the customer shall pay the Company fifty percent (50%) of the customer’s expected annual credit for all demand that the customer was obligated to interrupt but did not interrupt. The penalty will apply only to the portion of the load that the customer fails to interrupt. (Emphasis added).

The ISOC tariff contains no provision excusing the assessment of such penalties.¹⁵

57. While the circumstances underlying the cause of the involved ISOC participants’ failure to self-interrupt during the 2005 capacity interruptions may provide them a defense to any claim by Public Service for collection of the penalties called for by the ISOC tariff, the ALJ cannot agree with Public Service’s contention that the problems it encountered in administering the ISOC program in 2005 excuse its unilateral decision not to seek collection of such penalties.¹⁶ This is especially true in light of Public Service’s further contention that it be permitted to recover the full costs incurred in connection with the 2005 ISOC program.

58. Simply put, the consequences of Public Service’s failure to collect the subject penalties should not be visited on ratepayers by requiring them to fully reimburse it for all its

¹⁵ In the absence of securing a waiver from the penalty provision in the ISOC tariff, applicable law would appear to require Public Service to assess the subject penalties. *See, Shoemaker v. Mountain States Telephone and Telegraph*, 559 P.2d 721 (Colo. 1976)(public utility bound by its tariff provisions despite its negligence in the administration of such provisions) and *U.S. West Communications, Inc. v. City of Longmont*, 948 P.2d 509 (Colo. 1997)(filed rate doctrine prohibits regulated entity from charging rates for its services different from the rates filed with the regulatory authority). *See also, Denver & Rio Grande Western Railroad Company v. Marty, et. al.*, 353 P.2d 1095 (Colo. 1960).

¹⁶ The ALJ is particularly sympathetic to those ISOC customers who did not receive notice of the July 12, 2005, capacity interruption. Obviously, the obligation to self-interrupt imposed under the ISOC program is premised on the customer’s receipt of the appropriate notice, a responsibility assumed by Public Service.

ISOC program costs, a portion of which could possibly have been recovered by assessing the penalties. In addition, allowing Public Service to fully recover credits paid under the ISOC program in the face of its decision not to collect the subject penalties would effectively provide it no incentive to enforce the penalty provisions of the ISOC tariff in the future. If Public Service believes that problems encountered with the start-up of its ISOC program excuse its 2005 interruptible customers from paying the involved penalties, it alone should stand the cost of that decision.¹⁷

59. For the foregoing reasons, the ALJ concludes that Public Service's request for recovery of amounts paid in 2005 as credits under the ISOC program should be reduced by \$301,227, the total adjusted amount of penalties called for by the ISOC tariff in connection with capacity interruptions.

B. Reduction of Requested Recovery Due to Economic Interruptions

60. The ALJ also agrees with Staff's position that Public Service did not adequately manage the ISOC program in 2005 in connection with economic interruptions. Public Service's failure to use the 168 remaining hours available for economic interruptions did not maximize available ISOC program benefits that should have been realized by ratepayers. Accordingly, it's recovery of 2005 ISOC program costs should be reduced by the value of those lost benefits. The ALJ calculates that value to be \$42,872 as described more fully below.

61. The 168 unused hours at issue represents both a cost to ratepayers and an unrealized savings by them. Savings are achieved by interrupting load which would otherwise need to be served through buying power at a cost greater than Public Service is contractually

¹⁷ Public Service seems to suggest that Staff acquiesced in its decision not to assess the subject penalties by failing to respond to the notice it provided in September 2005 of that decision. *See*, Exhibit 4, SLP-4. The ALJ finds no merit to that contention.

obligated to sell it. Quantifying the benefit that could have been saved by utilizing the remaining ISOC hours is difficult. However, in general, the benefit calculation consists of three factors; namely, the remaining hours, the load which could have been interrupted, and the decremental cost of this load. The benefit estimates presented at hearing range from Public Service's estimate of \$32,001 on the low end to Staff's estimate of \$197,885 on the high end. The difference in these estimates is primarily attributable to disparities in the estimated load that potentially could have been interrupted and the cost of decremental power.

62. Regarding unused hours, the ALJ notes that seven such hours were contained in blocks of less than four hours. There is some question as to whether these hours could have been used at all since the minimum interruption time is four hours. Staff argues that they could have been used by merely extending the economic interruptions that were called. It also suggests that the buy through price of \$162.00/MWh should be used for the loss benefit calculation. *See*, Exhibit 4, page 25. However, it is likely that the benefit would have been less since electric power prices would probably have dropped by the end of the interruption. In addition, the actual decremental cost at that time is not known. For these reasons, the ALJ concludes that the potential benefits that would have resulted from the use of these seven hours are so potentially small and difficult to estimate that they, and the corresponding load, should be excluded from the lost benefit calculation.¹⁸

63. Staff and Public Service have provided two different methods to estimate the load that could have been interrupted had the subject hours been used. Staff applied a 50 percent load factor to the maximum number of interruptible hours each customer had committed to.

¹⁸ Notwithstanding this conclusion, if less than four hours were to remain in any one customer block in the future it would seem prudent for Public Service to extend the outage as long as a minimal benefit can be realized.

Alternatively, Public Service used an estimate of the average usage based on meter data for the month of December 2005.¹⁹ There is no way to definitively determine when Public Service's Energy Markets group would have called these interruptions and what the load would have been at those times. However, it is reasonable to assume that it would have selected an outage time frame based on price and not necessarily the peak load of the ISOC participants.

