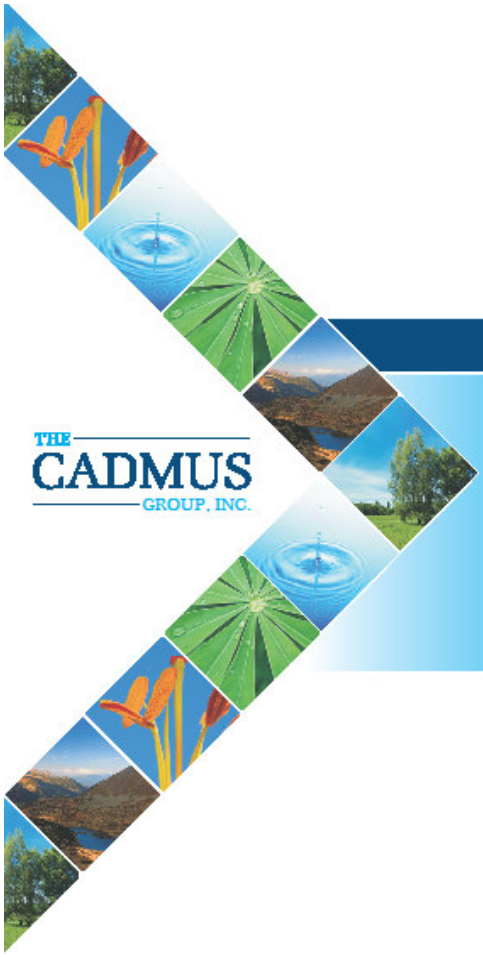

REPORT

PROCESS EVALUATION OF XCEL ENERGY'S SAVER'S SWITCH PROGRAM

December 10, 2009

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January 15, 2010

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Executive Summary

This report summarizes a process evaluation conducted by The Cadmus Group, Inc. (Cadmus) of Xcel Energy's Saver's Switch program (the program). The program's primary objective is to provide system level load relief at peak demand periods. This load relief is accomplished by controlling residential and business program participants' central air conditioners with a remote-controlled switch device installed on each unit.

This evaluation primarily focused on: determining the effectiveness of current program attributes, delivery, and marketing approaches; evaluating participant satisfaction and decision making regarding program participation; identifying participation barriers; and profiling prospective participants. The evaluation findings and conclusions were informed by an array of data collection activities, including: a literature review; staff interviews; Heat Ventilation Air Conditioning (HVAC) contractor focus groups; surveys of other utility programs; and surveys of participants, nonparticipants, and participants who withdrew.

Key Findings

Based on data collected through this evaluation, Cadmus found the program operates successfully and has a history of achieving its participation and demand response goals for all regions and program years, with a single exception, the 2008 program year in Colorado. Participants have been very satisfied with the program and view it as a way to save money on their electric bills. Participants also reported high satisfaction levels with the enrollment and installation process, and the timeliness of receiving the billing credits.

About half of nonparticipants had, in fact, heard of the Saver's Switch program in the past, with 50% of Minnesota respondents and 42% of Colorado respondents reporting they were aware of the program.

Although the program's impact on participants' comfort levels proved to be a factor for those leaving the program, participants' drop-out rate (less than 1% annually overall) is considered acceptable given the program's success in recruiting new participants.

Business participants responded similarly to residential participants, with high satisfaction levels and similar motives for enrollment.

Bill inserts, telemarketing, and direct mail proved to be the most effective marketing and outreach channels that respondents remembered. Electronic communication methods, such as e-mail and use of a Web site, gained popularity for one-way messages from Xcel Energy participants, but interest in social media methods, such as Twitter or Facebook, remained minimal. The majority of complaints stemmed from the misconception that the program helps participants save energy. Numerous respondents were disappointed they had not seen a reduction in energy consumption or a reduction in their bills.

Cadmus also observed program staff communicate and coordinate effectively with other Xcel Energy staff, and contractors installing the switches. Program staffing and processes in place appear to be sufficient for increased participation goals in coming years. Further, the program, as established in the Minnesota and Colorado service territories, provides a worthy model for expanding the program into additional service territory states.

Conclusions and Recommendations

Key conclusions and recommendations drawn from the evaluation follow below.

Cadmus found both residential and business program participants reported high satisfaction with their program experiences. We **recommend** Xcel Energy continue their high-quality program delivery.

Based on feedback from survey respondents, Cadmus concludes HVAC contractors do not present a significant barrier to program implementation. While the focus group discussions with HVAC contractors substantiated that contractors had some influence with customers regarding the Saver's Switch program, and that influence was not always positive, survey responses indicated that HVAC contractors' contact with participants and those that left the program was minimal. Further, the negative direction of influence could not be substantiated in large numbers among respondents in contact with HVAC technicians. **Recommendation**: Xcel Energy should continue efforts to build relationships with HVAC contractors and provide them with information about the program. Also, Xcel Energy should continue to provide participants with program information to enable them to understand more about how the Saver's Switch works on their air conditioners, and thereby possibly avoid unnecessary service calls.

Program marketing analysis concludes traditional marketing approaches, augmented by a segmentation and target marketing approach, effectively promote the program. Marketing methods implemented in 2009, including bill inserts, direct mail, telemarketing, target marketing, and advertising, successfully increased participation goals in Minnesota and doubled the number of new program participants in Colorado since 2008. **Recommendation:** Given program awareness among nonparticipants around 50%**,** Xcel Energy should continue use of direct mail, bill inserts, and telemarketing as participants most often cited these channels as their encounter with the program. Promotions should be included that drive more sign-ups to the Web. This is a cost-efficient but underutilized enrollment channel.

Marketing analysis concludes marketing materials, such as program brochures and direct mail pieces, miss some information and contain unclear messaging. Customers want to know what they can expect when the switch cycles their air conditioner and how they will realize savings on their energy bills. Further, survey results show renters, an underrepresented group, and are interested in the program. **Cadmus recommends** Xcel Energy refine marketing materials to address missing information and clarify messaging around energy savings versus bill credit, and consider developing a marketing piece to target landlords and renters.

Recommendation: To resolve issues surrounding participants' understanding of how the program works, Xcel Energy should communicate more frequently with participants. With most marketing efforts focused on recruitment, participants are only reminded of their involvement when cycling is in effect or by a single line in their October electric bills. Although the program is designed for low-engagement, participants recognize a need for more program information. **Cadmus recommends** Xcel Energy enhance participant communication by including additional contact points, such as sending a reminder postcard or e-mail to participants in the spring, reminding them they are enrolled in the program and what they can expect when the switch is in cycling mode.

1. Introduction

Overview

Xcel Energy contracted with The Cadmus Group (Cadmus) to conduct a process evaluation of the Saver's Switch program (the program) to better understand customer perspectives about the program and ensure continued high performance for participation and demand response goals.

The program is a mature program in Xcel Energy's Demand Side Management (DSM) portfolio, and has operated for many years in the utility's Colorado and Minnesota service territories. The program has enjoyed robust customer participation for many years in both markets, meeting its participation goals all years, except the 2008 Program Year in Colorado.

The program is designed to provide electric demand relief when the system is at or near peak load capacity. Xcel Energy continuously monitors demand on the overall electric grid in their systems, factoring in external conditions, such as weather, which affect customers' electricity use. The switch is installed on individual customers' central air conditioners and functions as a remote controlled, on-off device for the air compressor. When peak load conditions become apparent, Saver's Switches are activated to control participants' air conditioners by turning off the air compressor for approximately[1] 15 minutes, then on again for about 15 minutes, over a period of around four hours. Such control is called "cycling." Customers participating in the program receive an annual credit on their electric bills.

Research Objectives

As outlined in the evaluation plan, this evaluation was designed to focus on the following major objectives:

- Conduct an internal review to better understand how the Program is designed and determine how effectively it is delivered.
- Determine barriers to effective program delivery among Heat Ventilation Air Conditioning (HVAC) contractors and participants cancelling or leaving the program
- Evaluate program satisfaction among current participants, and identify their motivations for enrolling in the program.
- Test alternative incentives for attracting new Program participants.
- Determine current market opportunities, including recommendations for effective marketing approaches, and, for target marketing, develop a profile of customers likely to participate.

To meet these study objectives, Cadmus' primary data collection activities included: interviews with Xcel Energy program and switch installation staff; surveys of program participants, nonparticipants, participants who withdrew; and focus groups with HVAC contractors operating in this market.

[1] Timing for the cycling periods is variable for smart switches (the majority of switches). Smart switches use an algorithm to determine

Report Overview

This report is organized into eight chapters:

- Chapter 2 describes Program activities.
- Chapter 3 summarizes the evaluation approach and data collection activities.
- Chapter 4 provides detailed survey findings on participants and nonparticipants, cancellations, and deactivations.
- Chapter 5 summarizes findings from the HVAC focus groups.
- Chapter 6 provides analysis of internal staff interviews.
- Chapter 7 highlights benchmarking analysis, comparing the program to other utilities' similar programs.
- Chapter 8 contains analysis of marketing materials.

Copies of data collection instruments are appended to this report along with as summary tables of collected data.

2. Program Description

Overview

Xcel Energy's Saver's Switch Program is a direct load control program offering customers an opportunity to receive a credit on their electric bills by allowing Xcel Energy to cycle their air conditioners during peak demand periods. The program is offered to residential and business customers in Minnesota and to residential customers in Colorado. The program's primary objective is to reduce peak demand, which allows Xcel Energy to manage their energy resources and avoid paying higher fuel prices during peak periods. In the long term, by managing peak demand, Xcel Energy can continue to provide reliable electricity service and reduce the need for additional power plants. Program details for each state are detailed below.

Minnesota Residential

In Minnesota, between June 1 and September 30, central air conditioners are cycled on and off for 15-minute intervals on control days during peak demand periods (typically in afternoons through early evenings). Enrolled participants receive a 15% discount on their electric bills from June through September. Customers may also enroll their electric water heaters to receive an additional 2% discount per month for the entire year. Water heaters are cycled off during peak periods for six to eight hours (typically late mornings and evenings on hot summer days and cold winter afternoons).

Minnesota Business

In Minnesota, between June 1 and September 30, central air conditioners are cycled on and off for approximately 15-minute intervals on control days during peak demand periods. Participants who enroll their central air conditioners receive a $5 credit per air conditioning ton on their June, July, August, and September electric bills. Customers with single-stage air conditioners experience cycling periods of around 15-20 minute intervals. Customers with dual-stage air conditioners experience the same cycling period for the first stage, with the second stage shed during the control period. Maximum eligible sizes are: 60 tons for a single-stage air conditioner, and 120 tons for a dual-stage unit.

Colorado Residential

In Colorado, between June 1 and August 31, central air conditioners are cycled on and off for 15-minute intervals on control days during peak demand periods. The program is only available to residential customers. Participants enrolling their central air conditioners receive a $40 credit on their October electric bills.

Program History

In 1990, Saver's Switch Program launched in Minnesota and targeted residential customers. In 1994, the program extended to business customers. Currently, Minnesota has about 320,000 residential participants, representing 50% of the eligible population. In 2000, Xcel Energy began offering the program to Colorado residents and businesses; however, the business program was discontinued in 2006 due to load relief constraints. Colorado currently has 120,000 participants, representing approximately 25% of the eligible population.

Participation goals have increased throughout the program's course. In Minnesota, the 2009 enrollment goal is 10,000 new residential customers and 500 new business customers. In Colorado, the 2009 enrollment goal is 19,500 new residential customers.

Table 1. Saver's Switch Program Comparison by State

	Minnesota	Colorado
Program History	Launched in 1990	Launched in 2000
2008 Participants		
Residential	300,000	100,000
Business	13,000	N/A
Participant Incentives		
Residential Air Conditioners	15% off Energy Bill June - September	Flat $40 credit on October Energy Bill
Residential Water Heater	2% off Energy Bill Year-Round	N/A
Business Air Conditioners	$5/enrolled AC ton on June – September Energy Bill	N/A
Control Season		
All Air Conditioners	June – September	June – August
Residential Water Heaters	Year-Round	N/A
2009 Enrollment Goals		
Residential	10,000 New	19,500 New
Business	500 New	N/A

In both states, program implementation is primarily supported by Hunt Electric, which provides switch installation services. Over the years, Xcel Energy has partnered with several smaller installation firms to serve remote areas; however, Hunt Electric conducts approximately 90% of the installations in Minnesota and 100% of the installation in Colorado.

Overall, program design has changed minimally since its initial inception. To increase potential load curtailment, Xcel Energy added water heaters to the Minnesota program, offering incentives to customers who allowed their water heaters to be cycled on peak days in both winter and summer. Originally, a participant could enroll their air conditioner, water heater, or both in the program, but, in the beginning of 2008, the program was restructured, allowing participants with an enrolled air conditioner to add their water heater and receive an additional incentive. Participants may only enroll their water heater in the program if they also have a switch on their air conditioner; they may not enroll the water heater only. This change occurred because the water heater-only option was not cost-effective. In 2009, Xcel Energy increased air conditioning incentives in Colorado from $25 per year to $40 per year to improve participation.

The program has experienced frequent maintenance and switch technology changes. Initially, the program used a standard 900 MHz paging switch, but, in 1998, savings dropped as switches began to fail due to age and weather impacts. The first attempt to replace failed switches involved sending technicians to participants' homes enrolled in the program the longest (and, therefore, had the oldest switches). Based on feedback from program staff, this method proved to be costly because there was no way to pinpoint which switches were malfunctioning or broken. In 2001, Xcel Energy began using an automated meter reading system to send a remote signal to meters, confirming if the switch was functioning properly. This method of confirming switch

function improved accuracy and decreased maintenance costs. In 2003, Xcel Energy piloted new "smart switches," a 900 MHz adaptive algorithm switch, and, by 2004, smart switches were implemented exclusively. These switches provide increased technological capabilities by analyzing how customers use their air conditioner (AC), and adjusting control periods accordingly. Currently, smart switches are the only technology being installed in Minnesota and Colorado for new enrollees.

Program Elements

The Program contains multiple elements, including:

- Organization and management
- Marketing and outreach
- Implementation activities
- Technical specifications
- Program offerings
- Data tracking

Organization and Management

The program is managed and run by several departments within Xcel Energy, including program management, marketing operations, customer care, business technology consulting, market research, and switch installers.

The program manager oversees the program in all states where it is offered (Minnesota, Wisconsin, North Dakota, South Dakota, Colorado, Texas, and New Mexico). Oversight includes: program marketing, strategic planning, communication, and general oversight of all processes contributing to program goals. The program accounts for about 90% of the program manager's responsibilities. The program manager bears the primary responsibility for meeting program participation and energy savings goals.

The program assistant manages marketing materials, drafting content for bill inserts, direct mail, and other program collateral. The assistant also coordinates invoice tracking and keeps records to manage participation goals. The program accounts for approximately 85% to 90% of the assistant's workload.

The manager of DSM and Renewable Operations oversees the marketing operations team. Currently, five to seven administrative staff handle the fulfillment of Saver's Switch enrollments and service requests for all service territories. Enrollments are received from mailed reply cards, by phone (from customer care agents), and the Web site, and administrative staff synchronize record level data between the program database and Xcel Energy's customer billing database.

The DSM & Renewable Operations manager also supervises the load control staff. Load control analysts run testing via "virtual visits" to identify non-functioning switches. Load control staff receive control requirements from the Energy Markets team (in charge of monitoring, projecting, and procuring energy supply on the overall system), and make recommendations for control options, including length of control period and customer groupings, based on tariff and program parameters as needed. Load control staff operate the software equipment that generates radio and paging signals to cycle participants' air conditioners.

The DSM & Renewable Operations manager also manages the Third-party electricians contracted with Xcel Energy to install all switches in the program. In Minnesota, Hunt Electric manages a majority of the Twin Cities greater metro area installations, and, in Colorado, Hunt Electric manages all the installations. The remaining installation suppliers serve the remote regions of Minnesota. The number of installers employed varies based on the volume of installations requested. For example, Hunt Electric in Colorado, maintains a crew of two to three electricians employed year round, and increases up to 20 to 25 during the summer installation season.

A general foreman for Hunt manages installer staffing and training, tracks and monitors switch inventory, troubleshoots any technical or customer service issues, and supervises administrative staff, which coordinate installation scheduling and routing. The administrative staff schedule installations, contact the customer if an appointment is requested, and set up routing for installers.

The business technical consultant advises program management staff on technological issues associated with the switch equipment and signaling technology used to control switches. The program generally comprises about 25% to 30% of the technical consultant's workload.

Marketing and Outreach

The program currently targets residential and business customers by utilizing several marketing channels, including bill inserts, direct mail, their standard utility Web site as well as a dedicated Web site just for DSM and DR programs, and telemarketing. To determine the target market, Xcel Energy's information systems staff run queries on several variables, including billing data and dwelling type, to identify customers with central air conditioning. In addition, Xcel Energy offers limited promotions incentivizing customers to participate, such as donating $20 to a local food bank (usually around the winter holiday season). HVAC contractor outreach is used to develop alliances with contractors and educate them about the program. The marketing budget for 2009 is $600,000 in Minnesota and $1,000,000 in Colorado.

Direct mailing campaigns typically are sent out in the spring and summer months as the program begins to ramp up. Mailed brochures highlight program details, including how the saver switch functions, the benefits of signing up, and the generally minimal effects on comfort. All direct mailings and bill inserts provide information on how to sign up, including customer service phone numbers, the Web site address, and a detachable postcard for enrollment purposes. Recently, Xcel Energy has developed a new segmented strategy for targeting interested customers via mailing campaigns. This segmented approach offers different promotional incentives to four specific customer groups (young professionals, families, seniors, and a control group) and shows a variation in the responsiveness of each group. Xcel Energy plans to expand the segmented marketing approach in the future to improve the effectiveness of marketing efforts.

Telemarketing is another marketing strategy employed by Xcel Energy. Cold calls are outsourced via a third-party contractor, CustomerLink. Calls are made to current Xcel Energy customers, and program details and benefits are explained. If a customer is interested, an installation date is scheduled, and a letter confirming installation is mailed.

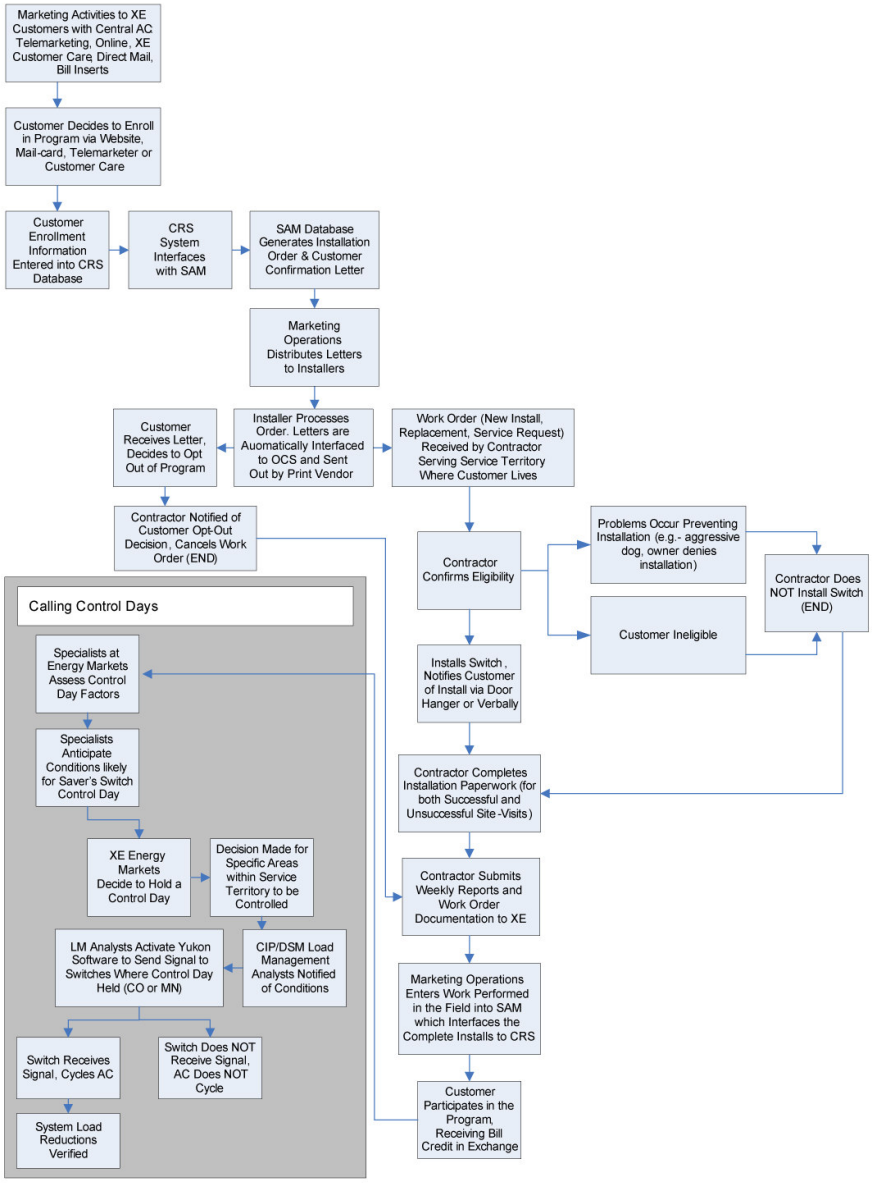
In addition to recruiting new participants, Xcel Energy conducts outreach to HVAC contractors. Hunt Electric conducts the installations; however, when customers need HVAC maintenance,

they often rely on local HVAC contractors. In many cases, HVAC contractors are unaware of the program or find the Saver's Switch to be a hindrance to their work, which can lead to disconnection of the Saver's Switch. Xcel Energy is working to create awareness of the program among contractors and to educate them about how the switch functions by creating Q &A brochures and conducting outreach activities. For example, in 2008, Xcel Energy hosted a number of contractors at a Colorado Rockies baseball game to help foster a cooperative relationship.

Implementation Activities

Implementation activities include: marketing, customer enrollment, and cycling air conditioning units. The process flow in Figure 1 shows the succession of these activities, from program start (marketing) to program end (control day).

Figure 1. Process Flow



Technical Specifications

The program recruits customers with central air conditioners to install a switch device near the air conditioning unit. The Minnesota program also has a switch to control electric hot water heaters, but incidence of electric hot water heat is low and the savings benefits minimal. This evaluation focused on air conditioning load control. On days when Xcel Energy's energy market forecasters determine electric demand will reach a high or "peak demand" threshold, they notify program staff to call what is referred to as a 'control day.' Program staff then activates the software signals the devices to cycle the air conditioning units with installed switches. Control periods are generally selected at system peak times, typically around 4:00 p.m. to 5:00 p.m., and last about three to four hours (cycling at 15-minute intervals). Utilizing Yukon software, Xcel Energy staff send radio or pager signals to manage areas controlled and control durations. Currently 50% of the switches are activated with a UHF radio signal at 153 Mhz.

Three different switch technologies are utilized through the Saver's Switch program:

1. VHF switches (oldest technology).
2. 900 MHz paging switches.
3. "Smart Switches"—900 MHz adaptive algorithm switches (newest technology).

The standard VHF switches and 900 MHz paging switches utilize older technologies. Smart Switches, adopted in 2003, utilize adaptive algorithm technology—a different method of cycling air conditioners that allows control at different levels as opposed to a simple on-off mechanism. Approximately 40% of switches in Minnesota are standard VHF switches, and 60% are Smart Switches. The Smart Switch (Figure 2) is capable of monitoring customer AC usage over time. On a control day, it can adjust the cycling time to generate a 50% reduction in customer load. If a customer has an oversized AC unit, it has a longer off cycle, approaching 20 minutes off and 10 minutes on.

Figure 2. Smart Switch

Automated meters in Minnesota also enable Xcel Energy staff to conduct 'virtual visits'—a more cost-effective way to test and check installed switches. Virtual visits utilize the automated meter reading system to determine if a switch is working. On a hot day (but not hot enough for a control day), Xcel Energy does the following to conduct a virtual visit:

1. Take a reading of a customer's meter [before].
2. Temporarily shut off a customer's AC.
3. Take another reading of the customer's meter [during].
4. Turn the AC back on.
5. Take a third read [after].

Xcel Energy then applies some logic to the data obtained to determine: a) if the AC was running; and b) if the AC was turned off during the interruption. This allows them to identify failed switches in the field. This is much more efficient and economical than going door to door to inspect switches. Virtual visits are entirely dependent on the metering technology in place.

High-efficiency air conditioner units, specifically units with variable-speed compressor drives, present problems to switch installers and switch technology in general. The variable-speed compressor drives have a function similar to a Smart Switch in that they monitor the cooling output and can self-adjust. The switch technology in use is not currently designed to adapt to variable-speed drives. When switch installers encounter these types of high-efficiency air conditioner units, they either need to refer the job to a more experienced installer (a Saver's Switch expert) or indicate the customer is not eligible for the program. Currently, the incidences of high efficiency air conditioner units incompatible with the switch are very low. Switch installers refer to one or two models that qualify as incompatible, but they rarely encounter them. Xcel Energy technical staff would be interested in information about the saturation of these incompatible models, but they currently do not have an information source that would provide specific data. This information may be accessible for someone with a networking relationship with major AC manufacturers, however, sales level data is often protected and may be difficult to obtain.

Incentive Structure

The incentive structures differ from Colorado to Minnesota, and from the residential to business sectors. Minnesota residents participating in the program receive 15% off their electric energy charges from June through September. If the participant has a water heater enrolled in the program, they receive an additional 2% discount on their monthly bills throughout the year. Additional discounts are not given if a household has more than one air conditioner enrolled.

Businesses in Minnesota receive a discount of $5 per air conditioning ton on their June, July, August, and September electric bills. Single stage air conditioners must be 60 tons or less, and dual-stage units must not exceed 120 tons.

In Colorado, residents participating in the program receive a $40 credit, up from $25 in 2008, on their October electric bills. Participants must be enrolled by August 1 to receive the incentive.

Participants are encouraged to stay enrolled throughout the lifetime of the air conditioner; therefore, there are no caps on the amount of incentives a participant can receive, and no limitations on length of enrollment.

Data Tracking

Program data resides primarily in two databases: "Customer Response Solutions" (CRS), the main customer billing database; and "SAM[2]," a program-specific database. When customers enroll in the Program, they are entered as Saver's Switch participants in the CRS system. This ensures they receive the billing credit. CRS, however, has very limited flexibility in terms of program detail level information, as it primarily was designed to capture billing and payment information. The SAM database is used to capture program-specific information, generate the letters that notify customers of the installation, and upload participant data to the Yukon software (which is used to send the load management signals). Regular "mismatch" reporting is generated to reconcile the two databases.

Market Barriers

The program experiences several barriers affecting the success of its implementation. Although closely interrelated, program barriers exist at all program phases. These include Marketing, participation and information barriers, and installation and technology barriers.

Marketing Barriers

When conducting marketing campaigns, it is difficult to accurately identify customers with central air conditioning and ensure the marketing efforts are reaching these customers. Although Xcel Energy has conducted a billing analysis to identify customer usage patterns that indicate the likely presence of a central air conditioner, results of these analyses have proven inconsistent over time and are not precise enough to identify current participants, for whom the presence of central air conditioning has been verified. In addition, due to the program's success in Minnesota, the potential participant pool is shrinking as a greater number of customers choose to participate, making it increasingly difficult to reach program participation goals.

Participation and Information Barriers

Lack of information gives rise to barriers as customers consider participating in the program. Several respondents said they just needed more information about the program. "*I guess I need a more detailed explanation of how it runs, of what would happen, of the savings -- would it save me money or you money*?"

Many respondents do not see the "need" for participating because they do not use their air conditioner very often. In some cases, the customer may have misperceptions about how the program operates. For example, some customers think they must pay for the switch or be present for its installation: (I might participate if) "*it could stop the need for installation expense*."

Other customer misperceptions relate to the program's technology. Some potential participants think the switch might shorten the life of their air conditioner or the switch completely turns off the air conditioner for several hours. For example, one respondent commented that in order to consider participating, s/he would need assurance that "*the life of your A/C is not impacted by a switch*." Additionally, customer concerns about comfort levels affect participation; however, increasing information available to the customer with health or medical issues may not necessarily lessen this barrier.

[2] Program staff could not remember if SAM was an acronym or if it was, what terms the acronym abbreviated.

Installation and Technological Barriers

Once a customer decides to participate and the switch is installed, technological barriers, lack of information, and communication barriers continue to pose a challenge for sustained participation. If switches are malfunctioning and customers are unaware of the problem, the program generates fewer savings. If a malfunction is identified by a participant, and Xcel Energy's customer care center is contacted, the customer care representative may not be equipped with a sufficiently extensive troubleshooting script to remedy the problem, leaving the participant dissatisfied and less likely to continue participation. In other cases, participants will forget they are enrolled in the program and become concerned when their air conditioning unit cycles off, causing the customer to think their air conditioner unit is not functioning correctly. This usually results in the customer contacting an HVAC contractor to come look at their "malfunctioning" air conditioner unit.

Many HVAC contractors are unaware of the program details and do not fully understand the switch technology used to cycle air conditioners on and off, which poses a problem when they are called to service "malfunctioning" air conditioners. This lack of knowledge leads to misinformation being transferred from the HVAC contractor to the participant and may lead to the switch being disconnected or removed completely without notification to Xcel Energy. Thus, the lack of information available to HVAC contractors was considered a major barrier to program participation[3].

Hidden costs to the utility and to the customer decreases long-term participation and the program's cost-effectiveness. If there is a problem with the switch or with a customer's air conditioner unit, the remedy is often a costly service call by an air conditioner service person. Customers often bear the cost of the service call, nullifying the financial incentive they receive from being a program participant.

Logic Model

The logic model covers all activities that occur in the Saver's Switch program. As shown in Figure 3, the key activities stemming from program design include:

- Third-party contractor training
- Xcel energy staff training
- Marketing and outreach
- Control day protocols

These activities lead to outputs essential to the program's success, including switch installations, program participation, and air conditioning cycling. Over the short term, Xcel Energy benefits from reduced system load requirements. Additionally, customer awareness of the program and energy conservation increases. In the intermediate term, there is increased persistence of load reduction as well as an increase in program participation. Switch improvements stemming from switch maintenance lead to long-term demand savings. Additional long-term outcomes include a

[3] This hypothesis was found to be unsubstantiated in survey responses from participants that left the program and current participants, as HVAC contractor influence over participation in the program was considered minimal.

reduction in need for power plant and rate hikes as well as environmental preservation. Table 2 shows the linkages between the activities, outputs, and outcomes, and provides key performance indicators.

Figure 3. Program Logic Model

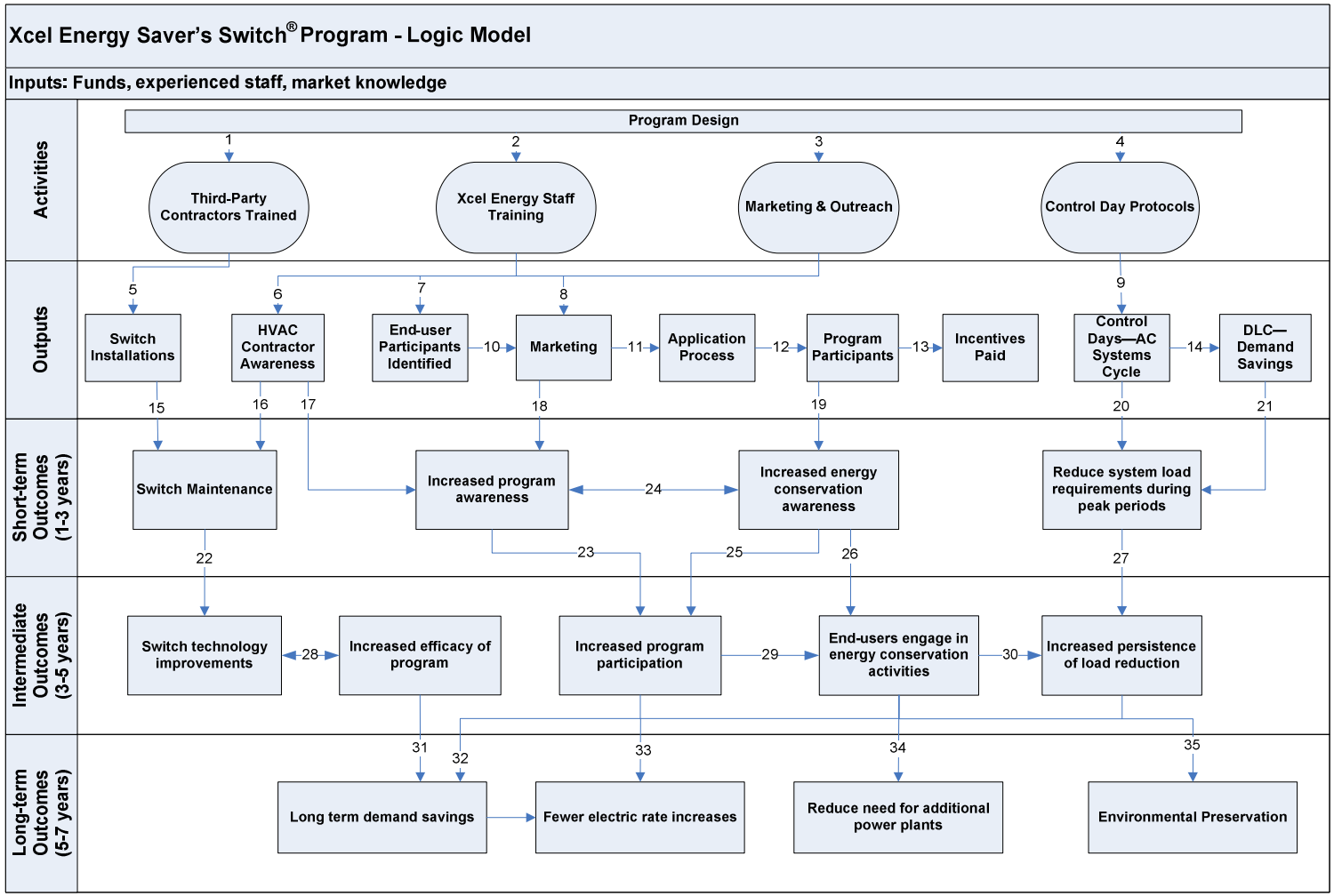


Table 2. Program Theory and Linkage Table

Link	Program Theory	Indicators
1-4	The design of a program leads to training third-party contractors and Xcel Energy staff, marketing and outreach activities, and control day protocols.	• Program design. • Number of training sessions. • Number of marketing pieces produced. • Number of outreach events scheduled. • Control day protocols.
5	Trained third-party contractors have the ability to install switches.	• Number of sites visited, switches installed. • Installation paperwork completion. • Number of trained third-party contractors.
6-8	Training provided to Xcel Energy staff on how to increase HVAC contractor awareness, identify end-user participants, and how to conduct the marketing effort.	• Number of training sessions offered to staff. • Number of HVAC contractors educated and aware of the program. • Updated list of possible end-user participants. • Number of marketing collateral pieces developed.
6-8	Marketing and outreach to increase HVAC contractor awareness, identify end-user participants, and to conduct the marketing effort.	• Number of training sessions offered to staff. • Number of HVAC contractors attending sessions. • Number of educational events held for HVAC contractors. • Updated list of possible end-user participants. • Number of marketing collateral pieces developed.
9	Development of control day protocols leads to the ability to know when and how to implement a control day.	• Control day protocols developed. • Control day successfully implemented.
10	The identification of end-user participants enables market efforts to directly target potential participants.	• Number of potential end-users with AC. • Number of marketing collateral pieces developed.
11	The ability to market to potential participants allows the application process to begin.	• Number of marketing collateral pieces developed. • Applications submitted. • Number of problem calls about the application.
12	The processing of applications enrolls participants in the program.	• Number of participants enrolled in the program. • Number of applications received.
13	Enrolled participants receive incentives for participating in the program.	• Number of incentives paid. • Monetary value of incentives paid. • Number of participants.
14	On control days, the system cycles AC systems and generates demand savings.	• Load system reduction targets (KW) met a control day.
15	The installation of switches triggers the need for switch maintenance.	• Number of visits to participants to maintain the switches. • Number of switches replaced. • Number of malfunctioning switches. • Number of switches that do not cycle AC when a control day is in effect.
16	HVAC contractor program awareness leads to decreases in service calls to participants' sites for malfunctioning switches or ACs.	• Number of switches uninstalled by HVAC contractors. • Number of calls for maintenance of switches due to malfunctioning switches.
17	HVAC contractor program awareness increases potential participant awareness of the program.	• Number of contractor training sessions. • Number of marketing collateral pieces developed for contractors. • Number of HVAC contractor enrollment referrals.

Link	Program Theory	Indicators
18	Marketing efforts result in increased program awareness.	• The number of participants who report remembering details of how the program was marketed. • The number of nonparticipants who report knowledge of the program.
19	Participation in the program increases energy conservation awareness among participants.	• Energy-saving measures installed by participant. • Additional behavioral actions taken by participants. • Decreased energy usage by participants, as shown by billing analysis results.
20	The implementation of control days reduces system load during peak periods.	• KW demand during peak hours on a control day.
21	Direct load control demand savings reduces system load during peak periods.	• KW demand during peak hours on a control day.
22	The need to maintain switches and the number of malfunctioning switches leads to the installation of "smart switches" (i.e., higher technology switches).	• Number of "smart switches" installed.
23	Increased program awareness leads to increased program participation.	• Number of participants. • Number of survey respondents indicating they are aware of the program.
24	Increased program awareness leads to increased energy conservation awareness.	• Number of survey respondents indicating they are aware of the program and energy conservation.
25	Increased energy conservation awareness leads to increased program participation.	• Number of participants. • Number of survey respondents indicating they are aware of the program and energy conservation.
26	Increased energy conservation awareness leads to end-users engaging in energy conservation activities.	• Decreased energy usage by participants, as shown by billing analysis results. • Additional energy conserving actions undertaken by end-users, as evidenced by survey results.
27	Peak load reduction leads to persistence in longevity of load reduction during peak cooling season.	• KW demand during cooling season peak hours.
28	Improved switch technology increases program impact as all units with switches are controlled on a control day.	• Number of switches that receive signals from XE and successfully cycle participants' AC. • KW reduction on a control day.
29	Increases in program participation encourages participants to consider other energy conservation activities and behaviors.	• Additional energy conserving actions undertaken by rate payers, as evidenced by survey results.
30	End-users engage in additional energy conservation activities and behaviors, resulting in continued program participation and additional peak savings as their behaviors take effect.	• KW demand during peak hours on both control and non-control days.
31	Increased efficacy of program means all units are controlled when a control event occurs, leading to long-term demand savings.	• KW demand during peak hours on both control and non-control days.
32-35	Increased persistence of load reduction leads to a) Long-term demand savings. b) Fewer electric rate increases. c) A reduced need for additional power plants. d) Environmental preservation.	a) KW demand during peak hours on both control and non-control days. b) Rate of increase in electric rates for XE customers. c) Number of additional power-generating projects underway. d) Decreased NOx, SOx, and CO2 emissions from utility generating sources.

3. Data Collection Activities

Overview

This chapter describes the methodological approach and data collection activities conducted as part of this evaluation. As outlined in the evaluation plan, the key tasks addressed during this process evaluation were:

- Gather perspectives from Xcel Energy employees/managers regarding their experiences with the program, and identify potential gaps or process improvements.
- Determine program satisfaction, prospective target populations, and marketing opportunities.
- Measure program awareness; identify customer decision-making; participation prospects; evaluate incentives; identify process improvements for increasing program participation; and determine HVAC contractor influence.
- Identify reasons for breakage or deactivation; identify gaps in program processes and preferred incentive levels.
- Measure program awareness; gauge contractor influence on customer participation; discuss pros and cons of the Saver's Switch product and program.
- Identify what peer companies are doing with similarly designed programs.
- Understand marketing effectiveness in promoting customer program enrollment and reducing customer cancellations and deactivations.

To accomplish these tasks, our team developed a comprehensive research plan designed to provide Xcel Energy's program staff with relevant information about its target market, feedback on its current program implementation efforts and strategies, and tangible suggestions regarding new strategies and opportunities.

The major data collection activities during the process evaluation included:

1. Utility staff interviews.
2. Telephone surveys comprised of:
    a. Residential Participant and Nonparticipant Surveys (Colorado and Minnesota)
    b. Business Participant and Nonparticipant Surveys (Minnesota only)
    c. Residential Cancellations and Deactivations Survey (Minnesota and Colorado)
3. Focus groups with HVAC contractors.

Additionally, as part of this evaluation, Cadmus conducted a benchmarking study and marketing analysis. A detailed description of each data collection activity follows.

Utility Staff Interviews

To gather information about current implementation practices, challenges, and successes, Cadmus conducted in-depth interviews with Xcel Energy program staff and third-party implementation staff using structured interview guides. The primary objectives of these interviews were to evaluate the program in the following areas:

- Program history, design, and theory.
- Key aspects of program delivery.
- Identification of targeted customers.
- Customer responses.
- Issues to date in program delivery.
- Roles and responsibilities of staff and contractors.
- Lessons learned.
- Recommendations for future efforts.

Interviews focused on five key program areas: program management, marketing operations, customer care, business technology, and switch installation. Program staff within each of these areas were interviewed by Cadmus evaluators (Table 3).

Table 3. Utility Staff Interviews by Program Area and Staff Role

Program Area	Key Program Staff Role
Program Management	Saver's Switch Program Manager
	Saver's Switch Program Assistant
	Manager, Consumer Products
Marketing Operations	Manager, DSM and Renewable Operations
	Supervisor, CIP and DSM Operations
	Sr. Analyst, CIP/DSM Load Management
	Analyst, CIP/DSM Load Management
Customer Care	Call Center Supervisor
	Call Center Agent
Business Technology	Business Technology Consultant
Switch Installation	Program Installation Staff—Minnesota
	Program Installation Staff—Colorado

Cadmus developed interview questions with input from Xcel Energy. Although specific questions differed slightly depending on each person's role, interviews covered the following general topics:

- Role and responsibilities with the program
- Goals
- Program processes
- Performance

- Workload assessment
- Training
- Internal communication
- Internal reporting
- Marketing
- Participation barriers
- HVAC contractors
- Technology challenges
- Future program performance

End-User Surveys

Data collection efforts included: end-user surveys with existing program participants, nonparticipants, and with customers that either cancelled or deactivated their enrollment in the program. Table 4 shows the sample disposition for end-user surveys based on a 95% confidence level at category levels and a 90% confidence level at the state level.

Table 4. Sample Disposition—End-User Surveys

Category	Colorado	Minnesota	TOTAL
Residential Participants	200	200	**400**
Residential Nonparticipants	200	200	**400**
Business Participants	--	400	**400**
Business Nonparticipants	--	400	**400**
Cancellations & Deactivations	200	200	**400**
TOTAL	**600**	**1,400**	**2,000**

All surveys were implemented by a third-party firm, Population Research Systems (PRS). Frequencies of actual completed surveys by category are included in this report's Findings section (Section 4).

Xcel Energy provided a sample of current program participants, program nonparticipants, and customers that had cancelled or deactivated their enrollment. Interviews were conducted by PRS via random selection from the sample provided by Xcel Energy. Interviewers confirmed the respondent's enrollment status to assure they were enrolled in the program before proceeding with the survey. Further, PRS kept quotas to ensure survey respondents were evenly divided between Colorado and Minnesota.

Survey objectives varied by category (i.e., residential, business, participant, nonparticipant, cancellations/deactivations), but primarily focused on collecting data regarding the following areas:

Nonparticipant Survey Objectives

- Determine decision makers in the business (not applicable to residential sector).
- Determine awareness level of the Saver's Switch program.
- Identify preferred sources/channels of information about energy-efficiency programs.
- Identify reasons for not participating in the program.
- Assess customer decision-making processes regarding participating in the program.
- Identify the best prospects currently not participating in the program.
- Identify type of incentive most preferred—percent or fixed dollar.
- Determine incentive level that would justify participation.
- Identify areas where the program/processes/marketing can be improved to capture more customer participation.
- Quantify program saturation in the market, including untapped markets of nonparticipants.
- Determine impact of HVAC contractors on purchase decisions.
- Trends in customer energy conservation practices.
- Firmographics or demographics.

Participant Survey Objectives

- Determine decision makers in the business (not applicable to residential sector).
- Assess customer decision-making processes regarding participating in the program.
- Gauge overall satisfaction and reasons for rating.
- Gauge satisfaction with installation process.
- Gauge satisfaction with enrollment process.
- Gauge satisfaction with timeliness of bill credit.
- Identify channels/sources for information, re: Saver Switch Program (Xcel Energy vs. other sources).
- Determine type of incentive most preferred—percent or fixed dollar.
- Determine to what extent the temperature on control days is noticeably different than other days.
- Comparison of discount vs. comfort level on a control day.

- Identify the best prospective target populations for this program (characteristics and demographics, Prism NE Code).
- Identify areas where the program/processes/marketing can be improved to capture more customer participation.
- Determine opportunities to improve the application process, including online options.
- Determine impact of the HVAC contractor on purchase decisions.
- Trends in customer energy conservation practices.
- Firmographics or demographics.

Cancellations and Deactivations Survey Objectives

- Reasons for breakage or deactivation.
- Information channel/source preferences.
- Incentive preferences (types and levels).
- Program improvements.
- Comfort assessment.
- Influence of HVAC contractors.

Additionally, all end-user surveys are included in Appendix A.

HVAC Focus Group

To gain a better understanding of the influence of HVAC contractors on program participation, Cadmus conducted a total of six focus groups (each consisting of from 5 to10 participants) with HVAC contractors in Minnesota and Colorado. PRS was responsible for recruiting participants, with Cadmus staff facilitating, recording, transcribing, and analyzing the focus groups. To increase participation and reduce non-response bias, an incentive of $75 per participant was offered. The discussion with the focus group participants addressed the following primary objectives:

- Awareness of the Saver's Switch program.
- Attitudes, including levels of overall satisfaction, toward Xcel Energy in general.
- Pros and cons of the Saver's Switch (Canon manufactured) product.
- Pros and cons of the Saver's Switch program.
- Perceived pros and cons of consumer/business participation.
- Influence HVAC contractors have on consumers' decisions to participate in the program.

- Level of support for this program and other Xcel Energy DSM and energy-efficiency programs.

Xcel Energy provided a sample listing of HVAC technicians within the Minnesota and Colorado service territory. The sample was not intended to be exhaustive, nor did it assume previous participation in any of Xcel Energy's energy-efficient programs. Cadmus used the lists provided to recruit participants for the focus groups. Recruits were required to offer AC services within Xcel Energy's service territory and were selected based on their interest in participation and availability. Table 5 details the size of the HVAC technician sample and the number of recruits targeted.

Table 5. Sample Disposition—HVAC Focus Groups

	Minnesota	Colorado
Sample Size	1,634	584
Recruits targeted	30	30

With input from Xcel Energy, Cadmus developed a screener to determine whether the respondent met the participation criteria, as follows:

- Employee of an HVAC contracting company in Xcel Energy's service territory.
- Awareness of the Saver's Switch equipment.
- Ability to articulate their own point of view.
- Availability for and commitment to one of the group time periods offered.

Cadmus called contacts from the sample list and evaluated whether they met the above criteria. If they qualified, they were then invited to participate in the group.