64. Public Service's data is most credible and should be afforded more weight in calculating avoidable load since it represents real usage instead of an arbitrary load factor. It is also consistent with how the load was determined for the cost benefit analysis. As a result, it is reasonable to adopt the total load calculation of 523,262.52 kWh provided by Public Service for the remaining 168 hours. *See*, Exhibit 3, TJS-8. Deduction of the load associated with the blocks of time that are less than four hours results in an estimated potential avoided load of 519,199 kWh or 519.199 MWh.

65. Public Service and Staff provided different calculations relating to the decremental cost of the avoided load. Public Service provided an average decremental cost estimate of \$101.61/MWh. *See*, Exhibit 3, page 9. Staff's estimate entailed breaking the remaining hours into three groups and applying the hours to peak periods when the hours could have been used. Three prices were presented; \$137.84/MWh for Group I, \$127.20/MWh for Group II, and \$162.00MWh, the buy-through price, for Group III. *See*, Exhibit 4, pages 24 and 25.

66. There are a number of ways the subject unused hours could have been allocated throughout the month of December 2005. However, it is reasonable to assume, as Staff argues,

¹⁹ Staff's criticism of Public Service's data is that it includes numerous zero usage days and also includes days in late December which, historically, is a very low usage period. As a result, Staff believes that the average data used by Public Service is artificially low.

that Public Service's Energy Markets group should perform on a better-than-average basis given the resources available to it. As a result, an overall decremental cost of power of \$127.20/MWh is reasonable considering that it is 100 MW into the resource stack and is actually less than the decremental prices at which Public Service called other economic interruptions in 2005.

67. The last aspect of estimating the lost benefit from Public Service's failure to use all available hours is the deduction of energy charges paid by the ISOC customer for the energy that would have otherwise been interrupted. Public Service has calculated this amount to be \$23,170. *See*, Exhibit 3, TJS-8. Staff did not address this issue and, as a result, this amount should be deducted from the lost benefit calculation.

68. By virtue of the foregoing, it is reasonable to conclude that the lost benefit to ratepayers which resulted from Public Service not utilizing the 168 ISOC hours is \$42,872. This results from multiplying the potential avoided load of 519,199 kWh by the decremental cost of \$127.20/MWh and then subtracting the \$23,170.00 of energy charges paid by the ISOC customer for the energy that would have otherwise been interrupted. Public Service's recovery of 2005 ISOC program costs should be further reduced by this amount.

69. The ALJ has considered, but has found unpersuasive, Public Service's arguments that it is unfair and unreasonable to require it to optimize the value of the ISOC program. Its argument that assessing the prudence of its actions or inactions improperly involves the use of 20/20 hindsight is unconvincing given the fact that the ISOC program includes an economic interruption component. If the estimated price of electricity cannot be effectively forecast so that periods of net savings can be identified, then the ability to interrupt on an economic basis should not be part of the ISOC program. This is not to say that Public Service should be required to predict the periods of peak decremental prices with perfect certainty. However, it is reasonable

to conclude that it can accurately predict time periods when the decremental price is higher than average.

70. Public Service's argument that it cannot always know if when or if available hours may be needed to alleviate a system emergency late in the year is valid only for less than ten-minute notice customers. Furthermore, interruptible load is just one of the tools available for maintaining system reliability. In light of the fact that interruptible hours have an energy value that vanishes if they are not used, it is reasonable to expect that native load resources such as quick start combustion turbines and units operating below capacity would be made available during December so that the ISOC hours could be used at earlier times of the year with native load operating as a backup.

71. The ALJ has already discussed, and found wanting, Public Service's argument that the newness and complexity of the ISOC program in 2005 provides a justification for its failure to use all the hours available to it for economic interruptions.

72. Finally, while the ALJ recognizes that the greatest value of the ISOC program is attributable to avoided generation as opposed to energy costs, he does not find that this provides justification for failing to maximize ISOC program benefits.

C. Reduction in Requested Recovery Due to Transmission Losses

73. Both Staff and Public Service acknowledge that one ISOC program participant received more in ISOC program credits in 2005 than it should have received due to the treatment of transmission losses. Both also agree that Public Service should not recover the overpayment. Staff values the overpayment at \$10,293. This includes credits earned during the period of June through December 2005. Public Service values the overpayment at \$8,471 by excluding \$1,822 in credits that were earned in December 2005, but not paid until January 2006.

74. Staff believes Public Service's 2005 cost recovery should be reduced by the full \$10,293 amount in order to be consistent with the transition to an accrual accounting method it recommends for the ISOC program on a going-forward basis. Public Service indicates that it discovered the transmission loss adjustment in April 2006 and reduced the involved customer's credits for 2006 by the 2005 amount (\$8,471) and 2006 amounts (\$9,731), a total of \$18,202. Therefore, it proposes that either the entire \$18,202 adjustment be included in its 2006 DSMCA filing, or that \$9,731 be reflected in the 2006 filing, and \$8,471 be reflected in the 2005 filing.

75. The ALJ believes that Staff's recommendation should be adopted. It seems logical that Public Service's 2005 ISOC program cost recovery be reduced by transmission losses that were incurred in that calendar year encompassed by the ISOC program. Therefore, the 2005 cost recovery amount should be reduced by an additional \$10,293.

D. Recovery Period

76. Public Service requests that it be allowed to recover costs expended in connection with the 2005 ISOC program over a seven-month period. Staff contends that the recovery period be extended to 12 months.