The focus groups were held at professional market research facilities, with a mid-sized conference room format – Focus Market Research in Minneapolis, Minnesota, on June 18, 2009, and Plaza Research in Denver, Colorado, on June 23, 2009. Cadmus staff conducted the groups, and Xcel Energy staff observed through a one-way glass/mirror. Each focus group lasted 90 minutes; video and audio recordings were made of all groups.

As participants arrived, they were asked to complete a brief, written, pre-discussion questionnaire (see Appendix A). On the questionnaire, they rated: their satisfaction with Xcel Energy overall; their satisfaction with Xcel Energy's commitment to conservation and rebate programs; and the level of importance conservation and rebate programs are to them. The pre-discussion questionnaire was designed to access unbiased satisfaction and importance ratings, and to provide respondents with some privacy for their individual responses.

Marketing Analysis

In evaluating the marketing of the program, Cadmus reviewed the following program materials:

Colorado

- Residential promotional customer letter.

- Residential promotional brochure.
- Residential Q&A brochure (two versions; one is for Colorado only; the other is split with Minnesota).

Minnesota

- Business promotional brochure.
- Residential promotional brochure.
- Residential postcard.

Additionally, Cadmus reviewed the 2009 marketing plan for the program, interview findings with HVAC contractors and Xcel Energy's program, and Customer Care staff affiliated with this program. Cadmus also reviewed the promotional information about Saver's Switch on Xcel Energy's Web site.

The interview findings, marketing materials, program Web site, and marketing plan were analyzed to assess program marketing across of variety of areas:

- Creative and messaging platform
- Marketing and media mix
- Marketing schedule

The purpose of the review was to understand marketing's effectiveness in promoting customer enrollment of the program and reducing customer cancellations and deactivations.

Data Analysis

Data analysis included a mix of qualitative and quantitative methods. Qualitative analysis involved the summarizing and interpretation of interviews and open-ended questions. Quantitative analyses involved statistical analyses of survey responses using univariate or multivariate distributions and displays. Figure 4. Matrix of Objectives and Data Collection Activities provides an overview of how the major tasks for this evaluation map to the data collection activity. The marked boxes indicate which data collection activities Cadmus used to inform the study object. While basic data analysis was conducted using MS Excel, the evaluation team also used SAS to analyze participant and nonparticipant survey data.

Figure 4. Matrix of Objectives and Data Collection Activities

Study Objectives/Key Needs	Staff Interviews	Participant Surveys	Nonparticipant Surveys	Cancellations/ Deactivations Surveys	HVAC Focus Groups	Benchmarking Study	Marketing Analysis
Gather perspectives from Xcel Energy employees/managers regarding their experiences with the program and identify potential gaps or process improvements	x						
Determine program satisfaction, prospective target populations and marketing opportunities		x	x	x			
Measure program awareness; identify customer decision-making; participation prospects; evaluate incentives; identify process improvements for increasing program participation; and determine HVAC contractor influence		x	x				
Identify reasons for breakage or deactivation; identify gaps in program processes and preferred incentive levels				x			
Measure program awareness; gauge contractor influence on customer participation; discuss pros & cons of Saver's Switch® product and program.					x		
Identify what peer companies are doing with regard to specifics of this program						x	
Understand marketing effectiveness in promoting customer enrollment of the program and reducing customer cancellations and deactivations.							x

Once qualitative data were gathered around the specific areas of interest, Cadmus coded the data, giving broader conceptual labels to words or segments to represent the identified trends, themes, and points of contrast arising from the narrative data. For survey questions using a rating scale (ranging from 0-10), coded data were binned into three categories:

a. Responses ranging from 0-4 were categorized as "unlikely" (categorization depended on the variable being assessed, such as the likelihood to participate, or satisfaction with the program).

b. Responses of 5 were categorized as "neutral."

c. Responses ranging from 6-10 were considered "likely" (again, categorization depends on variable being assessed).

"Don't know" responses were excluded from analysis if they accounted for less than 25% of responses. Frequencies were calculated and reported, with the exclusion of "don't know" responses, and with the exception of a few occurrences where these responses accounted for 25% or more of the responses. These cases are noted where applicable in the findings section below.

Quantitative analyses of the survey data primarily consisted of descriptive statistics. Where sample sizes allowed, Cadmus conducted cross tabulations (see Appendix B) with their related tests of significance. In question responses where there was no statistically significant difference between respondents in Minnesota and Colorado, Cadmus reports the average between the two states. In cases where Cadmus found a notable difference between respondents in the two states, frequencies were reported by state.

4. Findings

Overview

Cadmus conducted: utility staff and program implementer interviews; end-user surveys with program participants, nonparticipants, and cancellations/deactivations; and HVAC contractor focus groups.

Cadmus, with the assistance of Population Research Systems (PRS), completed five end-user telephone surveys with different segments of program participants and nonparticipants (Table 6). The following sections provide detailed findings from the five phone surveys.

Table 6. End-User Survey Sample Disposition

Sample Plan	Residential Participants		Residential Non-Participants		Business Participants	Business Non-Participants	Former Program Participants	Total Respondents
	MN	CO	MN	CO	MN	MN	MN & CO	
Target*	200	200	200	200	400	400	400	**2,000**
Achieved	224	210	210	213	418	420	442	**2,137**

*95% Confidence level at category levels; 90% confidence level at state level.

Utility Staff Interviews

Cadmus spoke with several Xcel Energy staff members closely involved with the program's implementation. The purpose of these interviews was to better understanding how the program specifically works, the administrative aspects of the program, marketing and recruitment, the enrollment and control day protocols. Staff were also asked to identify opportunities for increasing efficiency and barriers the program currently faces.

Goals

The program tracks the number of installations, cancellations, deactivations, control days, and amount of load relief obtained by controlling air conditioners.

Some staff expressed concern that the program has been slipping in its ability to meet its participation goals (compared to previous years) due to increases in those goals. This concern partly arises from the Saver's Switch program always meeting its participation goals until last year in Colorado. After missing that goal, staff have become more sensitive to monitoring ongoing progress toward goals.

Staff reported the program was discontinued for business customers in Colorado because it failed cost-effectiveness criteria. Several staff were perplexed about how the same program could be successful in Minnesota but not in Colorado. They expressed interest in understanding more about the problems that lead to discontinuation of the program to prevent repeating the same problems and to understand if a few modifications could again make the business program viable in Colorado.

Staff are interested in exploring the reasons for cancellations and ways to reduce their rates. Notably, in 2008, as many as 15% to 20% of new sign-ups in Colorado cancelled before the switch could be installed. Cancellations create interruptions to installers' productivity, more recordkeeping work, and are costly to the program (in that installers are paid for their time, despite the switch not being installed.) The volume of cancellations represents a significant barrier to achieving program enrollment goals.

Program Processes

Cadmus discussed the program processes with Xcel Energy staff. Topics covered include:

- Inventory Management
- Workload Seasonality
- Switch Quality Control
- Indentifying Eligible Customers
- Installation Notification Letters
- Cross-Training with Rebate Processing

Inventory Management

Process improvements are made on an ongoing basis. For example, Hunt Electric indicated problems in past years with not having sufficient switch inventory available in time for installations orders placed in at the beginning of the cooling season. Marketing operations staff have since managed inventory supply to eliminate the timing concerns. Changes included

marketing operations staff ordering the bulk of anticipated switches early in spring; so installers could store and disseminate the switches as orders arrived. As part of this effort, inventory management developed regular communications between installers and program staff.

Workload Seasonality

The program's seasonality results in staff being very busy in spring and summer months each year. This is of particular concern for marketing operations staff also working with rebate processing, a role which has a similar busy summer season. Marketing operations staff are cross-trained on Saver's Switch and rebate processing, and are tasked with timely data entry for both efforts at the same time of year, creating what some staff described as an unbalanced workload and compromised efficiency.

Switch Quality Control

Saver's Switch staff have measures in place to evaluate the installed switches' ongoing performance. Virtual visits in Minnesota and sample metering (60 events per year) have been conducted to identify the functionality of installed switches. Switch failure rates have been estimated to be no greater than 10% for the entire system.

Identifying Eligible Customers

Program management staff indicated gaps in identifying potentially eligible populations for the program. Currently, an algorithm used on the billing database identifies customers who (by their usage patterns) appear to have Central AC. Analysis results are not consistent from year to year, and they lack precision for identifying current program participants. This lack of precision has led to inefficiencies in effectively marketing to appropriate customer groups. Another concern is for how "program penetration" has been measured, given the imprecision in determining the base of eligible customers. Refining the method used to identify potential program participants will enable more effective target marketing.

Installation Notification Letters

Hunt Electric staff expressed interest in having greater input into the content for installation notification letters going to new participants. Hunt staff often are inundated with calls when a large batch of letters (several thousand) have been sent to announce the pending switch installation. This volume of calls affects their ability to process switch orders in a timely manner. Some of the call volume might be mitigated with clarifying information added to the customer installation letter or by distributing letters over a broader period of time. Hunt Electric (Minnesota) provided examples for clarifying what customers can expect regarding installation, based on calls they often receive (such as how customers can identify installers and more specific information about when they can expect installation in their homes).

Cross-Training with Rebate Processing

Marketing operations staff are cross-trained on several different programs, and their workloads are divided based on the most pressing program needs. This is a change from previous years when the program dedicated marketing operations staff. Rebates tend to be the "squeakiest" wheel, and are perceived as competing for program staff resources.

Performance

In general, staff expressed confidence as to the program running smoothly and processes in place working well, with a few exceptions. These exceptions are noted throughout the report as interviewers probed for detail behind concerns expressed, such as: "Everyone is working very hard, but they may not always work the most efficiently." These impressions are based on a long history of successfully meeting program participation goals (excepting, as noted, 2008 in Colorado, which may warrant further exploration of process gaps and inefficiencies).

According to staff, the identification of specific switches which are among the 10% needing replacement remains a challenge, primarily in Colorado. Without benefit of failure notification from customers, HVAC service providers, or remote monitoring technology, identifying prospective failing switches can be a costly endeavor.

In Colorado, incentive levels increased from $25 to $40 per year to encourage program participation. So far, response levels have increased over previous years, but it is still not known how much higher-incentive motivated customers sign up. For this evaluation, these motivations were explored through further data collection activities.

Workload Assessment

Program management and technical staff members remain relatively new (less than two years' experience with the program). However, load management, call center, marketing operations, and installation contractor staff generally have many years of experience working with the program.

While some program staff believe staffing levels are adequate, even in light of increased goals, others expressed concerns about the current workload and speculated as to whether increasing demand could present problems with delayed application processing. More than one interviewee indicated the marketing operations workload could become more manageable if roles were more narrowly defined and individuals designated exclusively as Saver's Switch staff. Currently, a few marketing operations staff who work mostly on the program have been asked to fill in on rebate processing, as needed.

In both states, Hunt Electric indicated installer staffing is adequate. Currently, plenty of qualified electricians could be brought in to fulfill the program's installation contracts. Both Minnesota and Colorado installers feel they can staff up adequately to meet the increasing installation demand.

Training

Training on the program's procedures has occurred formally and informally. Marketing operations staff have a manual specifically outlining Saver's Switch procedures. As new staff work on processing program applications, they are asked to review the manual.

Much of load management's institutional knowledge is conveyed informally, although recent efforts to document procedures are developing on an ongoing basis. Currently, only two staff members have the responsibility and authority to manage the software sending control signals throughout Xcel Energy's multistate territory. These two individuals also are responsible for managing controls for the other load-control programs. Saver's Switch accounts for about 10% to 15% of their workload. Some staff perceived providing formal staff training as another task

over and above their regular duties. “People who know what to do don’t have time to train new staff.”

Several staff referred to learning “on the job” when they first started. For the program manager, the program’s design changed when he acquired program leadership: from two program managers serving different states to one program manager overseeing all states. While the program manager had access to some institutional knowledge from previous program managers, his role required new processes and program design, for which no formal training was available. Several other staff reported similar experiences in that, when they moved into their roles, the roles changed or were new, and they played a part in defining their own roles.

Internal Communication

Communication methods are in place for several program areas, including weekly, biweekly, or monthly staff meetings with senior marketing operations staff and program management, switch manufacturers, and switch installers. These meetings have been used to review progress toward goals and to troubleshoot potential issues that may affect performance on any level. Those participating in these meetings find them useful for keeping the program in line with its goals.

Staff not included in the weekly meetings expressed a desire for greater communication, wanting, on occasion, to gain a better understanding of the “bigger picture.” Some staff expressed concerns about either not knowing who to contact when they had questions or experienced anomalies, or that the identified contact person was often too busy to respond in a timely manner. More regular updates with junior staff could provide the information they need in efforts to achieve program goals. Efficiency could be increased with improved communication between staff included in regular update meetings and those who are not. “We need to have conversations that meet both parties’ needs.”

Call center staff want more immediate access to a program staff person to help them troubleshoot more complicated issues while they are working with a customer. The call center agent indicated the most difficult Saver’s Switch question to deal with is: “Why is my AC not working?”

Agents use a troubleshooting script, but it is often difficult to identify the source of a problem. Customers often do not know what the agent is referring to, for example, when they say a “disconnect box.” The agent has to go “off script” to help sort out the problem when the customer cannot find or figure out what is being referred to. As the more complicated issues generally are about troubleshooting AC equipment problems, an installation contact may be a more appropriate choice in such instances. Call center staff would be interested in accessing technical assistance and more frequent updates on program information as changes or new policies are established.

Internal Reporting

Program data primarily resides in two databases: the main customer billing database (CRS); and a program-specific database: “SAM.” Regular “mismatch” reporting is generated to reconcile the two databases. Staff often spend a disproportionate amount of time identifying discrepancies between the data sources to reconcile outcome differences. Two databases were necessary because CRS has very limited flexibility in terms of program detail-level information, as it primarily is designed to capture billing and payment information. The SAM database contains

program-specific information and is used to upload participant data to the Yukon software (which is used to send the load management signals).

While many reasons exist for database discrepancies, staff have recently worked to eliminate some of these by establishing standards and communicating about procedures; so anyone with the ability to enter or change data will apply the same decision criteria. Staff indicated some reporting is automated in SAM, but further automation is required, and limited resources are available to develop further automation.

Technical staff expressed interest in knowing more about available program-related information. Currently, one staff member receives no reporting and neither knows what is collected nor what (if anything) might be of use for his role. Conversely, staff that have access to reporting information are not aware of what is needed beyond the reporting they already provide. Extended communication and report dissemination could likely bridge the perceived gap.

Marketing

In 2009, extensive marketing efforts have been underway to meet the increased participation goal. The program has increased all levels of standard marketing channels: advertising, bill inserts, direct mail, HVAC contractor connections, and telemarketing.

Staff indicated Colorado customers have not been as responsive as those in Minnesota. As Colorado has a comparatively shorter history with the program and the newly increased goals, the significant marketing efforts underway are appropriately allocated to reach the harder-to-contact customer base.

This year, the program manager has applied a segmentation approach to more effectively target eligible and potentially interested customers in Colorado. A mailing was generated, with different incentives targeted to four specific customer groups: young professionals, families, seniors, and a control group.

Young professionals and families were significantly more likely to respond to the mailing (and sign up for the program) than were seniors or the control group. This approach appears promising for future segmentation efforts.

Staff report the most effective marketing method, to date, for obtaining new participants has been telemarketing. Telemarketing accounts for 55% of new program participants for Colorado

Program staff would like more immediate indicators for marketing outcomes. Currently, several months are required to produce marketing materials. Program staff often have to proceed with the next marketing plan before results of the previous one can be obtained and analyzed.

As HVAC contractors are perceived to negatively effect program participation, staff hosted a group of contractors at a Rockies baseball game last year in Colorado. This action was perceived as an effective way to for build relationships with HVAC contractors.

Call center agents provide another potential recruitment source, but agents rarely promote programs proactively with customers. Agents focus on meeting customers' needs in a timely manner as needs are presented to them. The agent interviewed said he does not initiate a pitch for Saver's Switch, despite the incentives call center staff are offered to generate sign-ups. Program promotion is generally an afterthought.

An opportunity mentioned for reaching potential Saver's Switch candidates is their call to customer care for start/stop service. If the customer moves within the Xcel Energy service territory, it may present an opportunity to provide them with program information. The call center agent indicated no prompts exist in the start/stop service procedure to inquire about Saver's Switch interest or eligibility.

Staff would like to see enhanced automation for direct enrollment on the Saver's Switch Web page, reducing the amount of staff "touches" currently needed to complete the process. Data from online Web forms currently are processed by marketing operations staff, creating an added step (and occasional delays) in the customer enrollment process.

Currently, marketing efforts only focus on promoting the Saver's Switch program (in isolation), due to accounting and budget limitations. Yet, the vast portfolio of Xcel Energy DSM/ conservation programs offers opportunities for marketing collaboration. Combining marketing efforts with other programs, such as the quality AC installation and rebate programs, could offer some cost savings and expand the program's marketing reach.

Participation Barriers

There are multiple barriers to participation which include participants forgetting they are on the program, Call center staff having to trouble shoot on the phone, lack of participant information about the program.

Customers often forget they are on the program, and call Xcel Energy or an AC service technician when they find their homes are insufficiently cool. Staff see a connection with customer discomfort during cycling periods and program deactivation. This was tested in subsequent data collection efforts.

Call center agents report difficulty helping customers identify reasons their AC is not working. While the problem may or may not be related to the Saver's Switch, agents find they are often in a troubleshooting mode to help customers. Troubleshooting AC issues, while not a primary skill for call center agents, is necessary for them to provide appropriate referral information. Questions about switch equipment come up for both customers and agents in these situations. If the source of the problem cannot readily be diagnosed, a costly service call by an Xcel Energy technician or an AC service person could result.

Staff indicated the following customer misperceptions as participation barriers: they have to pay for the switch; they have to be present for the installation; the switch might shorten the life of their AC unit; and the switch completely turns off their AC (and for a longer period than advertised).

HVAC Contractors

HVAC Contractors represent a barrier to the program in that their commitment to customer service can result in disconnecting switches at the request of customers; they find working on an AC unit with a switch inconvenient; and they often incorrectly attribute AC problems to the switch.

Staff indicated HVAC contractors occasionally disconnect the Switch without notifying Xcel Energy. While this is often at the customer's request, they also tend to find the switch inconvenient to work around when servicing a unit.

Installers confirmed the switch requires five to seven minutes to restart after power to the unit has been disconnected. Although this delayed start is programmed into the switch to protect AC equipment, they suggested contractors often find the wait time inconvenient and often frustrating.

Saver's Switch often serves as a scapegoat for problems more often associated with the AC unit itself. Customers (and occasionally HVAC contractors) are quick to point at the Saver's Switch as the reason an AC unit does not work. Staff indicated some HVAC contractors are better than others at diagnosing the source of an AC problem; rarely is it associated with the switch itself.

Technology

Technology advances represent both opportunities and barriers to the Saver's Switch program.

Metering Technology

The meter reading technology used in Minnesota enables Xcel Energy staff to conduct "virtual visits," a more cost-effective way to test and check installed switches. A virtual visit is not utilized in Colorado because of the kind of electric meters installed on the majority of residences. As metering technology advances in Colorado, capabilities should advance in parallel, saving the expense associated with identifying defective or disconnected switches. While staff welcome metering changes that benefit the program, they have little influence over the timing of metering updates.

Advanced AC Technology

High-efficiency AC units—specifically units with variable-speed compressor drives—present problems to switch installers and switch technology in general. This is likely a switch manufacturer design issue that may only be fixed with new switch technology. When installers encounter these high-efficiency AC units, they either need to refer the job to a more experienced (Saver's Switch expert) installer, or indicate the customer is not eligible for the program. Incidences of high-efficiency AC units incompatible with the switch are very low. Technical staff would like to access penetration rates of high-efficiency AC units to anticipate the urgency for compatible switch technologies.

Communications Technologies

Currently 50% of switches are activated with a radio signal at 153 MHz. Staff were initially concerned the Federal Communications Commission could enact further restrictions and narrow the signal band. This could compromise the ability for the control signal to activate switches, and

has implications for the types of switches used and the methods of signaling control days. Subsequent analysis, however, indicate a narrower signal band would likely have minimal impact on the switches' performance.

Smart Grid Technologies

When asked how Smart Grid technologies could potentially affect the program, staff expressed little understanding. As Smart Grid offers the potential for both monitoring and controlling multiple household energy applications, the responses indicate an opportunity for cross-department information sharing, and an area of interest for some staff interviewed.

Future Issues

Staff are beginning to feel the effects of an increased workload due to expanding the program into Texas. The expansion involves new contractors, customers, geographies, and signaling technologies as well as multiple systems to signal the controls. Each factor adds to the complexity of the program and staff involvement.

Program participation is projected to rise due to increased marketing efforts, raising the participant incentive, and the economic downturn (as saving money has become a greater priority for customers).

Since the basis of cost effective marketing begins by defining the target market, efforts can be made in Colorado to refine the algorithms used to identify eligible customer targets. With additional data (from an appliance saturation study such as the "Home Use" study or an energy potential study, and historical billing data on those respondents) Cadmus could recommend a revised algorithm to identify prospective customers with central AC. Segmentation may also be useful for further refining the target market to customers that match the profile of current participants.

Residential Participants

As shown in Table 7, Cadmus completed 434 surveys with residential participating customers. This exceeded the original target of 400 completes by 34 surveys. Slightly over half of survey respondents lived in Minnesota (52%), and the remaining respondents lived in Colorado (48%). There was an even divide between male and female respondents in each state.

Table 7. Sample Disposition—Residential Participants

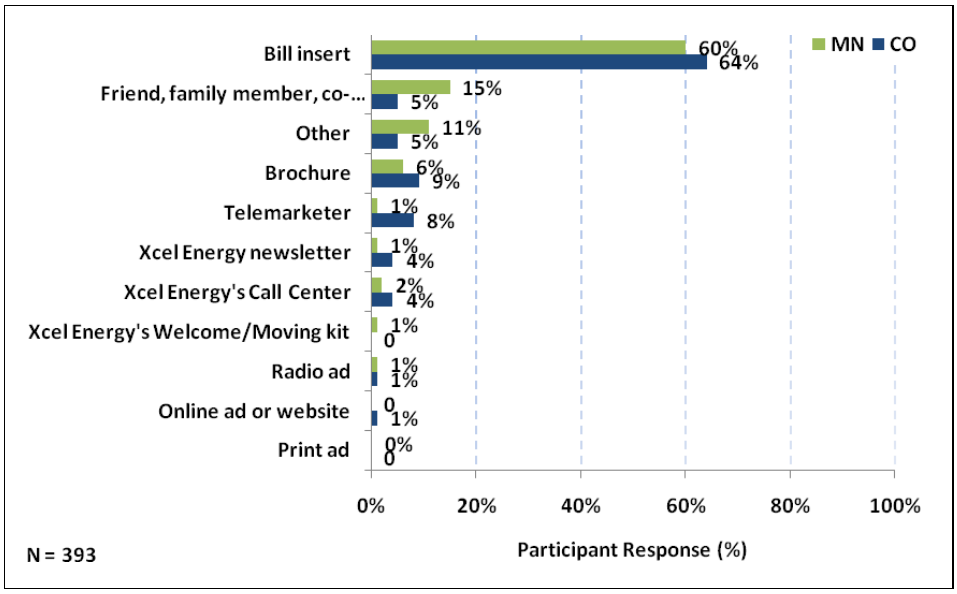
Respondent Type	Frequency	Percent
Colorado	210	48%
Minnesota	224	52%
Total	**434**	**100%**

The collecting data from the residential participant group primarily sought to assess: program satisfaction; initial sources of program awareness; methods of enrolling; interest in program features; preferences for comfort levels; interest and engagement in conservation; and basic demographics. Key findings surrounding these objectives are summarized below.

Program Awareness Source

Bill inserts were the most common way (62%) participants first heard about the Saver's Switch program. Word of mouth was the second most common source of initial program awareness, according to 10% of respondents. It may be worth noting that word of mouth was more often a source of awareness among Minnesota customers (15% versus 5% in Colorado). See Figure 5 for the most frequently cited sources of program awareness.

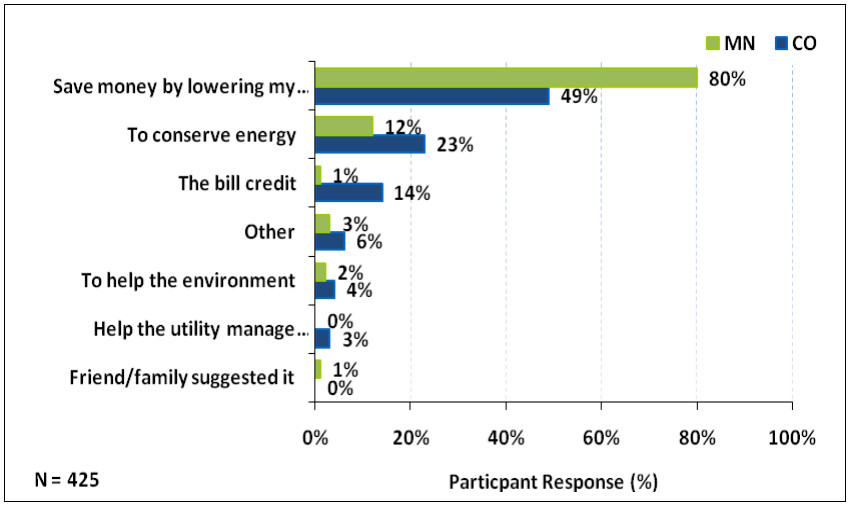
Figure 5.Participants' Source of Program Awareness



Program Enrollment Motivation

"Saving money by lowering my electric bill" was the primary reason (65% overall) participants cited for signing up for the program. This was particularly true in Minnesota, where 80% of respondents indicated that as the primary reason for enrolling, compared to half (49%) of Coloradans. The second most common reason for enrolling was to "conserve energy" (17% overall). Nearly twice as many Coloradans mentioned conserving energy (23%) as Minnesotans (12%). The bill credit was the primary motivation for only 7% of participants overall, with Coloradans significantly more likely to provide that response (14% compared to 1% in Minnesota). See Figure 6 for primary enrollment motivations among residential participants.

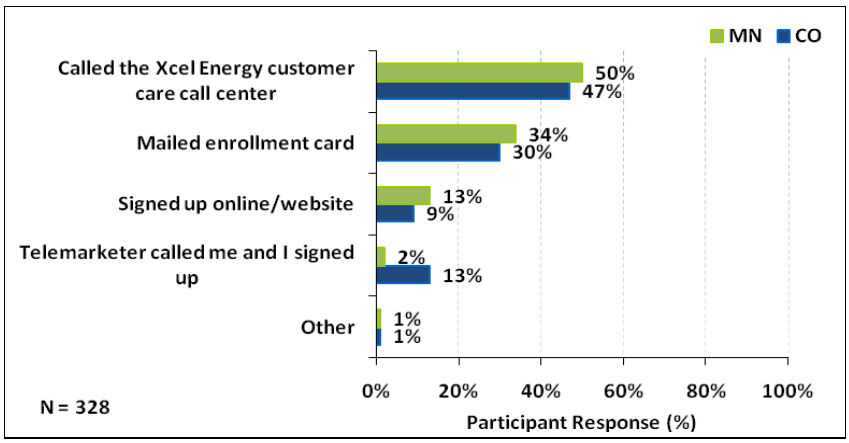
Figure 6. Primary Enrollment Motivation



Enrollment Method

Half of respondents (49%) signed up for the program by calling the Xcel Energy Customer Care Call Center. Another third (32%) signed up by mailing in an enrollment card. Enrollment cards were distributed via direct mail. Signing up online was the third most common enrollment method (11% overall). While enrollment through telemarketing ranked fourth, substantially more Coloradans (13%) signed up via telemarketing than Minnesotans (2%). See Figure 7 for the primary enrollment methods among residential participants.

Figure 7. Enrollment Method



Satisfaction

Overall, participants were highly satisfied with the program. Half of respondents (51% in both states) gave it the highest possible rating: a 10 on a scale of 0-10. Ninety percent provided a positive rating in the 6-10 range, and only 1% rated it less than 5. Respondents rating it 5 or less were asked the reason for their rating. Nearly half of those with neutral to negative ratings said they rated their satisfaction low because they were unable to see any savings on their electric bills. Another 21% indicated they "didn't notice a difference," but they did not specify what difference they referred to.

Participants consistently expressed very high satisfaction levels for three primary program components: the enrollment process, installation, and timely receipt of the bill credit. See Table 8 for residential participants' program satisfaction ratings.

Table 8. Participant Satisfaction Ratings

On a scale of 0 to 10, where 0 is very unsatisfied and 10 is very satisfied, how satisfied are you with…	Unsatisfied (0-4)	Neutral (5)	Satisfied (6-10)
The Saver's Switch program overall	3%	8%	90%
The enrollment process	0%	4%	93%
The installation process	2%	1%	95%

More than two-thirds of respondents (67%) gave the highest (10) rating for their satisfaction with the enrollment process. Ninety-five percent gave positive ratings (6-10), with the remaining 5% providing a neutral (5) rating. Participants also gave very high ratings to the installation process, with over three-quarters (76%) giving it the highest rating, and 97% positively rating their satisfaction with the installation (a 6-10 rating).

Seven percent of respondents had recently (within 2009) signed up for the program and had not yet received the annual Saver's Switch bill credit that typically appears on an October bill. Of

those who had received the credit, 91% gave the bill credit timeliness a positive rating, with 61% giving it a 10 rating.

Effects of Air Conditioner Cycling

Most participants (83%) indicated they did not notice any cycling this past summer. For the 17% that did notice, nearly one-third (32%) did not know how many times cycling took effect.

As there were no control days in 2009 for AC in Minnesota, 14% of Minnesotans were mistaken about the frequency of cycling events. In Colorado, where three control days were called, about half of those that noticed cycling overestimated the number of cycling events that actually occurred. The most common way respondents were aware of AC cycling (55% from both states) was the temperature in the house felt warmer than usual. Another way respondents indicated they knew the switch was cycling was by hearing the AC unit cycle on and off.

When participants experienced discomfort they attributed to AC cycling, most did not do anything different to manage their comfort levels. Of those who took action to manage their comfort levels, 19% said they turned on a ceiling fan; 11% tried to lower the temperatures on their thermostats; 10% shut blinds; 3% turned on a window AC unit; 1% called Xcel Energy; 1% called an AC repair technician; and 5% took miscellaneous other actions. No one reported turning off energy-using equipment, leaving the house, or attempting to disconnect the switch.

Program Features Options

To test interest levels in new or alternative program features, participants were asked to rate their interest in three options: temporarily opting out of a cycling event at least one time per summer; donating their bill credit to a charity of their choosing; and donating their bill credit to an alternative energy project. Generally participants were not receptive to the options presented. A clear majority (54% to 65%) indicated (by rating a "0") they were not at all interested in any of the three options.

Of the three features tested, the option to "opt out" of a cycling period garnered the most positive ratings (6-10 or 21%). Table 9 shows participants' ratings in response to incentives and program features.

Table 9. Participant Rating Responses to Incentives and Program Features

Using a scale from 0 to 10, where 0 is not at all interested and 10 is very interested, how interested are you in the following program options:	Low to no interest (0-4)	Neutral (5)	Some to strong interest (6-10)
The option to temporarily 'opt out' of a cycling period one time per summer.	65%	14%	21%
Rather than a credit to your bill, donate the money to your favorite charity.	48%	7%	15%
Rather than a credit to your bill, donate the money to an alternative energy project.	70%	14%	16%

Comfort Level

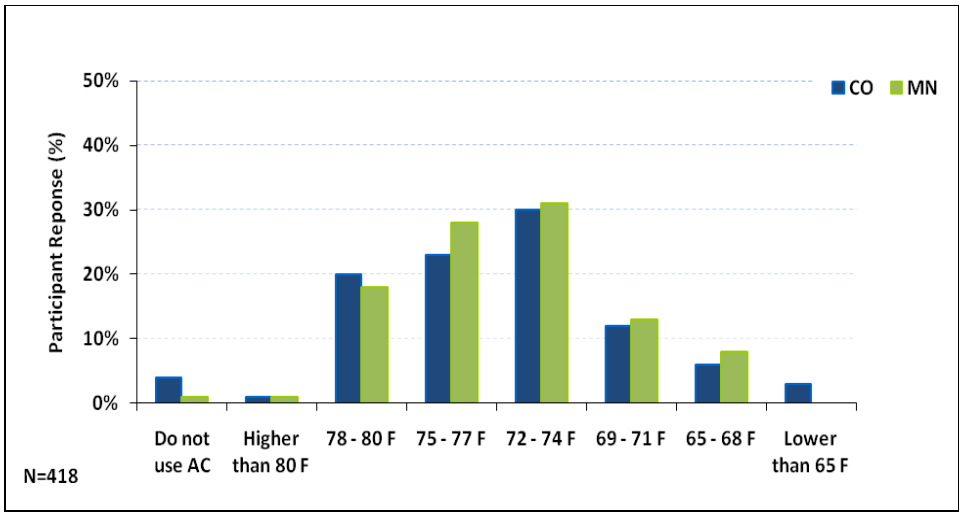
Individual preferences play a large role in how comfort was perceived and varied by survey respondent. As noted, most participants were not aware of when their AC units were cycled by

the program. A small minority, however, could detect the cycling effects and tended to identify a higher-than-preferred temperature in the house.

To understand how temperature preferences were distributed, all participants were asked at which temperature settings they typically kept the thermostat during the afternoon hours of 2:00 p.m. to 6:00 p.m. in the summer months. Over half (56%) kept their thermostats at a setting between 72 and 77 degrees, 22% kept their thermostats cooler than 72 degrees, and another 20% kept their thermostats at 78 degrees or higher. Typically, about 2% overall did not run their AC unit during afternoon hours.

Those preferring their homes cooler (71 degrees or less) were significantly[4] more likely to notice when their AC cycled than those keeping their home at a warmer temperature (75 degrees or higher). Figure 8 shows the typical summer temperature settings as reported by residential participants.

Figure 8. Participants' Typical Summer Temperature Settings



Most respondents (84%) kept their homes the same temperature on weekends as on weekdays. Thirteen percent kept their homes cooler on weekends, and 3% kept their homes warmer on weekends.

[4] A Chi-square analysis & Fisher's Exact Test yielded a p-value of 0.005.

Control Notification Preferences

Respondents indicated their preferences for five different communication methods for receiving notice their AC was being cycled. Preferences for type of communication were ranked as follows:

1. E-mail (57%).
2. Phone (52%).
3. A Saver's Switch Web page with cycling alerts (37%).
4. Message on the Saver's Switch hotline (27%).
5. Text message alert (25%).

Cooling Equipment and Service

Most respondents (96%) had not upgraded or replaced their AC units within the past year. The 4% that upgraded or replaced AC equipment may serve as a proxy for the annual AC replacement rate among program participants.

Just over one-quarter of respondents (28%) had their air conditioners serviced within the past year. Significantly fewer participants had their AC serviced than survey respondents regarding "deactivations" (participants who terminated their enrollment) at 52%. Of those who had their AC serviced, very few (12 respondents) indicated the AC technician mentioned the program.

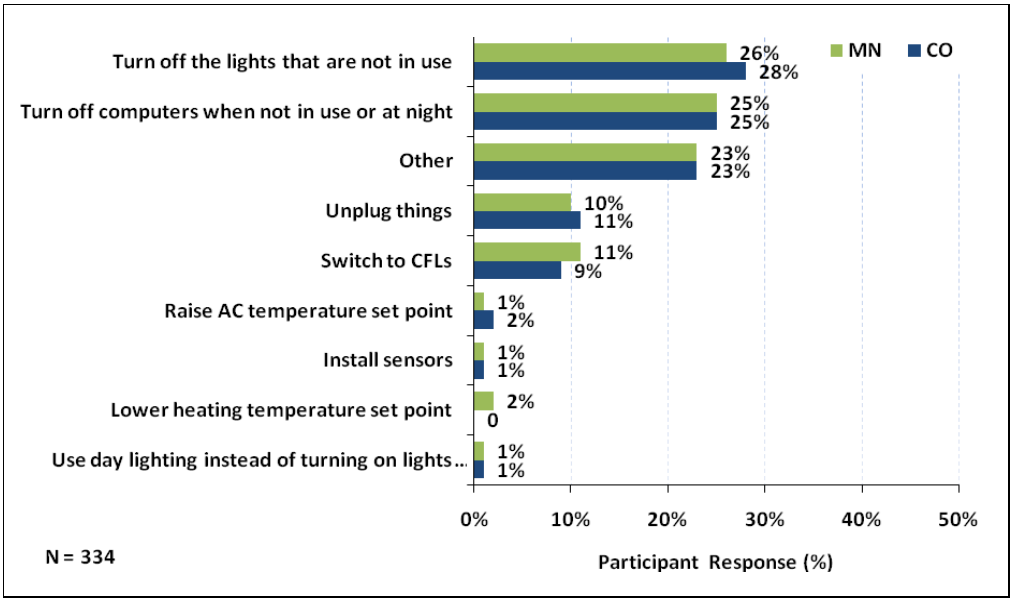
Participants that interacted with an AC technician all shared the general content of their interactions. The tone of these comments was coded and found to distribute evenly between positive, neutral, and negative. Both the frequency and negative tone of comments from AC technicians was lower among current participants compared to customers that deactivated or cancelled their program enrollment.

Energy Conservation Values and Actions

Program participants responded that, compared to other household expenses, managing their electric bill was somewhat to very important, rating importance in the 6-10 range (84%). Overall, 39% gave "managing their electric bill" the highest rating of 10.

When asked how familiar they were with additional ways to save energy in their homes, a similar proportion (83%) said they were somewhat to very familiar with ways they could save energy. In putting those values into action, over three quarters (78%) indicated they had taken additional measures to reduce energy consumption since participating in the program. The most common actions mentioned included: turning off lights and computers not in use; unplugging equipment not in use; and installing compact fluorescent lights (CFLs). Figure 9 shows the most frequently reported energy conservation actions as reported by participant respondents.

Figure 9. Participant Energy Conservation Actions



Although most respondents (84%) said they had enough information from Xcel Energy about ways to save energy, interest in other energy-saving programs offered by Xcel Energy was high, with 77% providing a 6-10 rating. Despite this high level of interest, only 10% said they had participated in other energy efficiency programs or rebates provided by Xcel Energy within the past two years. This participation rate may be somewhat understated due to some programs such as the Home Lighting program not being visible to CFL purchasers. Of those who had participated, the Home Energy Audit was the most common[5] program mentioned.

Segmentation

Xcel Energy provided customer segmentation data on each sample point using the Nielsen Claritas PRIZM Market Segmentation[6] model. A similar analysis is provided for residential nonparticipants. Codes for the 11 life stages were appended to each response record, and summary data for the Xcel Energy customer population and Saver's Switch population were also provided (**Error! Not a valid bookmark self-reference.**). According to these data, three categories make up over half (52%) of the Saver's Switch population: midlife success (22%), conservative classics (15%) and young accumulators (15%). One other category, affluent empty nests, are proportionally larger compared to the proportion of those groups in the general

[5] Note: Some programs, such as home lighting, may be somewhat invisible to customers in that rebates are provided to manufacturers, and those savings are not always clearly labeled for customers at the point of purchase.

[6] Xcel Energy has selected the Nielsen Claritas comprehensive consumer segmentation system, PRIZM for marketing segmentation across all DSM programs. For more information see the Nielsen Claritas Web site: http://en-us.nielsen.com/tab/product_families/nielsen_claritas/prizm.

customer population. These four groups represent the key prospects for participation in the program.

Table 10. Claritas Prizm Life Stage Information for Entire Saver's Switch Participant Population (N=570,711)

Segment Name	Segment #	PSCo,MNN SP,NSPWI Frequency	Percent	Saver Switch	Percent	Count per 100 Households	Index
Accumulated Wealth	F1	171,592	6.0	47382	11.2	27.61	187
Young Accumulators	F2	299,646	10.6	64128	15.1	21.40	142
Mainstream Families	F3	302,197	10.7	37768	8.9	12.50	83
Sustaining Families	F4	85,679	3	3086	0.7	3.60	23
Affluent Empty Nests	M1	213,789	7.5	47407	11.1	22.17	148
Conservative Classics	M2	276,776	9.7	62139	14.6	22.45	151
Cautious Couples	M3	206,270	7.3	32378	7.6	15.70	104
Sustaining Seniors	M4	103,017	3.6	8639	1.9	8.39	53
Midlife Success	Y1	513,820	18.1	95344	22.2	18.56	123
Young Achievers	Y2	406,440	14.3	18387	4.3	4.52	30
Striving Singles	Y3	225,890	8	7861	1.9	3.48	24

Analysis of respondent data merged with these codes indicated survey responses were proportional to the Saver's Switch population along all life stage categories.

As shown in **Error! Not a valid bookmark self-reference.**, midlife success and mainstream families are the groups most inclined to sign up for the program online. Program satisfaction appears to be higher among more mature life stages: affluent empty nests, conservative classics, sustaining seniors, and midlife success. Information about energy-saving programs would likely be most welcomed by affluent empty nesters, as a higher proportion indicated they did not have enough information about saving energy from Xcel Energy. Young achievers and striving singles are probably the least attractive program prospects as they are already underrepresented among Saver's Switch participants and are more likely to be renters.

Table 11. Participant Life Stage Characteristics

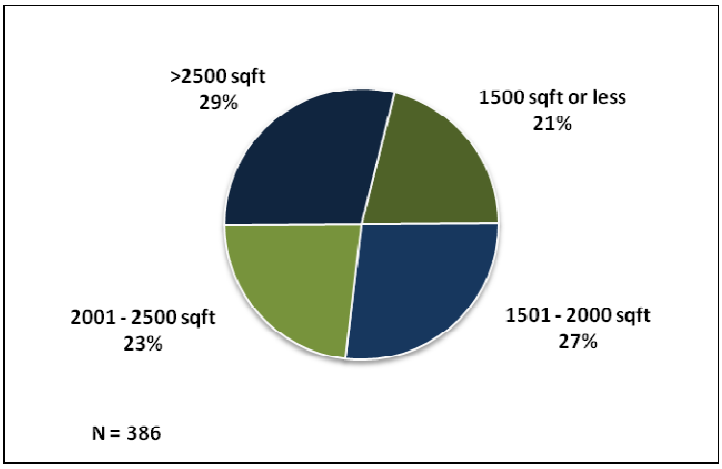
Life Stage Name	Accumulated Wealth	Young Accumulators	Mainstream Families	Sustaining Families	Affluent Empty Nests	Conservative Classics	Cautious Couples	Sustaining Seniors	Midlife Success	Young Achievers	Striving Singles
Life Stage code	F1	F2	F3	F4	M1	M2	M3	M4	Y1	Y2	Y3
Key Saver's Switch Prospects*		x			x	x			x		
Not a good fit for Saver's Switch*										x	x
Most likely to first hear about SS through a bill insert					x						
Most likely to sign up online			x						x		
Most Satisfied with SS (rating a 10)					x	x		x	x		
Most concerned about managing electric bill								x			
Most likely to need more information about saving energy					x						
Most interested in Energy saving programs									x		x
Most likely to engage in conservation behavior	x	x			x						

*Based on population analysis. All others based on survey data

Demographics

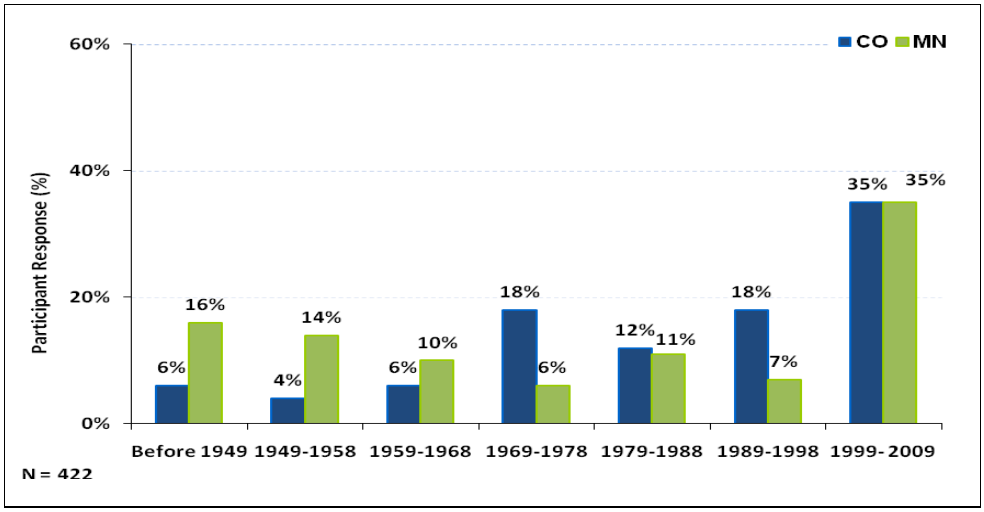
As shown in Figure 10, nearly all respondents (96%) owned their homes. The size of respondents' homes was distributed evenly from small to large, with: 21% in homes of 1,500 square feet or less; 27% in homes 1,501–2,000 square feet; 23% in homes 2,001–2,500 square feet; and 29% in homes over 2,500 square feet.

Figure 10. Size of Participant Homes



As shown in Figure 11, slightly over one-third (35%) of participants in both states lived in newer homes, constructed in 1999 or later.

Figure 11. Participant Age of Homes by State



Conclusions

Most customers' first exposure to the program was through a bill insert. Many of those seeking to enroll called the Xcel Energy customer care call center or mailed in a reply card received via direct mail. As both staffing and direct mail are resource intensive, promotions that drive customers to the Web for enrollment may result in program savings.

While finding most customers signed up for the program to save money is not unusual, a surprise was understanding more clearly how participants perceive those savings are delivered. As a demand response program, the most direct benefit of Saver's Switch to the individual participant is the bill credit they receive in October. Yet, the number one reason participants gave for enrolling in the program was "to save money by lowering my electric bill." Second to the saving money response was "to conserve energy." Participants ranked the rebate or bill credit as a distant third. Further, suggestions for program improvements included several suggestions for providing participants with a means to view how much they save through participating in the program. Several suggested a comparison of their household electric usage with and without the switch. Reasons for lower satisfaction ratings (although few) focused on the difficulty to see savings on their bill.

These responses reflected the participants' view of the Saver's Switch program as an energy conservation program. By participating, they expect to see lower bills due to using less electricity when the switch cycles. As the program was designed for load relief on the system overall at peak demand periods, the amount of conservation attributable at an individual level is very minimal. Participants with an expectation that the switch would affect a noticeable decrease on their bill expressed disappointment.

Since Minnesota participants were significantly more likely to indicate "saving money by lowering my bill" was the main reason they enrolled in the program, it may be possible they

confused the bill credit incentive of 15% off their summer electric bills with a 15% reduction in energy use. Another factor contributing to the confusion in both states may be how the Saver's Switch credit is noted on the October bill. As a single line item on one month's bill, the incentive may be easy to overlook. Although the amount of money may be the same whether it comes in a credit or reduced usage, the impression of how participants save money differs.

Despite possible confusion around how savings were realized, overall satisfaction with the program was very high. Participants seemed to appreciate that the switch was not something they notice. Even when a control day was called, the change in comfort level affected a small minority (less than 10%). To this end, participation in the program was considered a low involvement way to save a little extra money. Ratings for the enrollment process and installation process were both very high (over 90% positive). This suggests little need for improvement in the initial customer touch points.