77. The ALJ believes that the 12-month recovery period recommended by Staff is the more traditional and standard recovery period used in cases of this type. Therefore, Public Service will be authorized to recover costs expended in connection with the 2005 ISOC program over a 12-month period.

E. Staff Request to Order Workshops in Connection with ISOC Program Issues

78. Staff has requested that the Commission order Public Service to engage in workshops for the purpose of discussing the usefulness of the cost-benefit analysis, the methodology used to prepare that analysis, and for integrating issues that may be resolved during

the course of workshop discussions into the ISOC program on a going forward basis. In addition, Staff contends that adopting an accrual method of ISOC program accounting would simplify the annual review of the program by matching performance for a given calendar year with the credits earned for that performance.

79. The ALJ agrees that workshops relating to the above topics could be productive. As a result, Public Service and Staff will be ordered to engage in workshops to address, at a minimum, the issues set forth below.

- 1) Examine the level of coincidence between each of the ISOC program participant's 15-minute intergraded kW demand and system peak.
- 2) Evaluate the advisability and implications of applying accrual accounting to the cost recovery.
- 3) Evaluate the usefulness and purpose of preparing a cost-benefit analysis relating to the ISOC program and the methodology to be used in preparing such an analysis.
- 4) Analyze methods for optimizing the use of ISOC hours including, but not limited to, (a) an analysis of the results of the application of actual data from the last two years of operation of the ISOC program, and (b) an analysis of how to eliminate blocks of less than four hours.
- 5) Examine and evaluate the economic interruptions that have been called over the last two years of the ISOC program's operation and how Energy Markets forecasting can be utilized in this process.

80. The subject workshops shall commence within 45 days of the date this recommended decision becomes administratively final and shall conclude no later than 60 days thereafter. The parties shall submit a joint report to the Commission setting forth the results of their workshop discussions no later than 30 days after the conclusion of the workshops.

V. CONCLUSIONS OF LAW

81. Public Service's request for recovery of amounts paid in 2005 as credits under the ISOC program are reduced by \$301,227, the total amount of penalties called for by the ISOC tariff in connection with capacity interruptions.

82. Public Service's request for recovery of amounts paid in 2005 as credits under the ISOC program are reduced by \$42,872, the value of ISOC program benefits lost as a result of its failure to use available hours in connection with economic interruptions.

83. Public Service's request for recovery of amounts paid in 2005 as credits under the ISOC program are reduced by \$10,293, the value of certain transmission losses incurred by one ISOC program participant in 2005.

84. Public Service's request for recovery of amounts paid in 2005 as credits under the ISOC program are reduced by \$3,839.00, the value of certain ISOC program adjustments relating to penalties called for by the ISOC tariff in connection with ISOC program termination and capacity interruption penalties.

85. Public Service is authorized to recover a total of \$3,112,734 in credits paid to its ISOC customers in 2005 through the DSMCA mechanism over 12 months.

86. Public Service and Staff will engage in workshops for the purpose of addressing the ISOC program issues described above.

87. In accordance with § 40-6-109, C.R.S., it is recommended that the Commission enter the following order.

VI. ORDER

A. The Commission Orders That:

1. The tariff sheets filed by Public Service Company of Colorado pursuant to Advice Letter No. 1468-Electric are permanently suspended.

2. Public Service Company of Colorado shall file, on not less than ten days' notice, tariffs consistent with this Recommended Decision; *i.e.*, tariffs designed to correct its Demand Side Management Cost Adjustment factor for the purpose of recovering \$3,112,734 in credits paid to customers in 2005 under its Interruptible Service Option Credit (ISOC) program over a 12-month period.

3. Public Service Company of Colorado and the Staff of the Commission shall, within 45 days of the date this Recommended Decision becomes administratively final, commence workshop discussions relating to the ISOC program as more particularly described in paragraphs 78 and 79 above. The workshop discussions shall conclude no later than 60 days thereafter. The parties shall submit a joint report to the Commission setting forth the results of their workshop discussions no later than 30 days after the conclusion of the workshops.

4. Attached hereto as Appendix A is a Compliance Index setting forth the compliance requirements contained in this Order.

5. This Recommended Decision shall be effective on the day it becomes the Decision of the Commission, if that is the case, and is entered as of the date above.

6. As provided by § 40-6-109, C.R.S., copies of this Recommended Decision shall be served upon the parties, who may file exceptions to it.

a) If no exceptions are filed within 20 days after service or within any extended period of time authorized, or unless the recommended decision is stayed by the Commission

upon its own motion, the recommended decision shall become the decision of the Commission and subject to the provisions of § 40-6-114, C.R.S.

b) If a party seeks to amend, modify, annul, or reverse basic findings of fact in its exceptions, that party must request and pay for a transcript to be filed, or the parties may stipulate to portions of the transcript according to the procedure stated in § 40-6-113, C.R.S. If no transcript or stipulation is filed, the Commission is bound by the facts set out by the administrative law judge and the parties cannot challenge these facts. This will limit what the Commission can review if exceptions are filed.

7. If exceptions to this Recommended Decision are filed, they shall not exceed 30 pages in length, unless the Commission for good cause shown permits this limit to be exceeded.

THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

Administrative Law Judge

Before the Public Utilities Commission of the State of Colorado

Decision No. R07-0358

DOCKET NO. 06S-642E

PUBLIC SERVICE COMPANY OF COLORADO

Second Revised

Sheet No. 90

P.O. Box 840
Denver, CO 80201-0840

Sub. First Revised

Cancels
Sheet No. 90

ELECTRIC RATES	RATE
INTERRUPTIBLE SERVICE OPTION CREDIT	
<p data-bbox="630 369 862 394">SCHEDULE ISOC</p> <p data-bbox="196 436 406 462"><u>APPLICABILITY</u></p> <p data-bbox="196 468 1297 684">Applicable as an interruptible service option to customers who receive electric service under the Company's General Service rate Schedules SG, PG or TG, including customers that elect optional Net Metering Service under Schedule NM that have agreed to pay for necessary metering to measure the interruptible load. Not applicable to customers who receive electric service under the Company's Standby Service rate Schedules SST, PST, or TST.</p> <p data-bbox="196 722 389 747"><u>AVAILABILITY</u></p> <p data-bbox="196 751 1297 936">Optional service under this rate schedule is available to customers that have entered into a written, signed and dated Interruptible Service Option Agreement that specifies the Contract Firm Demand, as well as the customer specific data necessary for the Company to calculate the customer's Monthly Credit as set forth below.</p> <p data-bbox="196 942 1297 1287">To qualify under this schedule, a customer must have a Contract Interruptible Load of 300 kW<u>kilowatts</u> or greater, as defined below. Also, customer must achieve an Interruptible Demand of at least 300 kW during each of the four, summer peak season months of June, July, August and September of the prior year, or, if the customer is a new customer or did not take service from the Company during the prior year at the premises which the customer desires to include on the ISOC program, customer must demonstrate, to the Company's satisfaction, that it is likely to achieve an Interruptible Demand of at least 300 kW during each of the summer peak season months of the current year.</p> <p data-bbox="196 1293 1297 1766">Customers receiving service under the less than ten-minute notice provision of this schedule must provide the Company with physical control of their interruptible load. Physical control for purposes of this schedule shall include control <u>either</u> through a Company switches <u>and/or</u> control through the customer's Energy Management System (EMS), <u>as more specifically set forth in the Physical Control section. EMS is defined broadly to be any automatic customer-owned or leased system capable of controlling the customer's interruptible load by means of an electronic or digital signal initiated by the Company. Before the Company will accept physical control through the customer's EMS, the customer must provide an independent engineering assessment, acceptable to the Company, demonstrating that the customer's EMS will reliably respond to Company's interruption signal. Customer must update this assessment annually on the ISOC Contract anniversary date.</u></p> <p data-bbox="513 1864 997 1890">(Continued on Sheet No. 90A)</p>	

ADVICE LETTER
NUMBER 1495 Amended

ISSUE
DATE

DECISION
NUMBER

VICE PRESIDENT,
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DATE

PUBLIC SERVICE COMPANY OF COLORADO

First Revised

Sheet No. 90A

P.O. Box 840
Denver, CO 80201-0840

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Cancels
Sheet No. 90A

ELECTRIC RATES	RATE
INTERRUPTIBLE SERVICE OPTION CREDIT	
SCHEDULE ISOC	
<u>AVAILABILITY - Cont'd</u>	
<p>In the event customer's EMS fails to control load to a level at or below the customer's firm demand, penalties will apply as set forth below.</p>	
<p>Customers receiving service under this schedule shall be billed on a calendar month basis, such that the first day of each month shall be the beginning and the last day of each month shall be the end of the monthly billing period.</p>	
<p>Customer may elect to limit interruptions to four hours (4 hrs.) in a twenty four-hour (24-hr.) period, and to waive the four-hour minimum interruption and to control interruptions through customer's EMS. These options shall be available only after the Company has developed systems to manage these programs and has tested and approved their use on a customer-by-customer basis.</p>	
<u>CUSTOMER CHARGE</u>	
<p>Each ISOC Customer will pay a monthly customer charge that will recover the direct costs associated with ISOC program implementation and administration, including both operations and maintenance expense and the ongoing ownership costs associated with any capital investments made to implement the program.</p>	
<p><u>Additional customer costs are set forth in the Phone Line Requirements and Physical Control Section.</u></p>	
<u>CONTRACT INTERRUPTIBLE LOAD</u>	
<p>The Contract Interruptible Load for each calendar year shall be equal to the median of the customer's maximum daily 1-hour integrated kW demands occurring between the hours of 12:00 noon and 8:00 p.m. Monday through Friday, excluding federal holidays, during the period June 1 through September 30 of the prior year. The Company shall calculate the Contract Interruptible Load before January 1st of each year. If the Company determines that the Contract Interruptible Load is less than three hundred kilowatts (300 kW), then the Interruptible Service Option Agreement shall terminate at the end of the then current contact term. Customers in their second through nth year on this schedule may have certain daily peak demands described above, which occur on interruption days, imputed for determining the Contract Interruptible Load for the following year.</p>	
(Continued on Sheet No. 90B)	