Less satisfied respondents' improvement suggestions focused primarily on communication. They wanted to know more about what was going to happen once enrolled and several were not aware the installation had taken place. As this was a minority concern and brochures and door hangers were placed to answer these questions, it would appear the information gap, though small, could be addressed by consistent application and delivery of the information pieces already in standard use.

With satisfaction already very positive, the alternative program features tested, such as the opt-out option and alternative rebate incentives, were of little to no interest for current participants. Though some of the options may be useful for recruiting new participants, current participants were highly satisfied with the program features in place.

Residential Nonparticipants

As shown in Table 12. , Cadmus completed 423 surveys with residential customers that have not participated in the program (nonparticipants). This exceeded the original target of 400 completes by 23 surveys. Slightly over half of survey respondents lived in Colorado (50.4%), and the remaining respondents lived in Minnesota (49.6%). There was an even divide between male and female respondents in each state.

Table 12. Sample Disposition—Residential Nonparticipants

Respondent Type	Frequency	Percent
Colorado	213	50.4%
Minnesota	210	49.6%
Total	**423**	**100%**

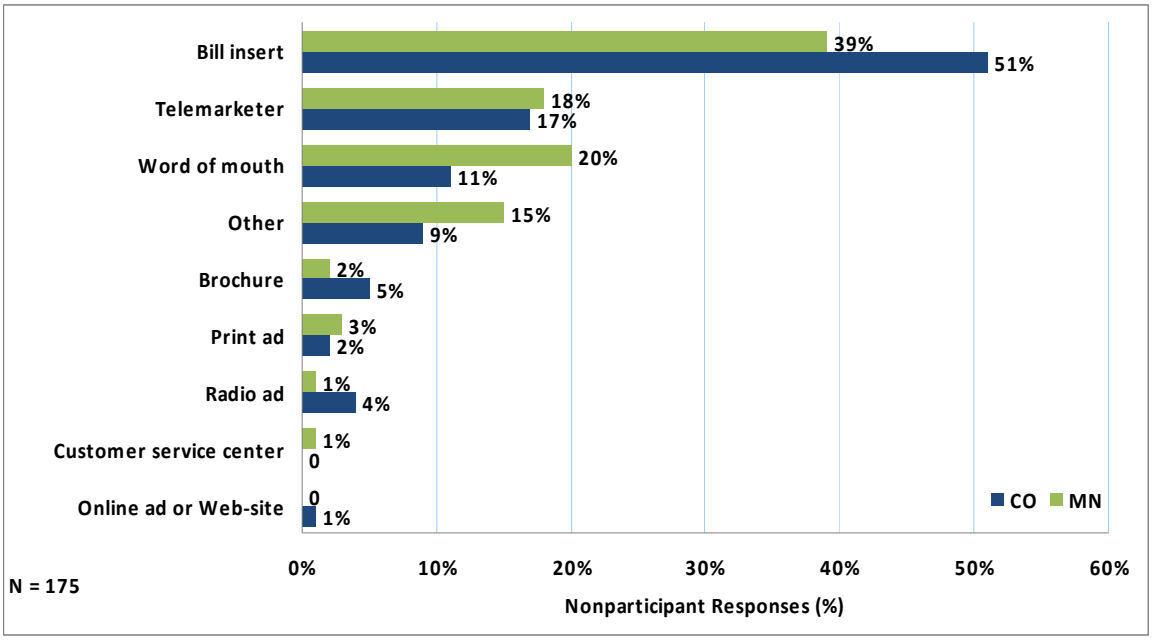
The primary objectives of collecting data from the residential nonparticipant group were: assess program awareness; identify preferred channels of information about energy saving programs; identify reasons for not participating in the program; assess customer decision-making processes regarding participation; and identify the best prospects that currently do not participate in the program. Key findings surrounding these objectives are summarized below.

Program Awareness

About half of nonparticipants had, in fact, heard of the Saver's Switch program in the past, with 50% of Minnesota respondents and 42% of Colorado respondents reporting they were aware of the program.

Of respondents that had heard of the program (n=175), bill inserts were the most common way a majority (45%) of participants first heard about the program. Specifically among Colorado respondents, bill inserts were more often a source of awareness than among Minnesota respondents (51% versus 39% in Minnesota). Telemarketing was the second most common source of initial program awareness, according to 18% of respondents. Figure 12 shows how nonparticipants (by state) heard of the program. (Note: Source in MN Word of mouth 20%)

Figure 12. Nonparticipant Program Awareness—Sources of Information



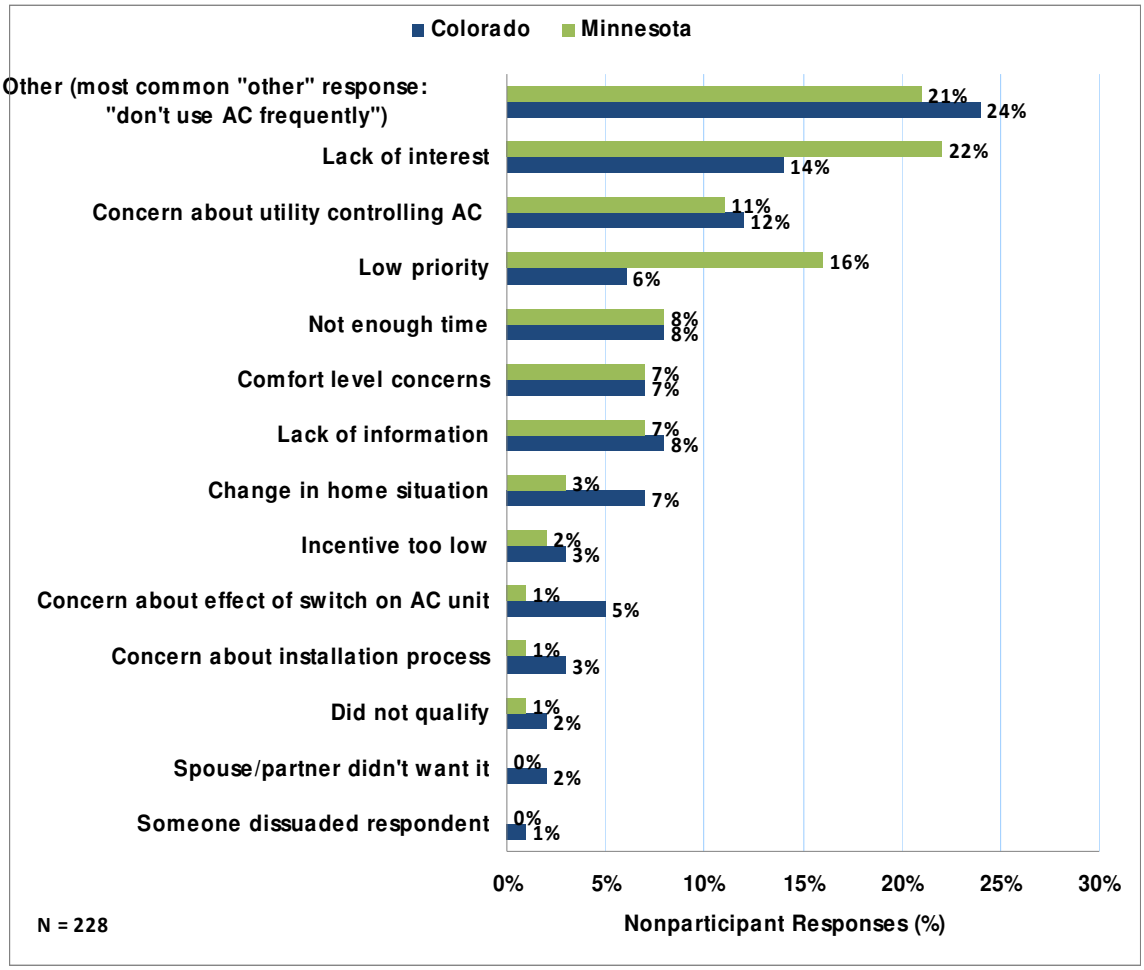
Participation

Further, of 175 respondents that had heard of the program, the majority had not considered signing up (68%). However, a third of respondents had considered doing so in the past (33%)?.

Primary reasons for not enrolling in the program included: lack of interest (18%); and concern about the utility controlling the customer's air conditioner (12%) (see Figure 13). Respondents also had multiple other responses why they chose not to participate in the program. Many were renters and either assuming they could not participate because they did not own, or they were not able to persuade the landlord to agree to having the switch installed. Additionally, many people said they did not use their air conditioning very much, or at least not regularly, during the summer months. Several respondents commented on the cooler weather they experienced last summer in particular, and said they did not use air conditioning for that specific reason.

Further, there were five cases where the respondent had either sent in a postcard to participate or had attempted to contact Xcel Energy about participating in the program, and either the installation contractor never showed up to install the switch, or the customer never heard back from Xcel Energy.

Figure 13. Nonparticipant Primary Reasons for Not Signing-Up for Saver's Switch Program (n=228)



Incentive Levels and Future Participation

Overall, about 74% (n=394) of nonparticipant respondents gave a rating of 7 or less on a rating scale of 0-10, with 10 being "very likely to participate" in the program within the next year. The remaining 26% of respondents gave a rating of 8 or higher, and were more likely to participate within the next year.

The nonparticipant survey instrument was designed so any respondents reporting a rating of 7 or less on their likelihood to participate in the program within the next year were filtered into a section of questions aimed at taking a closer look at incentive options. Respondents that had already reported they were likely to participate (rating of 8 or higher) were *not* asked the section

of incentive-level questions because we assumed, based on their reported high likelihood to participate, these respondents would participate regardless of increased incentive options.

The incentive questions asked respondents in each state about their likelihood to participate in the program if they were offered different incentives in the form of a credit on their electricity bill. Survey questions were structured so customers in each state were informed of the existing program incentive structure, then asked about their likelihood to participate on a 0-10 rating scale if the incentives were a different monthly discount in the form of a percentage (20%, 25%), and in the form of a fixed dollar amount ($50, $60). Cadmus then calculated a chi-squared statistical test to search for statistically significant differences between respondents' likelihood-to-participate scores associated with each incentive amount. Summary results for each state follow.

Minnesota

Customers in Minnesota were asked to rate their willingness to participate in the program on a scale of 0-10 if the utility offered them the following incentive options: 20% discount on their monthly bill from June to September; a 25% discount on their monthly bill from June to September; $50 single-time credit on October bill; and a $60 single-time credit on October bill.

Table 13 shows the percentage of Minnesota respondents likely, neutral, and unlikely to participate in the program for the given incentive amounts. Percentages in the table show respondents were more likely to participate in the program when offered the higher incentive. However, given these percentages were seemingly close to one another (only 7 percentage points difference between a 20% and a 25% discount; and a 5% difference between a $50 and a $60 credit), Cadmus calculated a chi-squared statistical test to see if a statistically significant difference existed between discount options in terms of respondents' likelihood to participate in the program.

The results of the chi-squared tests showed there was *no statistically significant difference* in respondents' likelihood to participate between Xcel Energy offering 20% discount and a 25% discount, C^2 (2, n=148) =0.26, p > 0.05.

Further, there was *no statistically significant difference* in respondents' likelihood to participate between Xcel offering $50 bill-credit and a $60 bill-credit, C^2 (2, n=148) =0.61, p > 0.05. These results are shown in Table 13.

Table 13. Minnesota—Nonparticipants Likelihood to Participate Based on Incentive Currently Offered (n=148)

Incentive	Likelihood to Participate			Chi-Squared Test
	Unlikely (0-4 Rating)	Neutral (5 Rating)	Likely (6-10 Rating)	Statistically Significant Difference?
20% monthly discount	29%	11%	60%	**Between 20% and 25%: NO**
25% monthly discount	26%	7%	67%	
$50 single-time credit	41%	11%	48%	**Between $50 and $60: NO**
$60 single-time credit	36%	11%	53%	

In addition to testing for differences between discount levels, Cadmus tested for differences between percentage and single-time dollar amounts. Results showed there was *a significant difference* between respondents' likelihood to participate when offered a percentage versus a dollar amount, C^2 (2, n=296) =0.00, $p < 0.05$. As shown in the summarized results in Table 14, nonparticipant respondents were significantly more likely to participate when offered a percentage amount (63%) versus a dollar amount (51%). The percent discount is currently the incentive format used in Minnesota.

Table 14. Minnesota—Comparison of Nonparticipants' Likelihood to Participate with a Percent vs. Dollar Discount (n=296)

Incentive	Likelihood to Participate			Chi-Squared Test
	Unlikely (0-4 Rating)	Neutral (5 Rating)	Likely (6-10 Rating)	Statistically Significant Difference?
% monthly discount	28%	9%	63%	Between % and $: YES
$ single-time credit	39%	11%	51%	

Colorado

Customers in Colorado were also asked to rate their willingness to participate in the program on a scale of 0-10 if the utility offered them the following incentive options: 20% discount on their monthly bill from June to August; a 25% discount on their monthly bill from June to August; a $50 single-time credit; and a $60 single-time credit.

Table 15 shows the percentage of respondents in Colorado likely, neutral, and unlikely to participate in the program for the given incentive amounts. Percentages in the table showed respondents were more likely to participate in the program when offered the higher incentive. Cadmus calculated a chi-squared statistical test to see if there was a statistically significant difference between discount options in terms of respondents' likelihood to participate in the program.

The results of the chi-squared tests showed there was *no statistically significant difference* in respondents' likelihood to participate between Xcel offering a 20% discount and a 25% discount, C^2 (2, n=139) =0.75, $p > 0.05$.

Further, there was *no statistically significant difference* in respondents' likelihood to participate between Xcel offering a $50 bill-credit and a $60 bill-credit, C^2 (2, n=139) =0.19, $p > 0.05$. These results are summarized in Table 15.

Table 15. Colorado—Nonparticipants Willingness to Participate Based on Incentive Offered (n=139)

Incentive	Likelihood to Participate			Chi-Squared Test
	Unlikely (0-4 Rating)	Neutral (5 Rating)	Likely (6-10 Rating)	Statistically Significant Difference?
20% monthly discount	40%	8%	53%	Between 20% and 25%: NO
25% monthly discount	35%	9%	56%	
$50 single-time credit	42%	13%	46%	Between $50 and $60: NO
$60 single-time credit	37%	8%	55%	

Cadmus also tested for differences between percentage and single-time dollar amounts. Results showed there was *no significant difference* between respondents' likelihood to participate when offered a percent versus a dollar amount, C^2 (2, n=278) =0.50, p > 0.05. These results are summarized in Table 16.

Table 16. Colorado—Comparison of Nonparticipants' Likelihood to Participate with a Percent vs. Dollar Discount (n=278)

Incentive	Likelihood to Participate			Chi-Squared Test
	Unlikely (0-4 Rating)	Neutral (5 Rating)	Likely (6-10 Rating)	Statistically Significant Difference?
% monthly discount	37%	8%	54%	Between % and $: NO
$ single-time credit	40%	10%	50%	

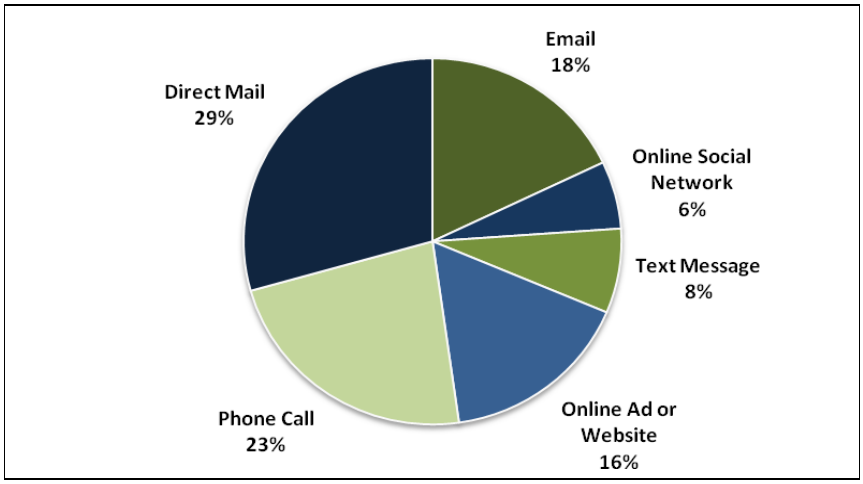
Ultimately, findings from both states suggest nonparticipants found incentives for participating in the program attractive, increasing their likelihood to participate in the program. However, greater incentive amounts did not provide a significant increase in nonparticipants' willingness to participate, as there were no statistically significant increases in likelihood to participate, given greater incentive amounts. There was, however, a statistically significant difference among nonparticipants in Minnesota, who preferred a monthly discount in the form of a percentage over a single-time fixed amount credit.

Program Communication Preferences

Nonparticipants primarily preferred communication about the program via direct mail (29%), phone call (23%), e-mail (18%), or an online ad or Web site (16%). Fewer nonparticipants preferred to learn about the program via text messaging (8%) or an online social networking site, such as Twitter or Facebook (6%). Figure 14 summarizes these responses.

When asked if they had enough information from Xcel Energy on ways to save energy, about three-quarters of respondents (72%, compared to 84% for Participants) said they had enough information, while the remaining 28% said they did not have enough information.

Figure 14. Minnesota and Colorado—Nonparticipants Communication Preferences (n=1,106)[7]



Cooling Equipment and Service

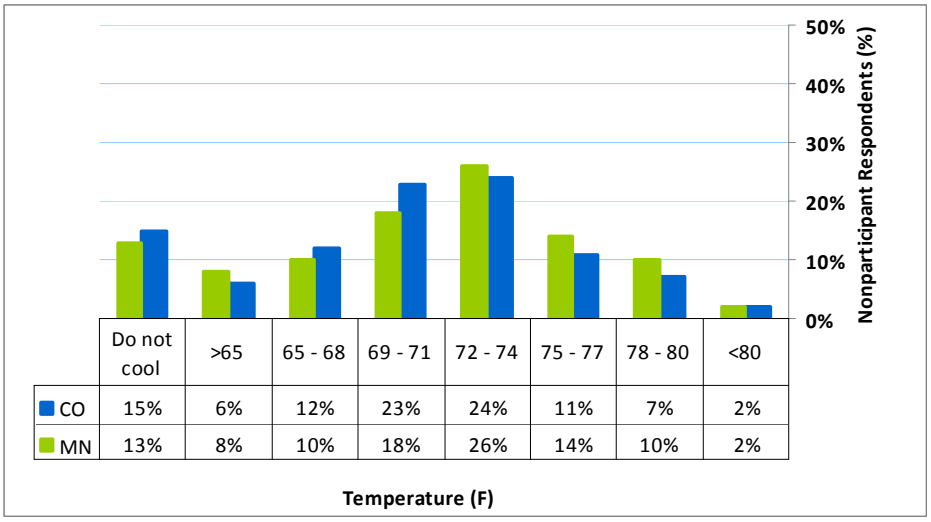
Generally the rate of AC unit upgrades or replacements is minimal. Most nonparticipants (93%) had not upgraded or replaced their AC unit(s) within the last year; only 7% (n=31 of 410) had done so in the last year. As unit replacement presents potential challenges to HVAC technicians, however, there is a possibility that the switch may not be reconnected when the new unit is installed.

About a third of respondents (30%) had their AC serviced in the past 12 months. Of those who had their AC serviced, very few (five respondents) indicated the AC technician discussed the program.[8] Interview staff coded the AC technicians' comments to participants and found the tone to be mostly "neutral."

Further, most nonparticipant respondents (81%) reported they kept their homes the same daytime temperatures during weekdays as they did on weekends. Fifteen-percent of respondents said weekdays were warmer in their homes, and only 4% said weekdays were cooler. As shown in Figure 15, most nonparticipants kept their thermostat settings from 2:00 p.m.-6:00 p.m. on weekdays between 69F and 77F. A fairly large percentage of nonparticipants did not cool their home at all during the summer (14%).

[7] Combined responses and multiple mentions by nonparticipants increased the number of responses to 1,106.
[8] There were a larger number of "I don't know" responses to this question, with 25% of respondents reporting.

Figure 15. Nonparticipants Thermostat Setting on Weekdays (2pm-6pm)



	Do not cool	>65	65 - 68	69 - 71	72 - 74	75 - 77	78 - 80	<80
CO	15%	6%	12%	23%	24%	11%	7%	2%
MN	13%	8%	10%	18%	26%	14%	10%	2%

Energy Conservation Values and Actions

As conservation values and actions are linked to desired outcomes, Cadmus asked a series of questions regarding awareness, inclination, and actions taken to conserve energy in respondents' homes.

Over half (58%) of nonparticipants installed energy-efficient equipment in their homes within the last year. CFLs were the most frequently mentioned measures (19%), followed by other lighting measures (15%), clothes washers (12%), and refrigerators (10%). Notably, 6% of respondents reported installing energy-efficient air conditioners.

Seventy percent of nonparticipants reported taking energy saving actions in the last two years, mostly consisting of turning off lights when not in use (28%) and turning off computers when not in use or at night (31%).

Overall, the majority of nonparticipants (72%) were interested in energy-saving programs offered by Xcel Energy. Over half (60%) of nonparticipants felt they were familiar with ways to save energy in their homes, and a large majority (82%) prioritized managing their household energy bills.

Demographics

Demographic items addressed home ownership, and home size.

Home Ownership

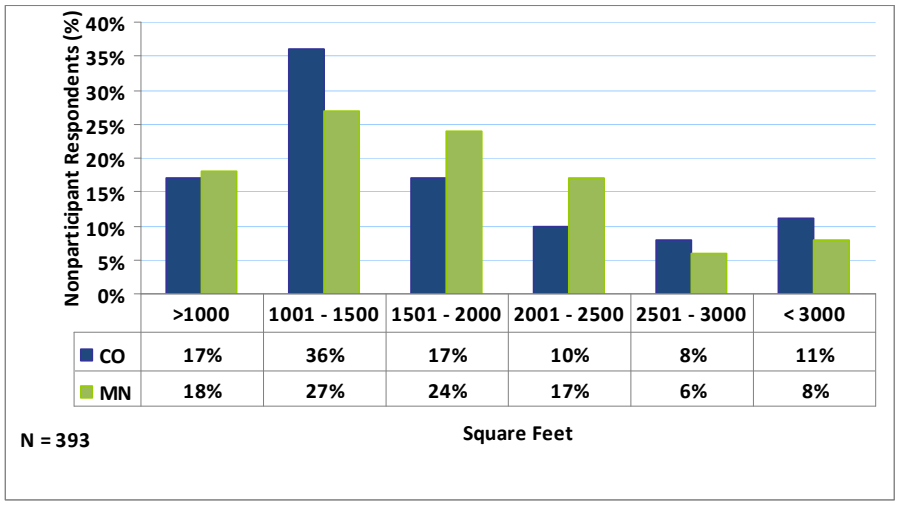
A significant portion of nonparticipants rented their homes (43%), while the remaining 58% owned their homes. Cadmus calculated cross-tabulations of nonparticipants' likelihood to participate in the program within the next year and whether they owned or rented to see if the large proportion of renters responding to this survey had any relationship with future

participation. Results show *renters were more likely to participate in the program* within the next year (22% vs. 16% of owners). Owners, alternatively, were less likely than renters to participate in the program (31% vs. 12% of renters). These findings could suggest renters were willing to participate, but might not because they did not own the AC system or did not know they might qualify.

Home Size

Most homes in both states were reported to be between 1,000 to 2,000 sq. ft. (see Figure 16). A significant portion of respondents (31%) in Minnesota said they did not know the size of their homes.

Figure 16. Nonparticipants Home Size (n=327)



Nonparticipant homes were smaller on average compared to participants. This may be connected to the higher proportion of nonparticipants that are renters. A cross-tabulation of whether respondents owned or rented their homes and the square footage of the homes showed nonparticipants renting their homes tended to have homes 1,500 sq. ft. or less (30% vs. 20% of owners), while those owning their home had homes 2,500 sq. ft. or greater (15% vs. 1% of renters). Colorado respondents tended to have more new homes built from 1999-2009 (46%); more homes in Minnesota were built earlier, before 1978.

Segmentation

Xcel Energy provided customer segmentation data on each sample point using the Nielsen Claritas PRIZM Market Segmentation model (see Xcel Energy provided customer segmentation data on each sample point using the Nielsen Claritas PRIZM Market Segmentation model. A similar analysis is provided for residential nonparticipants. Codes for the 11 life stages were appended to each response record, and summary data for the Xcel Energy customer population and Saver's Switch population were also provided (**Error! Not a valid bookmark self-reference.**). According to these data, three categories make up over half (52%) of the Saver's Switch population: midlife success (22%), conservative classics (15%) and young accumulators

(15%). One other category, affluent empty nests, are proportionally larger compared to the proportion of those groups in the general customer population. These four groups represent the key prospects for participation in the program.

Table 10). Codes for the 11 life stages were appended to each response record, and summary data for the Xcel Energy customer population and Saver's Switch populations were also provided. Nonparticipant survey data analysis using these codes indicated survey responses were proportional to the Saver's Switch population along many life stage categories.

Table 17, below, highlights key characteristics of the 11 Life Stage groups, based on their nonparticipant survey responses.

Table 17. Life Stage Characteristics—Nonparticipants

Life Stage Name	Accumulated Wealth	Young Accumulators	Mainstream Families	Sustaining Families	Affluent Empty Nests	Conservative Classics	Cautious Couples	Sustaining Seniors	Midlife Success	Young Achievers	Striving Singles
Life Stage code	F1	F2	F3	F4	M1	M2	M3	M4	Y1	Y2	Y3
Said they were most likely to participate in SS within next year								X		X	X
Said they were least likely to participate in SS within next year	X				X	X	X				
Most likely to first hear about SS through a bill insert			X		X					X	
Most likely to rent their home				X				X		X	X
Most concerned about managing electric bill				X		X	X	X			
Most likely to need more information about saving energy								X	X		X
Most interested in energy saving programs						X		X		X	X
Most likely to engage in conservation behavior				X					X		
Most receptive to email communications about energy programs					X				X		X

Three categories of nonparticipants were identified as the most likely candidates to participate in the Saver's Switch program within the next year, based on responses to the survey: sustaining seniors (43%); young achievers (32%); and striving singles (42%). This information differed mostly from participant data, which showed three other categories as key prospects for the program (midlife success, conservative classics, and affluent empty nesters) and one overlapping category, young achievers. Prospects were identified differently in that nonparticipant segments reported their likeliness to participate, whereas participant segments were identified as prospects on the basis of categories with highest current enrollment and their proportion to the population.

There were also four groups of nonparticipant survey respondents reporting they were least likely to participate in the program within the next year: accumulated wealth (67%); affluent empty nest (45%); conservative classics (47%); and cautious couples (62%). This information contrasts with participant data showing conservative classics and affluent empty nests are key program prospects. Respondents in these two groups may be less likely to state interest in the program despite the fact that many from those categories are already enrolled.

Mainstream families and affluent empty nesters were most likely to hear about the program through bill inserts. Affluent empty nesters, in addition to midlife successors and striving singles,

were most receptive to e-mail communications from Xcel Energy about energy-saving programs. Information about energy-saving programs would likely be most welcomed by: sustaining seniors, midlife successors, and striving singles, as a higher proportion indicated they did not have enough information about saving energy from Xcel Energy.

These segment analyses may be used to target specific information to the type of customer for whom it can benefit most. This will likely save the program some of the marketing investment by targeting appropriate segments more efficiently.

Conclusions

Primary objectives for the residential nonparticipant survey were to understand nonparticipants' awareness level of the Saver's Switch program, assess customer decision-making processes, including reasons for not participating in the program, and identify receptivity to new or alternative program features.

About half of the nonparticipants had, in fact, heard of the program. Of respondents that had heard of the program, bill inserts were the most common way participants first heard about the program. Further, *Cadmus found nonparticipants primarily preferred communications about the Saver's Switch program via direct mail.* There also was strong interest among nonparticipants in energy-saving programs offered by Xcel Energy. Based on these findings, Cadmus concludes Xcel Energy's direct mail tactics have been successful and should continue to be utilized in addition to new ways of informing customers about the program. Cadmus found a fair portion of respondents were receptive to e-mail communications, which could be less costly, increase effectiveness, and further increase awareness among residential nonparticipant customers.

Results show renters are more likely to participate in the program within the next year compared to owners. Owners, alternatively, are less likely than renters to participate in the program when compared to renters. These findings suggest renters are willing to participate, but might not enroll in the program because they do not own the air conditioning system. Potential barriers from landlords may exist, thus decreasing nonparticipants' likelihood to participate in the program.

Key reasons for not enrolling in the program mostly arose from a lack of interest in the program, not seeing a 'need' given low AC use, and concern about the utility controlling the customer's air conditioner. In terms of incentivizing customers to participate in the program, findings from both states suggest nonparticipants found the current level or increased incentives for participating in the program attractive. However, greater incentive amounts did not provide a *significant* increase in nonparticipants' willingness to participate.

About half of nonparticipants had installed energy-efficient equipment in their homes within the last year, with CFLs being the measure most frequently installed, followed by other lighting measures, clothes washers, and refrigerators. Notably, less than 10% of respondents reported installing energy-efficient air conditioners. Energy-saving behaviors, such as turning off lights when not in use and turning off computers when not in use, were frequent among nonparticipants. Although these behaviors are promising, further energy conservation behaviors among nonparticipants may be attainable with greater Xcel Energy conservation program awareness.

Most nonparticipants had not upgraded or replaced their AC unit(s) within the last year, and, of those that had, did not receive negative feedback from HVAC technicians about the program. Therefore, Cadmus does not conclude HVAC contractors are a barrier to this group, which could be associated with many respondents not installing new AC systems or not having their existing systems serviced in the past year.

Since a large portion of nonparticipants did not cool their homes during summer, this is a likely factor in lack of interest in the program. . Less than 5% of residential program participants, despite having a central air conditioner, did not cool their homes in summer, compared to an average of 14% of nonparticipants reporting they did not cool their homes. Nonparticipants that do not cool their homes tend not to recognize the value of the program and do not consider enrolling.

When compared to participants, a significantly large percentage of nonparticipants rented their homes (43% among nonparticipants, vs. 4% among participants). Further, a handful of nonparticipant respondents reported they did not participate in the program because they did not own their home and either could not get their property owner to participate or did not check with their landlord to see if they were willing to enroll. As home ownership is not a requirement of the program and nonparticipants were screened for program eligibility, many of these renters likely have not enrolled because they incorrectly believe the program does not apply to them as renters or they misperceive that they are ineligible for the program. *Cadmus concludes a sizable market of eligible renters and landlords with central air conditioning do not participate in the program, indicating a significant barrier.*

Business Participants

As shown in Table 18, Cadmus completed 418 surveys with business customers that participated in the program. All participant surveys were completed with customers in Minnesota because the business program is not offered in Colorado.

Table 18. Business Participant Survey Completions

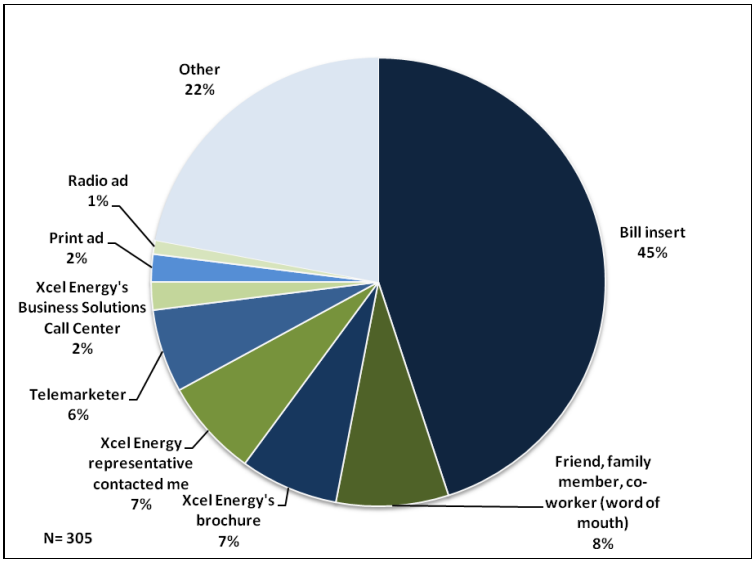
	Goal	Complete
Business Participants	400	418

The main objective of surveying business participants was to determine areas in which the program succeeds as well as the areas needing improvement. Cadmus and Xcel Energy developed a survey instrument to assess program satisfaction, initial source of program awareness, methods of enrolling, interest in program features, interest and engagement in conservation, and basic demographics. Insights from these responses may be used to enhance program delivery and increase effectiveness of program promotion.

Program Awareness Source

A large number of participants (27%) could not remember where they first heard about the program; this is to be expected, as many businesses have enrolled in Saver Switch for multiple years. Of participants who could remember, bill inserts were the most common source of program information, cited by 45% of respondents. The second most prevalent source of program information was word of mouth (8%). A large portion of respondents (22%) provided answers not listed in the survey options; these represented a broad range of information sources from electricians to experience as a residential participant. Complete results are shown in Figure 17.

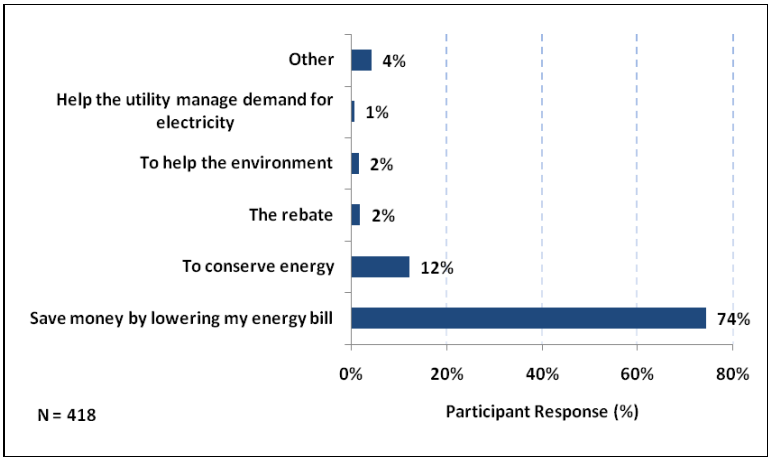
Figure 17. Business Participants' Sources of Program Information



Program Enrollment Motivation

The majority of respondents (74%) said they participated in the program to save money by lowering their electric bill, while only 2% of respondents said they participated so they could receive the bill credit. Similar to residential participants, this suggests that, although money provided motivation for businesses to participate, the majority of respondents most likely believed they saved more money from cycling their air conditioners than they gained from the program incentive.

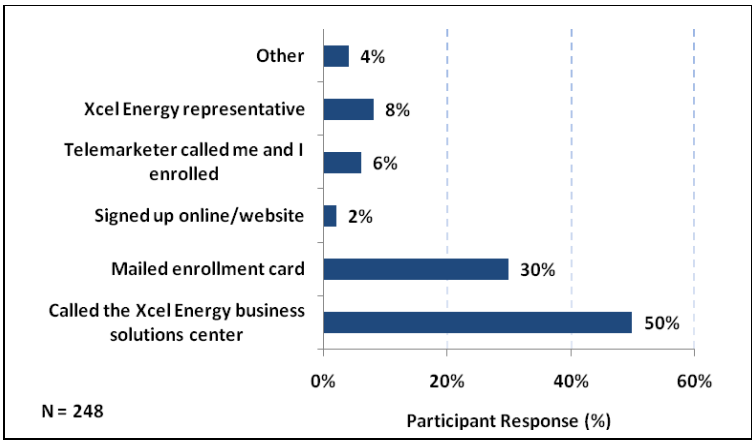
Figure 18. Business Participants' Primary Enrollment Motivation



Enrollment Method

Again, a large portion of participants (41%) could not remember how they had signed up for the program. Of remaining respondents, 50% said they enrolled in the program by calling the business solutions center, and 30% said they had mailed in the enrollment card. Only 2% signed up online, which coincided with none of the respondents having first heard about the program via the Internet.

Figure 19. Business Participants' Enrollment Method



Satisfaction

Overall, business participants had a high satisfaction level with all program aspects. As seen in Table 19, more than 80% of participants were satisfied with the program, while more than 90%

of participants were satisfied with the enrollment, installation, and bill credit process. Respondents who rated the program less favorably (a score of six or less) were asked to explain their ratings. The majority of complaints stemmed from the misconception that the program helps participants save energy. Numerous respondents were disappointed they had not seen a reduction in energy consumption or a reduction in their bills. There were also some concerns over comfort levels, but this issue was cited by a much smaller number of respondents.

Table 19. Business Participant Satisfaction Ratings

On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how satisfied are you with…	Dissatisfied (0-4)	Neutral (5)	Satisfied (6-10)
The Saver's Switch program overall (n=397)	3%	8%	88%
The enrollment process (n=324)	0%	4%	96%
The installation process (n=314)	2%	2%	97%
The timeliness of the credit on your bill (n=311)	3%	3%	94%

Program Features Options

To test interest levels in new or alternative program features, business participants were asked to rate their interest level in three options: temporarily opting out of a cycling event at least one time per summer; donating their bill credit to a charity of their choosing; and donating their bill credit to an alternative energy project. Generally, participants were not receptive to the options presented. Half to three quarters (47%-73%) indicated, by rating 0, they were not at all interested in any of the three options.

Of the three features tested, the option to 'opt out' of a cycling period garnered the most positive ratings, with 23% of participants expressing some interest in this option. This level of interest, however, is likely not enough to warrant program changes.

Table 20. Rating Responses to Incentives and Program Features

Using a scale from 0 to 10, where 0 is not at all interested and 10 is very interested, how interested are you in the following program options:	Uninterested (0-4)	Neutral (5)	Interested (6-10)
The ability to temporarily 'opt out' of a cycling period one time per summer (n=388)	61%	16%	23%
Rather than a credit to your bill, donate the money to your favorite charity (n=405)	87%	7%	4%
Rather than a credit to your bill, donate the money to an alternative energy project (n=404)	81%	10%	8%

Control Notification Preferences

As participants are currently notified of control days only by voice message on a "Saver's Switch Hotline," Xcel Energy was interested in testing additional notification methods. Respondent preferences for communication methods were ranked as follows:

1. E-mail (51%).
2. Phone (35%).
3. A Saver's Switch Web page with cycling alerts (8%).

4. Message on the Saver's Switch hotline (4%).
5. Text message alert (3%).

Cooling Equipment and Service

The majority of businesses had seen an AC technician within the last year because they had serviced their system, replaced it, or upgraded it. While servicing and cleaning were much more common reasons for seeing an AC technician (67%), 11% of respondents said they had replaced or upgraded their AC system. This value may serve as a proxy for the annual rate of AC replacement among Saver's Switch business participants.

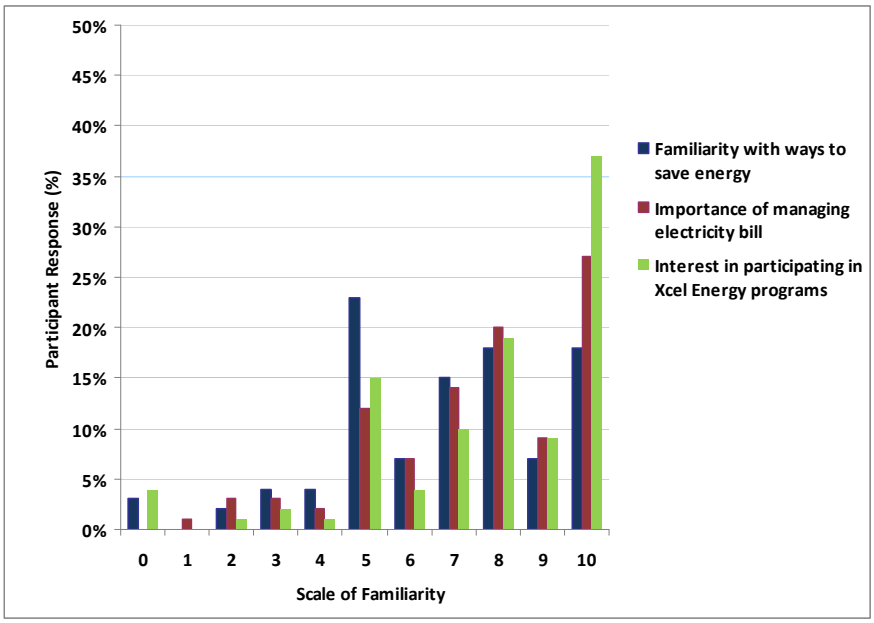
Of participants who had seen an AC technician within the last year, only 6% of respondents (16 respondents) said the technician had commented on the Saver's Switch program. These participants were asked to share the general content of the technicians' comments. The tone of these comments was coded, and six were positive, six were neutral, and only four were deemed to be negative, showing AC technicians have not had a significant impact, either positive or negative, on business program participants.

Energy Conservation Values and Actions

Respondents were asked to identify their job function and the role they played in managing their business' energy costs: 67% of respondents described their job as a business owner or executive; and 13% said they were property managers. Additionally, 85% of respondents said they were either the principal decision maker or played a major role in managing their company's energy costs.

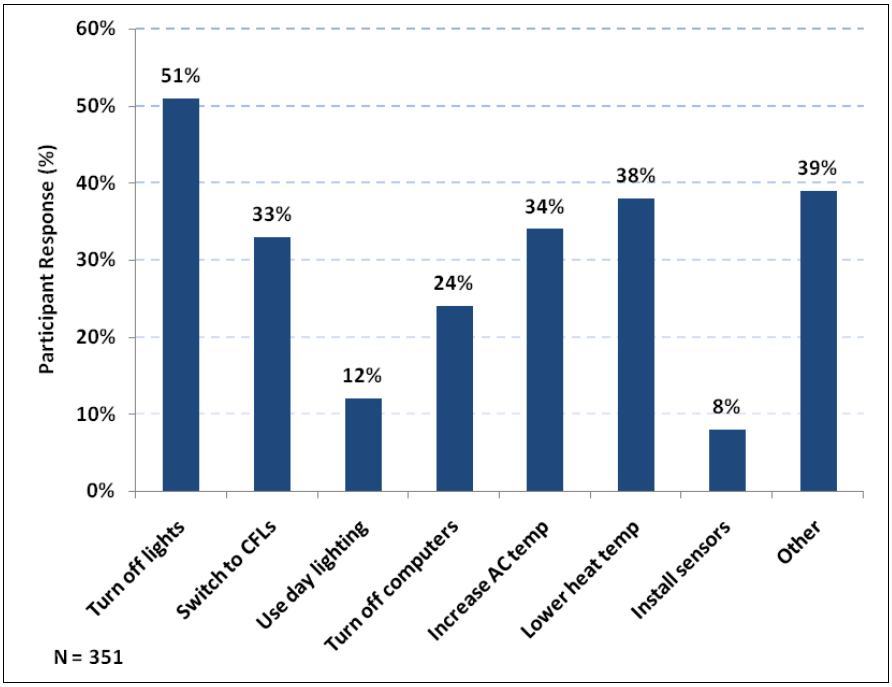
When asked to rate the importance of managing their electric bills (on a scale from 0-10), 77% of respondents categorized this task as important (rating of 6-10). A similar proportion of respondents (79%) said they were interested in participating in programs sponsored by Xcel. While fewer respondents (65%) thought they were familiar with ways they could save energy in their business, 76% of respondents thought they had enough information from Xcel on ways to save energy. ??

Figure 20. Business Participant Energy Management Values



Despite a lower percentage of business participants feeling they were well versed in ways to save energy, 84% said that since enrolling in the program, they had taken some actions to reduce energy consumption in their businesses. Turning off lights and lowering heating were the two most popular ways to save energy. Figure 21 shows the complete results.

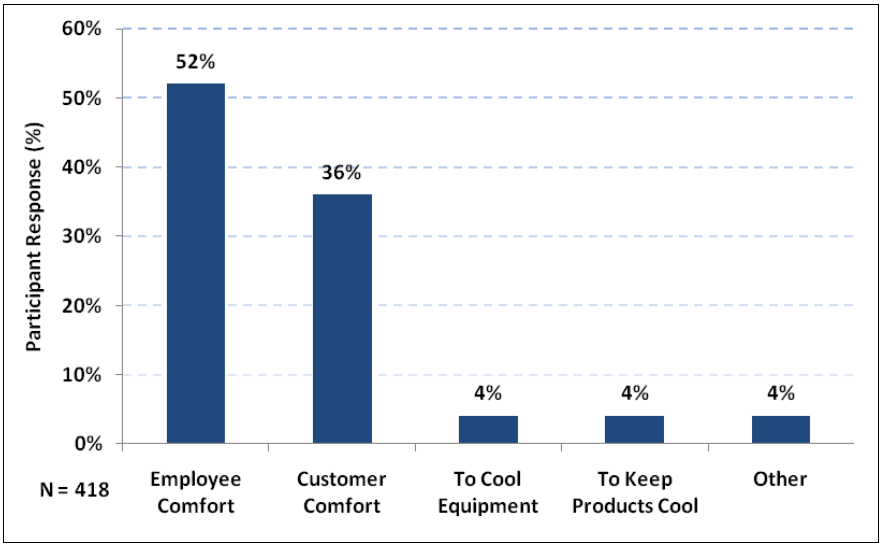
Figure 21. Business Participants' Energy Conservation Actions



Cooling Needs

Businesses' cooling needs were assessed as part of the evaluation to determine how AC cycling could affect participants. As shown in Figure 22, a large portion of participant businesses cooled their building for either employee or customer comfort (88%), while very few cool their building for product or equipment needs (8%). Therefore, comfort may be a direct concern of many participant businesses, but products and equipment were a lower priority for cooling needs.

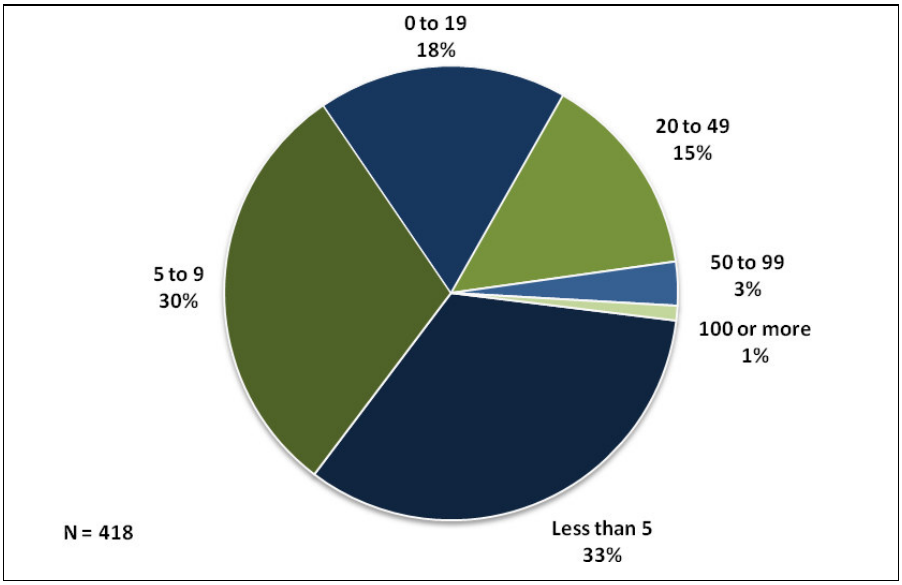
Figure 22. Business Participants' Cooling Priorities



Demographics

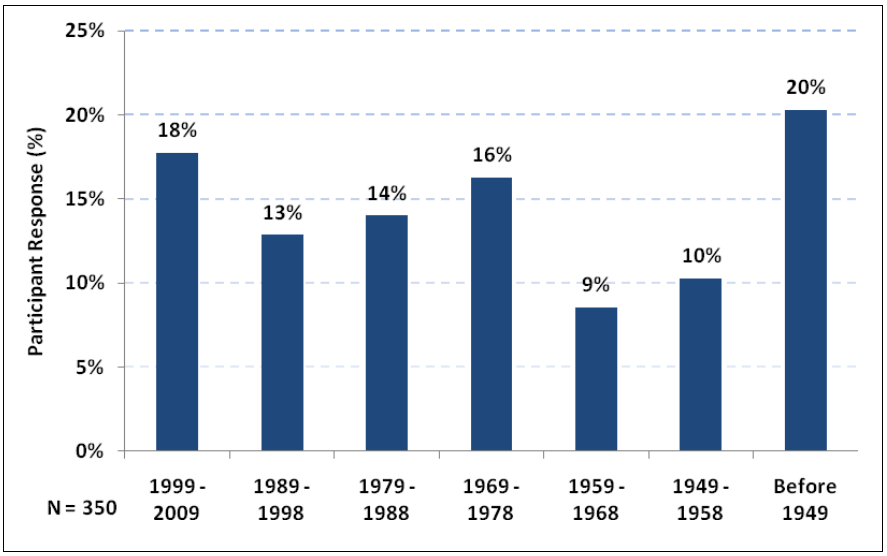
The majority of business participants (73%) own their business space, while the remainder leased. Businesses were also relatively small, with 78% having 19 employees or less and 65% being 10,000 square feet or less.