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DATE

PUBLIC SERVICE COMPANY OF COLORADO

First Revised

Sheet No. 90B

P.O. Box 840
Denver, CO 80201-0840

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Cancels
Sheet No. 90B

ELECTRIC RATES	RATE
INTERRUPTIBLE SERVICE OPTION CREDIT	
SCHEDULE ISOC	
<p><u>CONTRACT INTERRUPTIBLE LOAD</u> - Cont'd</p> <p>If a customer has no history or a customer anticipates that its Contract Interruptible Load during the current calendar year will exceed the prior calendar year's CIL by one hundred kilowatts (100 kW) or more, the customer may request that the Company determine its Contract Interruptible Load based on its maximum daily 1-hour integrated kW demands occurring between the hours of 12:00 noon and 8:00 p.m. Monday through Friday, excluding federal holidays, during the period June 1 through September 30 of the current year. For customers who request the Company to determine their CIL based on the current year's demand history, any increase in the credits owing, or in the case of a customer with no history, any credit owing under this tariff, will be paid retroactively in November, after the Contract Interruptible Load calculation, <u>based on the median of the customer's maximum daily 1-hour integrated kW demands</u>, is completed. Customers with no history will receive no credit until this time.</p> <p><u>CONTRACT FIRM DEMAND</u></p> <p>The Contract Firm Demand is that portion of the customer's total load that is not subject to interruptions by <u>the</u> Company, as specified in the Interruptible Service Option Agreement.</p> <p><u>INTERRUPTIBLE DEMAND</u></p> <p>The Interruptible Demand, determined by meter measurement, shall be the <u>average</u> maximum 1-hour integrated kW<u>kilowatt</u> demand used during the month, less the Contract Firm Demand, if any, but not less than zero. Interruptible Demand is measured between the hours of 12:00 noon to 8:00 p.m. Monday through Friday, excluding federal holidays.</p> <p><u>DEFINITIONS</u></p> <p><u>Number of Interruptible Hours (Ha).</u> The number of hours in the year that each customer elects as interruptible as set forth in the Interruptible Service Option Agreement. The options for Ha are 40 hours, 80 hours, and 160 hours.</p> <p><u>Capacity Availability (Ca).</u> A percentage based on the Number of Interruptible Hours (Ha) set forth in the Interruptible Service Option Agreement. The Ca applicable to each Ha option is as follows:</p> <p>(Continued on Sheet No. 90C)</p>	

C

ADVICE LETTER
NUMBER 1495 Amended

ISSUE
DATE

DECISION
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PUBLIC SERVICE COMPANY OF COLORADO

Third Revised

Sheet No. 90C

P.O. Box 840
Denver, CO 80201-0840

Second Revised

Cancels
Sheet No. 90C

ELECTRIC RATES			RATE
INTERRUPTIBLE SERVICE OPTION CREDIT			
SCHEDULE ISOC			
DEFINITIONS - Cont'd			
<u>Interruption Hours</u>			
<u>Ha</u>	<u>Ca Unconstrained*</u>	<u>Ca Unconstrained*</u>	
	<u>4 hour Minimum</u>	<u>No 4 hour Minimum</u>	
<u>40 hours</u>	<u>77%</u>	<u>76%</u>	
<u>80 hours</u>	<u>88%</u>	<u>88%</u>	
<u>160 hours</u>	<u>95%</u>	<u>95%</u>	
<u>Ha</u>	<u>Ca 4 hr/24 hr</u>	<u>Ca 4 hr/24/hr</u>	
	<u>4 hour Minimum</u>	<u>No 4 hour Minimum</u>	
<u>40 hours</u>	<u>70%</u>	<u>69%</u>	
<u>80 hours</u>	<u>77%</u>	<u>76%</u>	
<u>160 hours</u>	<u>80%</u>	<u>79%</u>	
•Unconstrained for purposes of this tariff means that interruptions may be of any duration, subject only to the applicable minimum, and, for purposes of Capacity and Contingency Interruptions may be called multiple times within any 24 hour period.			
<u>Interruption Hours</u>			
<u>Ha</u>	<u>Ca<10 Min.</u>	<u>Ca 1-hour</u>	
<u>40 hours</u>	<u>57%</u>	<u>40%</u>	
<u>80 hours</u>	<u>75%</u>	<u>55%</u>	
<u>160 hours</u>	<u>82%</u>	<u>64%</u>	
<u>200 hours</u>	<u>84%</u>	<u>67%</u>	
<u>Notice Factor (Nf).</u> A percentage based on the amount of advance notice that each customer elects to receive prior to interruption, as set forth in the Interruptible Service Option Agreement. The Nf is as follows:			
<u>Advance Notice</u>	<u>Nf</u>		
<u><10 minutes</u>	<u>202%</u>		
<u>One hour</u>	<u>100%</u>		
<u>System Loss Factors (Slf).</u> The System Loss Factors are as follows:			
<u>Delivery Level</u>	<u>Slf</u>		
<u>Secondary Distribution Voltage</u>	<u>1.0500</u>		
<u>Primary Distribution Voltage</u>	<u>1.0235</u>		
<u>Transmission Voltage</u>	<u>1.0000</u>		
<u>Avoided Energy Cost (Av).</u> The Avoided Energy Cost shall be updated annually on January 1 at the time the Company updates its Electric Commodity Adjustment ("ECA"). to reflect gas prices in the ECA.			

(Continued on Sheet No. 90D)

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VICE PRESIDENT,
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PUBLIC SERVICE COMPANY OF COLORADO