Figure 23. Business Participants' Number of Employees



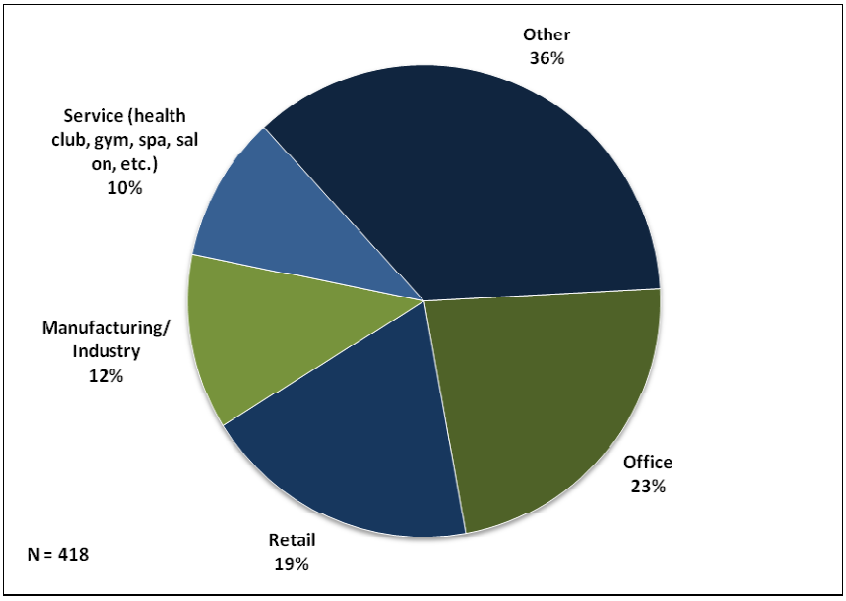
The age of the business is evenly distributed between new and old construction.

Figure 24. Approximate Year Business was Built



Respondents most commonly owned or worked for an office or a retail establishment. Figure 25 shows the makeup of business types reported by participant businesses, broken into the top four business types. Any category receiving less than 10% of the total responses was grouped into "other."

Figure 25. Business Participants' Industry Segment



Conclusions

Primary objectives for this survey were to understand Saver's Switch business participants': motivations for enrolling; satisfaction with the program; preferences for communication; and receptivity to new or alternative program features. A better understanding of participants' motivations and preferences may lead to more effective marketing, improved retention rates, and increased customer satisfaction.

The business participant results closely mirrored the residential participant results. Most customers' first exposure to the Saver's Switch program was through a bill insert, with the customer care center and direct mail being the most popular ways to enroll. As both staffing and direct mail are resource intensive, promotions that drive customers to the Web for enrollment may result in program savings; however, the Internet was not a popular avenue among participants for alerting them about control days. More research on participant and nonparticipant use of the Internet for energy education or utility bill payment may be needed to determine if Web-enrollment is a viable option.

As in the residential program, misconceptions regarding how the program works were also evident in the business participant responses. Similar to residential participants, the most common reason for signing up for the program was to save money by reducing energy consumption. While a finding that most customers sign up to save money is not unusual, it is surprising that many participants believe that cycling their air conditioner will save enough energy to cause a reduction in their bill. As a demand response program, the most direct benefit of Saver's Switch to the individual participant is the bill credit they receive in October, not the small savings associated with cycling.

Despite the possible confusion around how savings were realized, overall satisfaction with the program was very high. Very few participants had any concerns about their comfort levels; the majority of the negative feedback from respondents stemmed from a lack of visible savings (both electric and monetary). Ratings for the enrollment process and installation process were also very high (both over 90% positive). These findings suggest the only improvements needed are clearer marketing materials. Explaining in more detail that the programs' main incentive is the bill credit will help reduce misconceptions about the program and mitigate the majority of complaints.

With satisfaction already very positive, the alternative program features tested, such as the opt-out option and alternative rebate incentives, were of little to no interest for current participants. Though some options may be useful for recruiting new participants, the current participants are highly satisfied with the program features in place.

Business Nonparticipants

As shown in Table 21, Cadmus completed 420 surveys with business customers that did not participate in the Program (nonparticipants). All nonparticipant surveys were completed with customers in Minnesota because the program has not been offered in Colorado.

Table 21. Business Nonparticipant Survey Completions

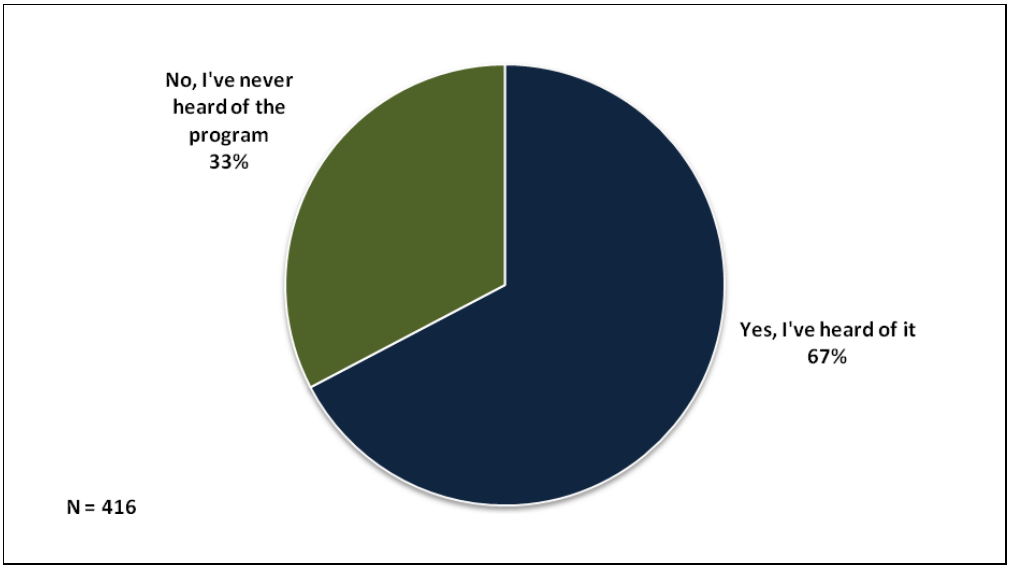
	Goal	Complete
Business Nonparticipants	400	420

Business nonparticipants were included in Cadmus' process evaluation to help determine why some businesses chose not to participate and how participation levels could be increased. These objectives are particularly relevant in the face of increased program enrollment goals. Surveying nonparticipants will help determine what program aspects do and do not appeal to businesses, and how marketing can be targeted to businesses most likely to participate. Finally, surveying both nonparticipants and participants provides basic demographic information that may highlight significant similarities and differences between the groups.

Program Awareness Source

Two thirds (67%) of nonparticipants had heard of the program prior to the survey call, as shown in Figure 26.

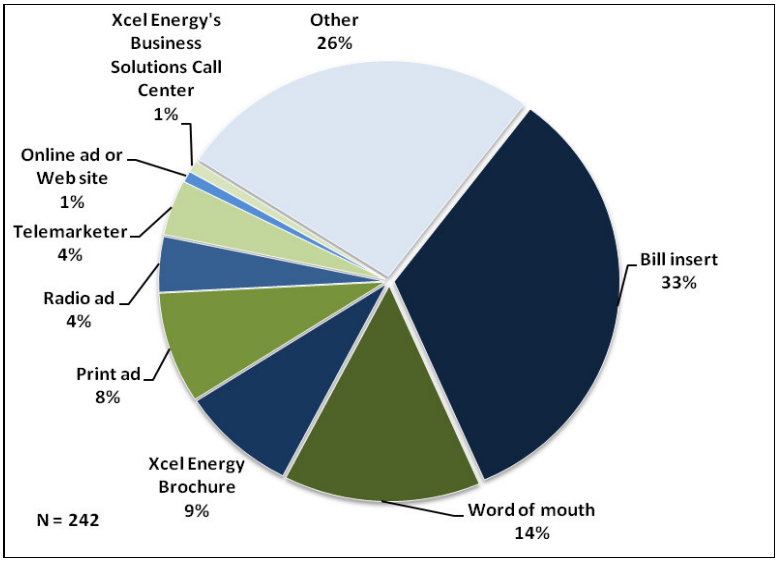
Figure 26. Business Nonparticipants' Program Awareness



Of nonparticipants who had heard of the program, the most commonly cited source for program information was a bill insert (33%); the second most popular was word of mouth (14%). These findings are consistent with the participant business survey results, and, like participants,

nonparticipants did not commonly cite the Internet (1%) as the place they first heard about the program.

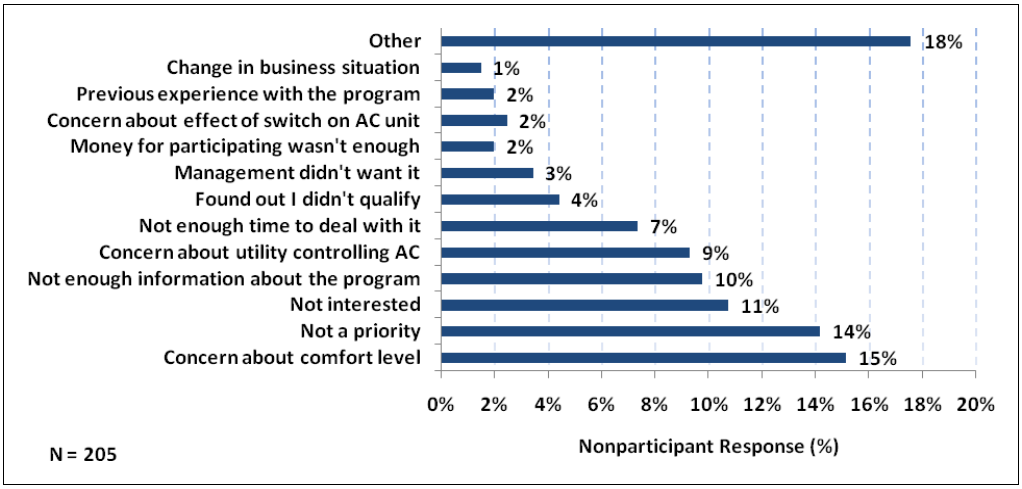
Figure 27. Business Nonparticipants' Source of Program Information



Decision-Making Process

Of respondents who had heard of the program, the majority (70%) had not considered participating. The 30% who considered participating were asked what had prevented them from enrolling in the program. Answers varied, with 33% citing time and priority levels, and lack of information as barriers, and 49% citing concerns over comfort and control, and lack of interest and ineligibility as barriers. These results indicate there was not a common concern aligning nonparticipants, and several strategies may be needed to bring them into the program.

Figure 28. Business Nonparticipant Reasons for Not Participating

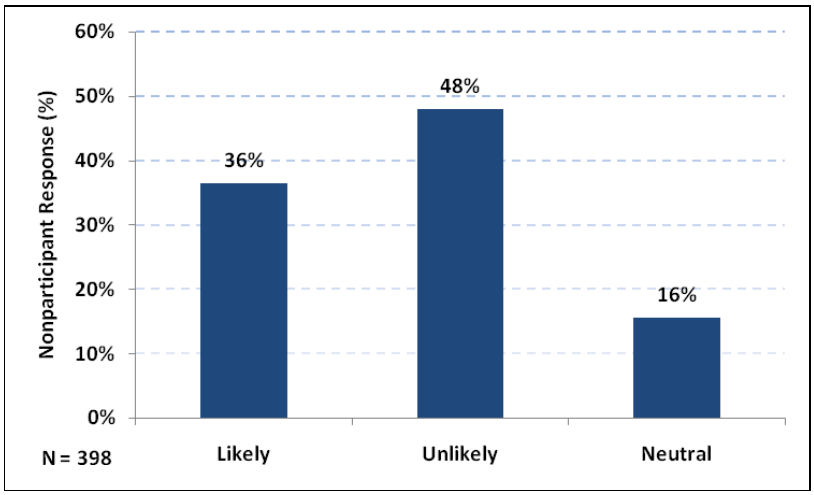


"Other" responses included: "don't use AC much, so don't see the need" (10 responses); concern for employee comfort (8 responses); concern for equipment needs (6 responses); renter/tenant issues (7 responses); and 12 other varied responses.

Likelihood of Participation and Incentive Preferences

Nonparticipants were asked a series of questions to determine: their likeliness to participate in the program; the amount of incentive that would entice participation; and the type of incentive most preferred. Over a third of business nonparticipants surveyed said they were likely (a rating of 6-10) to participate in the program next year, 11% of whom said they were very likely to participate (a rating of 10).

Figure 29. Business Nonparticipants' Likelihood of Participation



Nonparticipants who provided a rating of 7 or less (76%) for their likeliness to participate next year were asked a series of questions regarding incentive levels. Respondents who rated their likeliness to participate next year as an 8 or greater were not asked, because it was assumed they would not need additional incentive money to participate in the program if they were agreeable at a lower level. Nonparticipants were asked about their likeliness to participate in the program if incentive amounts were increased to three different levels. As seen in Table 22, the majority of participants remained uninterested in participating in the program until the incentive reached $10 per ton; however, 46% of respondents were still unlikely to participate in the program, even with the much higher incentive payment.

Nonparticipants were then asked how likely they would be to participate if the incentive was assessed as a percentage off their electrical bills for the duration of the control period. A higher percentage of nonparticipants were interested in participating under this incentive structure, with the 63% saying they would be likely to participate if they were offered a 20% discount.

Table 22. Business Nonparticipants' Interest in Levels of Incentives as Dollars per AC Ton

Using a scale from 0 to 10, where 0 is not at all likely and 10 is very likely, how likely are you to enroll in the program within the next year…	Unlikely (0-4)	Neutral (5)	Likely (6-10)	Chi-Squared Test Statistical Significance
A $6 credit per AC ton on your June – September monthly bill?	56%	18%	26%	
An $8 credit per AC ton?	52%	11%	37%	**Between $6 and $8: Yes**
A $10 credit per AC ton?	46%	11%	43%	**Between $8 and $10: No**

Table 23. Business Nonparticipants' Interest in Alternative Incentives as Percent

Using a scale from 0 to 10, where 0 is not at all likely and 10 is very likely, how likely would you be to enroll in the program if Xcel Energy offered you…	Unlikely (0-4)	Neutral (5)	Likely (6-10)	Chi-Squared Test Statistical Significance
A 15% discount for the months of June – September monthly bill on your October bill?	39%	12%	48%	
An 18% discount?	34%	9%	57%	**Between 15% and 18%: No**
A 20% discount?	30%	7%	63%	**Between 18% and 20%: No**

Cadmus calculated a chi-squared statistical test to see if a statistically significant difference existed between discount options in terms of respondents' likelihood to participate in the program.

The results of the chi-squared tests showed there was *a statistically significant difference* in respondents' likelihood to participate between Xcel Energy offering $6 credit and a $10 credit, C^2 (2, n=282) =0.004, $p > 0.05$. However, there was *not a statistically significant difference* between the $8 and $10 credit C^2 (2, n=282) =0.297, $p > 0.05$.

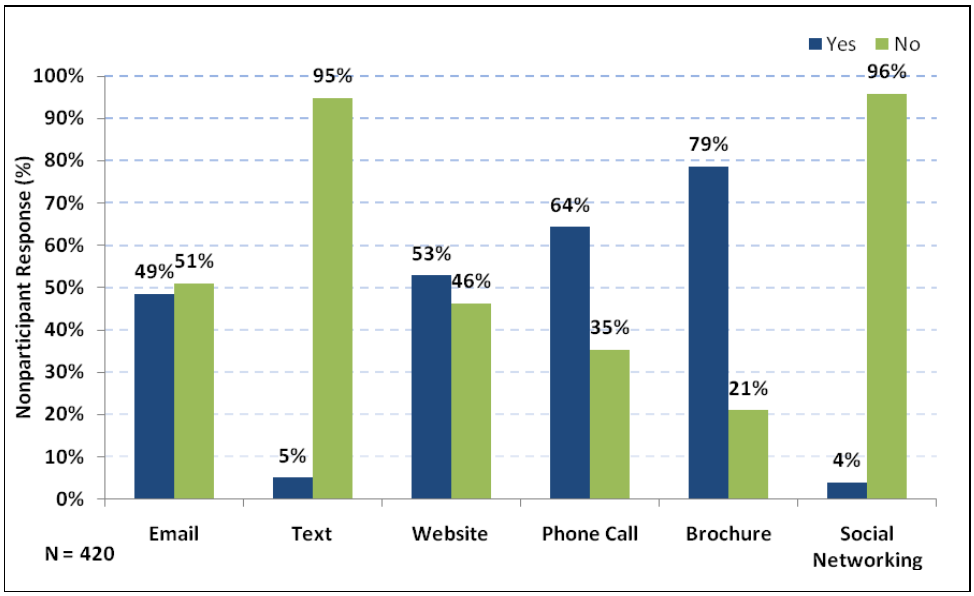
Furthermore, there was *no statistically significant difference* in respondents' likelihood to participate between Xcel offering a 15% reduction and a 18% reduction, C^2 (2, n=297) =0.098, p > 0.05 and between an 18% and 20% reduction, C^2 (2, n=297) =0.312, p > 0.05.

Cadmus also determined that there was a *statistically significant difference* between respondents preference for a dollar credit and a percent discount on their bill. Respondents preferred to receive a percentage reduction on their bill as opposed to a flat dollar amount, C^2 (2, n=282) =0.000, p > 0.05.

Program Information Preferences

Respondents were asked which of six different communication modes they preferred. Predominantly they preferred less personal and less invasive modes of communication, such as brochures and e-mails. Respondents strongly opposed being contacted via text messages or social networking. Some of these preferences align with Xcel Energy's current method of contacting nonparticipants; however, avenues such as e-mail and the Internet could be explored further.

Figure 30. Business Nonparticipants' Communication Preferences



Cooling Equipment and Service

The majority of businesses (65%) had contact with an AC technician within the last year because they had serviced their system, replaced it or upgraded it. While servicing and cleaning were much more common reasons for seeing an AC technician, 13% of respondents said they had replaced or upgraded their AC system. This value may serve as a proxy for the annual rate of AC replacement among Saver's Switch business participants.

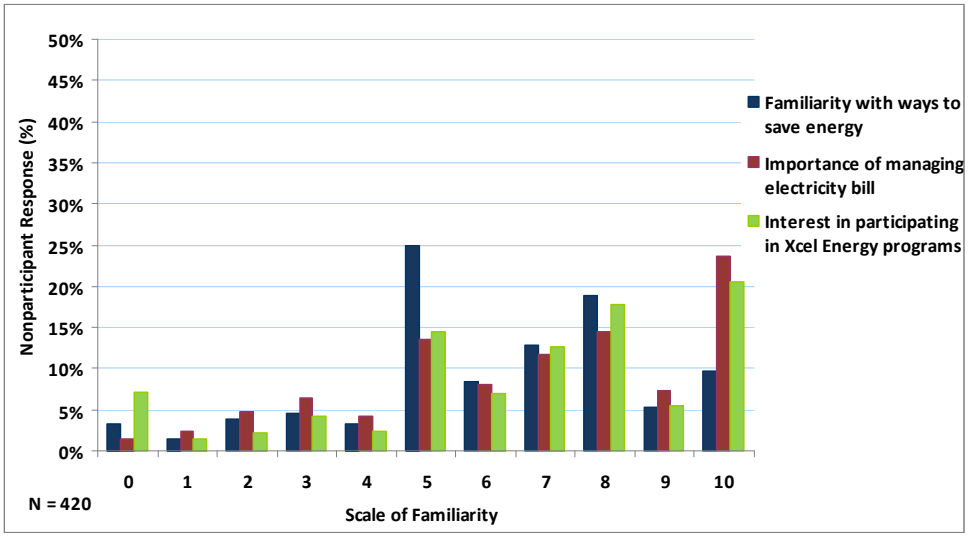
Of the nonparticipants who had seen an AC technician within the last year only 3% of respondents (7 people) said the technician had commented on the Saver's Switch program. These participants were asked to share the general content of the technician's comment. The tone of these comments was coded as positive, neutral or negative. Of the seven responses, 5 were neutral and 2 were negative.

Energy Conservation Values and Actions

Respondents were asked to identify what their job function is and what role they play in managing their business' energy costs. 61% of respondents described their job as a business owner or executive and 14% said they are property managers. Additionally, 85% of the respondents said they were either the principal decision maker or played a major role in managing their company's energy costs. Understanding the role of these respondents may be useful for identifying the appropriate contact at prospective business when promoting the program.

When asked to rate the importance of managing their electric bill (on a scale from 0 to 10) 65% of respondents categorized this task as important (rating of 6-10). A similar proportion of respondents (63%) said they were interested in participating in programs sponsored by Xcel Energy, while fewer respondents (55%) thought that they were familiar with ways that they could save energy in their business. These responses, in comparison to the participant responses, show decreased interest in energy efficiency, energy management and participation in Xcel Energy programs (only 3% of nonparticipants had participated in another Xcel Energy program). *This shows a distinct difference in attitude between participants and nonparticipants.*

Figure 31. Business Nonparticipants' Energy Management Values



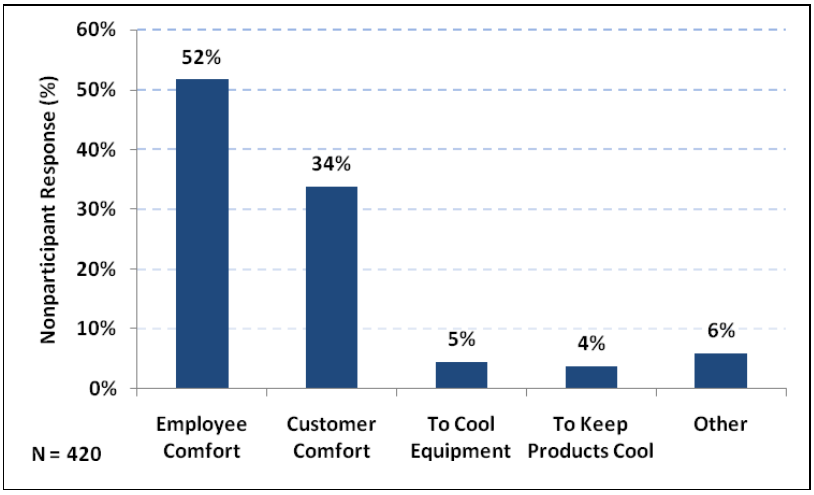
Additionally, a smaller proportion of nonparticipants, compared to participants, said they had taken action to reduce their energy consumption in the past two years. 43% of nonparticipants

reported making behavioral changes to reduce energy and 38% reported installing energy efficiency measures, whereas 87% of participants said they had taken some actions to reduce energy consumption in their business since participating in the program.