First Revised _____ Sheet No. 90D

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Sheet No. 90D

ELECTRIC RATES	RATE
INTERRUPTIBLE SERVICE OPTION CREDIT	
SCHEDULE ISOC	
MONTHLY CREDIT	
<p>The Monthly Credit shall be calculated by multiplying the Monthly Credit Rate (MCR) by the lesser of the customer's Contract Interruptible Load or the actual Interruptible Demand during the billing month.</p>	
<p>The MCR shall be revised effective January 1 each year, and shall remain in effect for the calendar year. The MCR shall vary by season. The summer season shall be June 1 through September 30, and the winter season shall be October 1 through May 31. The MCR shall be calculated separately for each customer using the following equation:</p>	
(See Exhibit LYS-)	
Summer Monthly Credit, per kW month:	
$MCR = [(\\$6.10 * Ca * Nf) + (\\$0.00142 * Ha)] * Slf * 115\%$	
Winter Monthly Credit, per kW month:	
$MCR = [(\\$6.10 * Ca * Nf) + (\\$0.00142 * Ha)] * Slf * 90\%$	
SERVICE PERIOD	
<p>Customers may sign up to join this program for the next calendar year at any time and also may elect to join the program for the current calendar year in January through May. Customers that choose the option to join for the current calendar year will have their Number of Interruptible Hours reduced to the average remaining hours for the class with the same annual hours, <u>Ca constraints</u> and notice provisions. The annual hours will not be reduced if there are no other members in the class. Company reserves the right to <u>revise this tariff to</u> eliminate certain classes and options on an annual basis <u>effective January 1</u> based on participation. Customer shall be permitted to amend or to terminate the Interruptible Service Option Credit Agreement without penalty if the Company changes its tariff to eliminate those ISOC service options that have been elected by the customer.</p>	
<p>Contracts for service under this schedule shall be for an initial two-year term, with automatic one-year renewal terms. Customers that join the program for the current calendar year will have an initial contract period of two calendar years plus the remainder of the current calendar year. Only the first current calendar year will be considered under the Trial Period Provisions of this tariff.</p>	
<p>A customer must provide the Company written six months' notice to cancel service under this schedule.</p>	
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<p data-bbox="678 371 909 396">SCHEDULE ISOC</p> <p data-bbox="196 434 584 459"><u>Trial Period Provision</u></p> <p data-bbox="196 466 1297 682">Any time during the first year of service under this schedule a customer may opt to cancel its contract by returning all monthly credits paid by the Company up until the date of cancellation. No additional payment will be assessed. Economic buy-through and Economic buy-through penalty charges shall not be refunded. Capacity Interruption penalties shall be refunded.</p> <p data-bbox="196 720 626 745"><u>EARLY TERMINATION PENALTY</u></p> <p data-bbox="196 751 1297 968">Any customer who cancels service without complying with the Service Period requirements under this schedule shall be required to pay to the Company, as a penalty, an amount equal to the product of one hundred ten percent (110%) times the customer's Contract Interruptible Load times the customer's MCR for each of the remaining months of the unexpired contract term.</p> <p data-bbox="196 974 1297 1224">In addition, the customer shall reimburse the Company for the direct cost incurred by the Company for equipment (including its installation cost, less salvage value) to measure the customer's Interruptible Demand and to interrupt the customer. The Company will waive early termination penalties if a customer has filed for bankruptcy protection or cannot be found with reasonable effort because they have left the Company's service territory.</p> <p data-bbox="196 1262 602 1287"><u>OBLIGATION TO INTERRUPT</u></p> <p data-bbox="196 1293 1297 1446">When the Company directs the customer to interrupt its available Interruptible Load for capacity and/or contingency interruptions, the customer must reduce its load to the level of customer's Contract Firm Demand, or the appropriate penalties will be enforced.</p> <p data-bbox="505 1736 987 1761">(Continued on Sheet No. 90F)</p>	

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ELECTRIC RATES	RATE
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SCHEDULE ISOC	
<p><u>ECONOMIC INTERRUPTIONS</u></p> <p>The Company reserves the right to call an Economic Interruption for one or more customers once per day when the Company believes, in its sole discretion, that calling an interruption will lower its overall system costs compared to what the overall system cost would be in the absence of the interruption. The duration of any Economic Interruption shall not be less than four hours, unless a customer has opted to waive the four-hour minimum. In addition, <u>for any customer who has less than four hours of interruption available</u>, the Company may call a single interruption equal to the customer's remaining hours available for interruption. for any customer who has less than four hours of interruption available. Customers under the less than ten-minute and 1-hour notice provisions will have at least 1-hour notice of an Economic Interruption.</p> <p><u>BUY THROUGH - ECONOMIC INTERRUPTIONS</u></p> <p>The Company will notify customers of an Economic Interruption via the contact methods identified on the Contact Information Sheet as part of the Interruptible Service Option Credit Agreement. Customers must notify the Company forty-five (45)-minutes prior to the start of an Economic Interruption if they elect to buy-through all or a portion of their available interruptible load by logging into the ISOC Web Site at the address provided on the Interruptible Service Option Credit Agreement and indicate their buy-through request for each hour of the Economic Interruption period. The ISOC Web Site shall advise customers of the Company's best estimate of the buy-through price for each hour of the Economic Interruption period. The buy-through price shall be the actual cost of buy-through energy incurred by the Company. The actual cost shall be calculated by taking the weighted average cost, as determined by the Company's Cost Calculator or its successor, plus three (3) mils per kWh, for the block of electricity used to serve the customer(s) who elected to buy-through.</p> <p>For purposes of this calculation, the Company shall assume that the block of electricity used is the highest cost block of electricity consumed in each buy-through hour. Customers who elect to buy-through the Economic Interruption must continue to buy-through all hours of the interruption period unless the Company notifies customers of an updated buy-through price for any hour of the interruption that exceeds the original estimated buy-through price for the hour in question. <u>whereupon notification of the updated estimated price</u>, any customer that elected initially to</p>	

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SCHEDULE ISOC	
<p><u>BUY THROUGH - ECONOMIC INTERRUPTIONS - Cont'd</u></p> <p>buy-through the Economic Interruption will have 15 minutes after being notified of the updated estimated price to advise the Company that such customer desires to be interrupted at the start of the next hour. Once a customer chooses to interrupt, the customer will be interrupted for the remainder of the interruption period. as determined by the Company. The minimum duration of any Economic Interruption under this Paragraph shall be four hours from the time that the Company designated when it first called for the Economic Interruption.</p> <p>If the Company chooses to extend an Economic Interruption from the original notification, all ISOC customers affected by Economic Interruption will be notified and given the opportunity to buy-through or interrupt for the duration of the Economic Interruption extension period. Economic Interruption extensions may be less than four (4) hours in duration.</p> <p>Customers may elect in provide advance election to buy-through up through a specified price. Such election shall be made no later than the last business day prior to the first day of the month to which the election will apply and shall be delivered to the customer's Xcel Energy Service Representative by electronic mail. Any customer with a standing buy-through order shall have the option, up to forty-five (45)-minutes before the start of an event<u>Economic Interruption</u> to advise the Company that it desires to be interrupted. Further, in the event that the buy-through price exceeds the customer-specified price, the customer may nevertheless elect to buy-through the interruption by providing the Company with the required notice up to forty-five (45) minutes before the start of an event<u>Economic Interruption</u>.</p> <p><u>FAILURE TO INTERRUPT - ECONOMIC INTERRUPTIONS</u></p> <p>In the event that any customer fails to interrupt during an Economic Interruption, the customer will be deemed by the Company to have failed to interrupt for all demand that the customer was obligated to interrupt but did not interrupt.</p> <p>The failure-to-interrupt charge shall be equal to the highest incremental price for power during the Economic Interruption plus 3<u>three</u> (3) mils, as determined by the Company after the fact, including market costs, unit start-up cost, spinning reserve costs and reserve penalty cost, if any. The charge will only apply to the portion of the load the customer fails to interrupt.</p>	
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SCHEDULE ISOC	
<p><u>CAPACITY INTERRUPTIONS</u></p> <p>The Company reserves the right to call a Capacity Interruption for one or more customers at any time when the Company believes, in its sole discretion, that generation or transmission capacity is not sufficiently available to serve its firm load obligations other than obligations to make intra-day energy sales. The duration of any Capacity Interruption shall not be less than four hours, unless a customer has opted to waive the four-hour minimum duration. In addition, <u>for any customer who has less than four hours of interruption available, the Company may call a single interruption equal to the customer's remaining hours available for interruption. of less than four hours is permitted if a customer has less than four hours of interruption available to use the remaining hours.</u></p> <p><u>CONTINGENCY INTERRUPTION</u></p> <p>The Company reserves the right to call a Contingency Interruption for one or more customers receiving service under the less than ten-minute notice provision at any time when the Company believes, in its sole discretion, that interruption is necessary for the Company to be able to meet its disturbance control standard (DCS) criteria. The duration of any Contingency Interruption shall not be less than four hours, unless a customer has opted to waive the four-hour minimum duration. <u>In addition, for any customer who has less than four hours of interruption available, the Company may call a single interruption equal to the customer's remaining hours available for interruption. In addition, a single interruption of less than four hours is permitted if a customer has less than four hours of interruption available to use the remaining hours.</u></p> <p><u>NO MINIMUM DURATION OPTION</u></p> <p>Any interruptible customer may waive the four (4) hour minimum duration for all of their Interruptible Load by notifying the Company in writing of such choice prior to January 1 of each year. The customer's choice shall be effective for twelve calendar months commencing January 1 following the Company's receipt of written notice of the waiver.</p> <p>The Company retains sole discretion to determine the duration of the interruption that it requires from such customers that have waived the four (4) hour minimum duration.</p> <p>(Continued on Sheet No. 90I)</p>	

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<p data-bbox="678 369 909 394">SCHEDULE ISOC</p> <p data-bbox="196 434 1229 459">FAILURE TO INTERRUPT - CAPACITY & CONTINGENCY INTERRUPTIONS</p> <p data-bbox="196 466 1297 873">In the event a customer who is directed to interrupt fails to interrupt during a capacity or contingency interruption, <u>in full accordance with the terms of this tariff</u> the customer shall pay the Company fifty percent (50%) percent of the customer's expected annual credit for all demand that the customer was obligated to interrupt but did not interrupt. The penalty will apply only to the portion of the load that the customer fails to interrupt. After the customer fails to interrupt twice, the Company shall have the option to cancel the Interruptible Service Option Agreement. If the contract is cancelled, the customer shall not be eligible for service under this rate schedule for a minimum of one year, and the customer will not be liable for the Early Termination Penalty.</p> <p data-bbox="196 879 1297 1222">For determining compliance after capacity and contingency interruptions, the first and last fifteen-minute interval of each event shall not be considered. If a customer's violation for a capacity or contingency interruption is less than 60 minutes in duration not including the first and last control period intervals, then the customer's penalty shall be reduced by 75% if the violation is 15 minutes or shorter, shall be reduced by 50% if the violation is 16 to 30 minutes in duration and shall be reduced by 25% if the violation is 31 to 59 minutes. This provision does not apply to Economic Interruptions.</p> <p data-bbox="196 1228 1297 1701">If a less than ten-minute notice option customer utilizing equipment where Public Service physically controls the customer's load through the operation of a Company installed, operated and owned disconnect switch, <u>violates a capacity or contingency interruption</u>, the customer shall not be penalized unless evidence of tampering or bypassing the direct load control of the company is in evidence. If tampering or bypassing the direct load control of the Company is evident, the Company may remove the customer from the less than ten -minute notice option and place the customer on the one-hour notice option rate for a minimum one-year period. The customers' credits shall be adjusted accordingly. In addition, the customer shall pay 50% of the annual credit rate times the amount of load that the customer failed to remove as a penalty.</p> <p data-bbox="505 1799 987 1824">(Continued on Sheet No. 90J)</p>	

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SCHEDULE ISOC	
<p><u>FAILURE TO INTERRUPT - CAPACITY & CONTINGENCY INTERRUPTIONS - Cont'd</u></p>	
<p>If a less than ten-minute notice option customer utilizing equipment where Public Service provides a signal to the customer and the customer's equipment is used to reduce load violates a capacity or contingency interruption, the customer shall pay 50% of the annual credit rate times the amount of load that the customer failed to remove as a penalty and in addition the Company may remove the customer from the less than ten-minute notice option and place the customer on the one hour notice option rate for a minimum one-year period. The customer's credits shall be adjusted accordingly.</p>	
<p><u>PHONE LINE REQUIREMENTS</u></p>	
<p>All ISOC customers will be required to install a dedicated analog phone line to the meter location. The customer's phone line must be installed and working before the customer may receive service under this tariff. The Company may elect to obtain the phone line for less than ten-minute notice customers with the cost charged to the customer.</p>	
<p>Customers shall be notified by email when their phone line used to communicate interruptions to the Company's Remote Terminal Unit is not working. Customers must repair the phone line within two (2) weeks of notification. <u>If a less than 10-minute notice ISOC option customer the customer</u> does not repair the phone line within two (2) weeks of notification by the Company, <u>the customer less than ten minute notice ISOC option customer</u> shall be moved to the one-hour notice option until the phone line is repaired and tested. The customer's credits shall be adjusted accordingly. In the event that the Company issues a capacity or contingency interruption during a time in which the customer's phone line is not working, all applicable penalties shall apply if the customer fails to comply with the interruption.</p>	
<p><u>PHYSICAL CONTROL</u></p>	
<p><u>For those customers who select the less than ten minute notice ISOC option there are two sub options.</u></p>	
<p>(Continued on Sheet No. 90K)</p>	

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<p>PHYSICAL CONTROL - Cont'd</p> <p>1. Customers may choose to utilize their own EMS automated intelligent equipment to reduce load down to the Contract Firm Demand level when requested by the Company. An EMS is defined broadly to be any automatic customer owned or leased system capable of controlling the customer's interruptible load by means of an electronic or digital signal initiated by the Company. Before the Company will accept physical control through the customer's EMS, the customer must provide an independent engineering assessment, acceptable to the Company, demonstrating that the customer's EMS will reliably respond to Company's interruption signal. Customer must update this assessment annually on the Interruptible Service Option Agreement anniversary date. Customer will pay for the cost of a remote terminal unit (RTU) that will receive the interruption and restore signals via phone or cellular communication. The RTU shall be designed, purchased, installed and tested by the Company or Company contractor at the customer's expense. The customer must demonstrate that their automated intelligent device/equipment will receive the Company's signal and automatically act upon that signal to remove load down to the Contract Firm Demand Level within a time period to be specified in the Interruptible Service Option Credit Agreement. A \$1,000 non-refundable deposit is required to perform the engineering and design work required to determine the costs associated with purchasing and installing the RTU. In addition a customer selecting the EMS option must pay the cost of a telephone line.</p> <p>2. Customers may choose to utilize a Company owned and operated switch to remove their entire load during a capacity or contingency interruption. The customer must pay for the cost of the company-owned switch and RTU that will receive the interruption and restore signals via phone or cellular communication, and that will lock the customer's load out during a capacity or contingency interruption. The remote terminal unit shall be designed, purchased, installed and tested by the Company or Company contractor at the customer's expense. A \$1,000 non-refundable deposit is required to perform the engineering and design work required need to determine the costs associated with providing the Company physical control over the customer's load. A minimum of 6 months is required to design, order, install and test the required equipment to give the Company control over the customer's load. During a capacity or contingency interruption, the Company shall lock out the customer's load to prevent the customer from terminating the interruption before release. Sub-Option 2 is not available to customers receiving secondary service from the Company.</p> <p>(Continued on Sheet No. 90L)</p>	

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<p data-bbox="678 373 909 399">SCHEDULE ISOC</p> <p data-bbox="196 436 636 462"><u>PHYSICAL CONTROL - Cont'd</u></p> <p data-bbox="196 468 1297 955">All customers who select the less than ten-minute notice option shall submit to equipment testing at least once per year at the Company's discretion and provided no other capacity or contingency events occurred in the past 12 months that could be used to verify the correct operation of the disconnect equipment and RTU. Equipment testing may last less than the four-hour duration and may shall not count toward the customer's Annual number of Interruptible Hours (Ha). Before joining the rate taking service under the ISOC schedule, the customer must complete a verification test to prove their load will drop off in less than ten minutes notice and must also demonstrate that their load is physically locked out by the Company's remote terminal unit to prevent their interruptible load from being restoring before the restore signal is received.</p> <p data-bbox="196 995 600 1020"><u>LIMITATION OF LIABILITY</u></p> <p data-bbox="196 1026 1297 1276">In addition to limitations of liability contained elsewhere in the Company's tariff, customers who elect to take service under the ISOC program shall agree to indemnify and save harmless the Company from all claims or losses of any sort due to death or injury to person or property resulting from interruption of electric service under the ISOC program or from the operation of the interruption signal and switching equipment.</p>	

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