Cooling Needs

The cooling needs of businesses were assessed as part of the evaluation to determine how a business' cooling needs would affect the likelihood of their participation. As shown in Figure 32, a large portion of participant businesses cool their building for either employee or customer comfort (86%) while very few cool their building for product or equipment needs (9%). These results closely mimic the participant business results, indicating human comfort is a priority over the cooling needs for equipment and products.

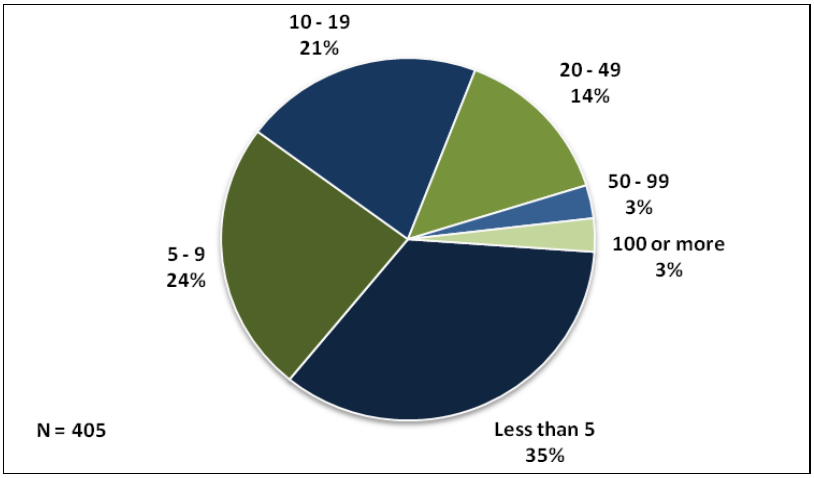
Figure 32. Business Nonparticipants' Priorities for Cooling



Demographics

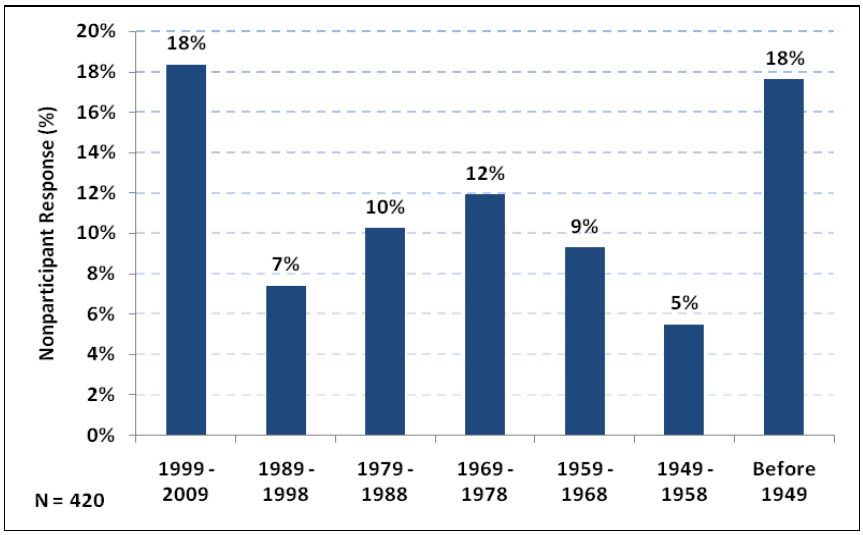
The demographic information collected from nonparticipants coincided with the demographic information provided by participants. The majority of business nonparticipants (63%) own their business space while the remainder leases their space. This represents a decrease (11 percentage points) in rate of ownership from participant businesses. Nonparticipant businesses, like participant businesses, were relatively small, with 80% having nineteen employees or less and 62% being 10,000 square feet or less.

Figure 33. Business Nonparticipants' Number of Employees



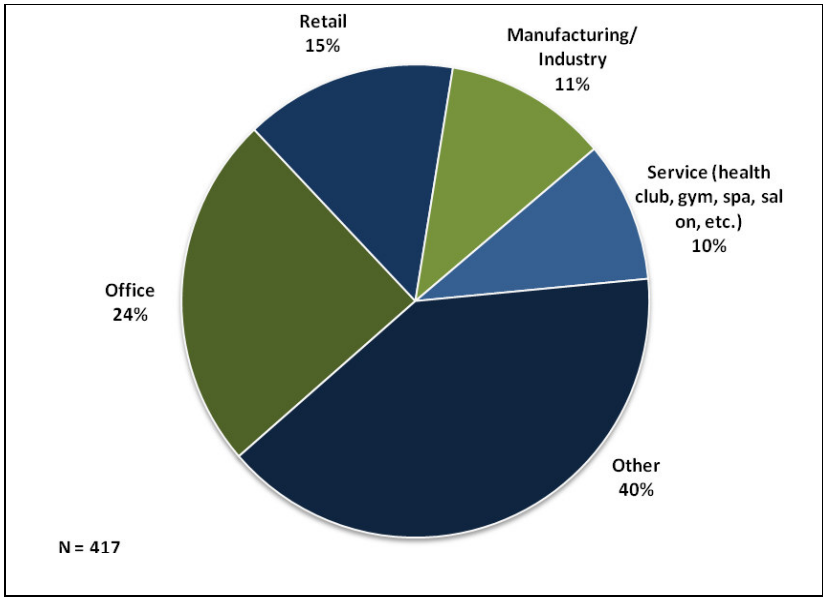
The age of the business is evenly distributed between new and old construction.

Figure 34. Nonparticipants' Approximate Year Business was Built



Respondents most commonly owned or worked for an office or a retail establishment. Figure _ shows the makeup of business types as reported by nonparticipant businesses. This figure shows the top four business types, while any category receiving less than 10% of the total responses was grouped into "other."

Figure 35. Business Nonparticipants' Industry Segment



Conclusions

Primary objectives for this survey were to understand the reasoning behind businesses choosing not to participate in the Saver Switch program, their preferences for communication, interest in increased incentive levels, and demographic traits specifically in comparison to the participant businesses' demographic information. A deeper understanding of nonparticipants' behavior and preferences may lead to more effective marketing and increased levels of participation.

Most nonparticipants had heard about the program prior to the survey and their first exposure came through a bill insert. The marketing channels currently being employed by Xcel Energy, brochures and phone calls, were deemed by nonparticipants as the most acceptable way to reach them with information about the program. Unexplored options such as social networking, and text messages were viewed as a completely unacceptable form of contact; because of this the only options for increased marketing efforts may be e-mail and the internet. These web-based marketing methods garnered approximately 50% approval and may not be a worthwhile investment.

Only about of third of the nonparticipants who had heard of the program considered enrolling in Saver's Switch. When asked what kept them from enrolling, nonparticipants provided several answers which fell in to two general categories: an overall problem with the program and a time/information constraint. 49% of respondents who had a problem with the program or were unable to participate (comfort level, control by the utility, not interested, not qualified, management veto, concern of effect on AC, prior experience with program and change in business situation) and 33% had other non-program related constraints (such as different priorities, lack of time, lack of information, and too low of incentive levels). The respondents

who had a problem with the program will most likely not be convinced to participate; however the nonparticipants who did not have enough information or time to apply could possibly be swayed by higher incentive levels or increased marketing.

About half of nonparticipants said they would be likely to participate in the program next year. When offered an increased incentive payment (more dollars per AC ton) nonparticipants did not have high levels of interest in the program, but having a percentage discount from their electric bills during the summer months generated interest from nonparticipants. Changing the incentive structure may be something to consider, however this may not be feasible from a program delivery perspective.

The demographic information remained relatively consistent between participant and nonparticipant businesses. Therefore continuing to employ the same marketing strategies should generate new enrollment, as nonparticipants do not represent a dramatically different market.

Cancellations and Deactivations

As shown in Table 24, Cadmus completed 442 cancellation and deactivation surveys. "Cancellations" are customers that initially sign up for the program but subsequently cancel their enrollment or are cancelled by the installer due to ineligibility or installation barriers; "Deactivations" are customers that have fully participated in the program and then decide to opt out of the program.

Both types of customers are considered a "breakage" from the program and present a barrier to Xcel Energy meeting overall enrollment goals. For example, in Colorado during 2008, about 25% of the initial recruits cancelled their enrollment in the program before the switch device could be installed. For 2009, the cancellation rate was about 17% for Colorado. This decrease within one year indicates progress in the program's ability to get Colorado customers to follow through with enrollment. Although the "churn[9]" rate (less than 1% for residential) was low in both states, staff were also interested in understanding why participants left the program. In order to better understand perspectives from both these types of 'breakages," a survey of these customers was included in the overall program evaluation study.

Table 24. Breakage Survey Completions

Respondent Type	Cancellations	Deactivations	Frequency	Percent
Colorado	70	163	233	53%
Minnesota	59	150	209	47%
Total	**129**	**313**	**442**	**100%**

Program Awareness Source

Recall for how they first heard about the program is likely related to the length of time they have known about the program. Almost half of deactivations could not recall how they first heard about the program. This was not the case for customers that cancelled.

Of those respondents (both deactivations and cancellations) who could remember how they first became aware of the program, over half (54%) first heard about it through a bill insert. The second highest awareness source was through a telemarketer (27% overall). This was particularly true for Colorado cancellations, as over half (56%) had first learned about the program from a telemarketer.

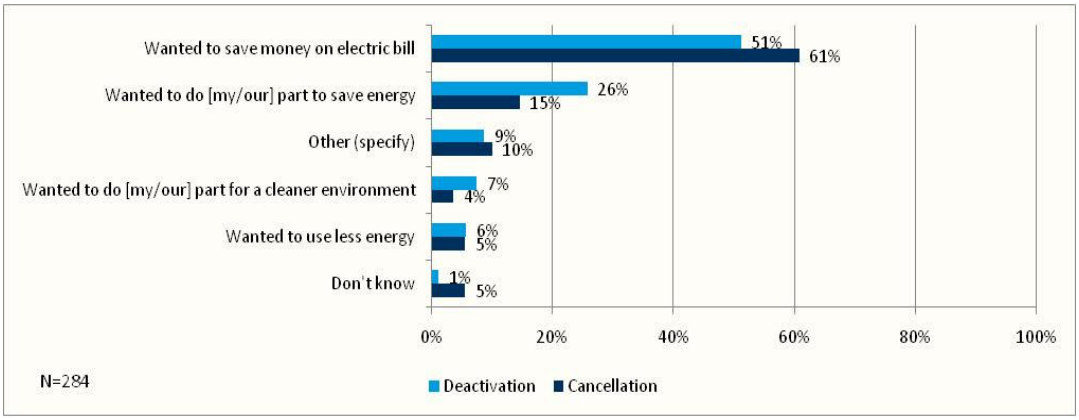
Over one third of both types (35%) did not know how they signed up for the program. Of those who did know, half signed up by calling the Xcel Energy customer care call center. This was more frequent among deactivations (64%) than cancellations (25%). Similar to the source of program awareness, nearly two-thirds (64%) of cancellations signed up for the program through a telemarketer.

[9] Churn rate represents the proportion of switches no longer enrolled in the program. The churn rate was 0.17% for MN residential customers in 2008 and 0.8% for Colorado. The churn rate for business customers was below 2% in 2008, but appears relatively higher than the residential rate. This figure may be somewhat overstated due to the multiple number of switches on average per business customer.

Program Enrollment Motivation

"Saving money on the electric bill" ranked highest as the most important reason for signing up for the Saver's Switch program among both deactivations (52%) and cancellations (64%). Ranked second, with 22% of both types of respondents, was "wanted to do my part to save energy." This may be interpreted as an altruistic motive somewhat different from "wanting to do my part for a cleaner environment" (6% overall) or "wanting to use less energy" (6% overall). Wanting to "do my part" to save energy implies acknowledgment of a collective need for energy savings specifically, as opposed to environmental or personal benefits.

Figure 36. Initial Reason For Enrolling in the Saver's Switch Program



Reasons for Cancellation and Deactivation

Reasons for leaving the program differed between deactivations and cancellations. The primary reason participants deactivated their enrollment was for comfort level reasons (43% compared to 7% for cancellations). Respondents that had cancelled their enrollment cited "other" reasons as the primary reason (33%) for cancelling. Among the varied "other" responses, the most common reason (28%) was that they had changed their mind about enrolling because they didn't use their AC much and/or "didn't think (they) needed it."

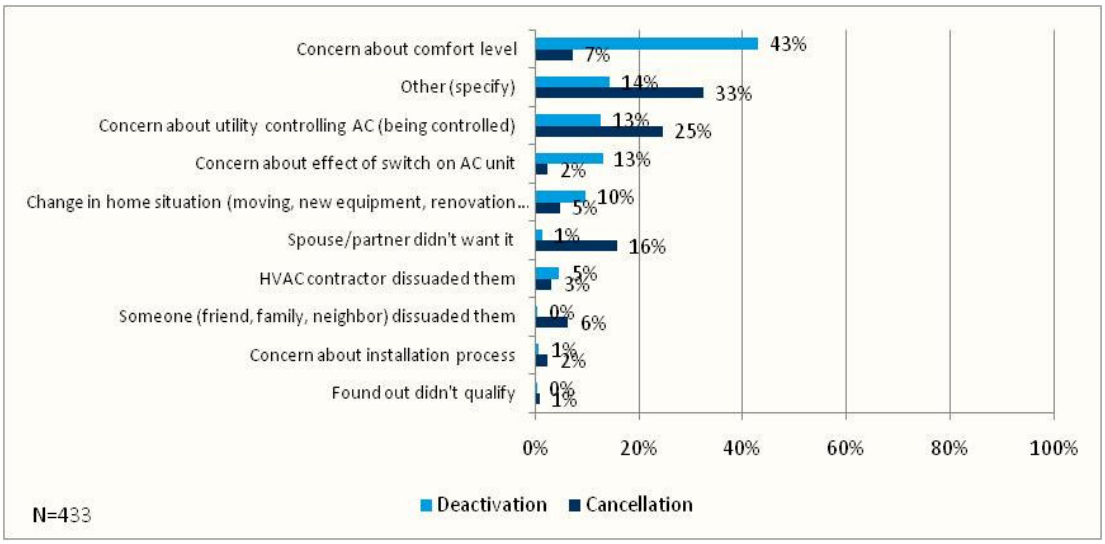
When deactivations were asked how their comfort level was affected, most indicated the house became too hot and the cycling period lasted longer than they had anticipated. Several indicated they had family members with medical conditions or that they work from home and a warm house was not acceptable for those reasons.

Cancellations were also concerned about the utility controlling their AC. Nearly twice as cancellations (25%) indicated this concern compared to deactivations (13%). As customers who cancel have not experienced being on the program, this concern is likely based on a projected or imagined effect rather than the actual effect of the program.

Disagreement within a household was a more common issue for cancellations than for deactivations, as 16% of cancellations indicated a spouse or partner did not want to be enrolled in the program, while 1% of deactivations cited this reason.

Only two people indicated they did not qualify for the program. One of the reasons given, that they "made too much income," was not a program requirement.

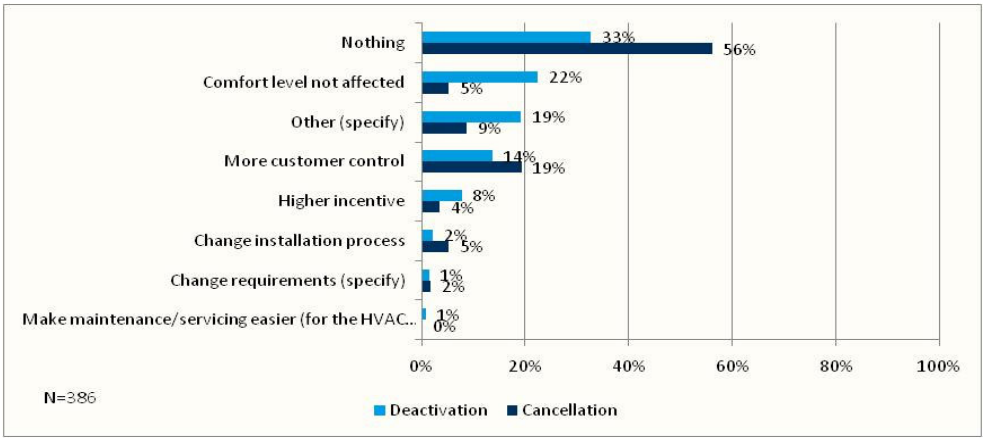
Figure 37. Reasons for Leaving the Program



Program Attractiveness

Respondents of both types were asked what they would change about the Saver's Switch program to make participation more attractive. Respondents were not prompted with a list of items but were required to volunteer a response. Contrary to predictions, that respondents would suggest a higher incentive, the highest response (40% overall) was that nothing would make the program more attractive. Only 6% indicated a higher incentive would make the program more attractive and 15% indicated the program could be more attractive if their comfort level was not affected. See Figure 38 for suggestions given by respondent type.

Figure 38. What would make the program more attractive?



Incentives and Program Features

A majority of both types of respondents indicated their participation would not be influenced by any of the incentives or program feature options presented. *For those who were more likely to consider staying enrolled, the most popular program feature was cycling at shorter intervals.* 39% overall indicated they would be likely to stay enrolled with such an option (42% in Minnesota). A Chi-square analysis yielded no significant differences between Colorado and Minnesota.

Table 25. Rating responses to Program Features

How likely is it that you would have stayed in the program if…	Unlikely (0-4 rating)	Neutral (5 rating)	Likely (6-10 rating)	Chi-Square Test Statistically Significant Difference?
(Colorado) How about the option to temporarily **'opt out'** of a cycling period one time during the summer (n=218)	68%	11%	20%	**Between 20% & 27%**
(Minnesota) How about the option to temporarily **'opt out'** of a cycling period one time during the summer (n=196)	65%	8%	27%	**No**
(CO) Xcel Energy cycled your AC for a **shorter interval** than currently done, making less of an impact on the temperature in	53%	11%	34%	**Between 34% & 42%**
(MN) Xcel Energy cycled your AC for a **shorter interval** than currently done, making less of an impact on the temperature in	47%	8%	42%	**No**
Rather than a credit to your bill, what if…				
(CO) Xcel Energy donated the money in your name to your **favorite charity** (n=220)	82%	11%	7%	**Between 7% & 14%**
(MN) Xcel Energy donated the money in your name to your **favorite charity** (n=200)	80%	8%	14%	**No**
(CO) Xcel Energy donated money to an **alternative energy project** (n=220)	80%	13%	8%	**Between 8% & 14%**
(MN) Xcel Energy donated money to an **alternative energy project** (n=200)	79%	9%	14%	**No**

Although a majority of respondents were not interested in either incentive option, Minnesota respondents were more responsive to both types of incentives than were Colorado respondents (37% versus 16-19%).

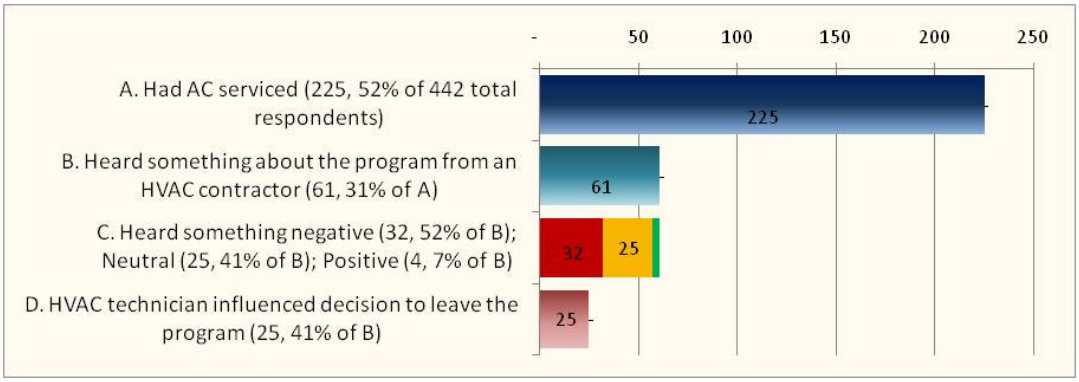
Table 26. Rating responses to Incentives

How likely is it that you would have stayed in the program if…	Unlikely (0-4 rating)	Neutral (5 rating)	Likely (6-10 rating)	Chi-Square Test Statistically Significant Difference?
Colorado) you received a **$50 credit** on your summer electric bill (n=224)	73%	12%	16%	**Between 16% & 19%**
(Colorado) you received a **15% credit** on your summer electric bill (n=202)	69%	12%	19%	**No**
(Minnesota) you received a **$60 credit** on your summer electric bill (n=221)	57%	9%	37%	**Between 37% & 37%**
(Minnesota) you received a **20% credit** on your summer electric bill (n=196)	58%	6%	37%	**No**

Cooling Equipment and Service

Breakage respondents (53% overall) were much more likely than current program participants (27%) to have their AC serviced or maintained within the past year. As AC service generally involves an HVAC technician, further questions followed for breakage respondents that had their AC serviced to better understand the level of influence HVAC technicians had with these respondents. Of those that did have their AC serviced, about a third (31%) heard something about the program from an HVAC technician. The comments from technicians were coded by evaluators as positive, neutral or negative. The results were slightly weighted in the direction of negative comments (52%) over neutral comments (41%). Only 7% indicated the HVAC technician made a positive comment about the program. Of those that had heard something about the program from an HVAC technician, twenty five (41%) indicated the HVAC technician influenced their decision to leave the program. Deactivation respondents (24 of the 25 overall) were more likely than cancellation respondents (1 of 25) to indicate they were influenced to leave the program.

Figure 39. Responses to HVAC Influence Illustrated



About three quarters of breakage respondents (74%) had programmable thermostats. As many of the demand response programs offered by other utilities use programmable thermostats as an incentive for their programs, this approach would have limited appeal where the saturation of programmable thermostats is already high.

Less than one in five (18%) breakage respondents kept their home cooling temperature in the 78 degrees or higher range as recommended in Xcel Energy's "60 Simple Ways" brochure. A majority (58%) kept the temperature in their home in the 72 - 77 degree range.

Segmentation

Again using Claritas PRIZM codes, respondents to the breakages survey overall reflected similar proportions of lifestage groups as was in the Saver's Switch population. Among cancellations, there were more conservative classics and cautious couples that respondent to the survey than were in the population. For deactivations, conservative classics were most likely to have concerns about comfort level as the primary reason for leaving the program.

Demographics

- Just over a quarter (28%) of the home size was reported to be 1500 - 2000 square feet The remaining breakage respondents were evenly distributed across the other size categories. This distribution of home size is very similar to that of program participants. See Appendix D for a comparison of demographics across surveys.
- Respondents were predominantly long-time Xcel Energy customers, with nearly 70% indicating they had been customers for ten or more years.
- Respondents' homes trended somewhat newer, with 40% built since 1990. More than half overall were built since 1980 (57%).
- Respondents were evenly divided by sex (47% Male; 53% Female).

Conclusions

One of the primary goals of this survey was to better understand the reasons participants chose to leave the program. Results indicated the reasons differ based on respondent type. While comfort level was the primary concern of those who deactivated, those who cancelled more often gave an "other" response or the "big brother" concern (of the utility controlling their AC) as the reason for not following through with enrollment.

As anticipated, respondents were motivated to sign up for the program primarily for the direct financial benefit they would receive. The second most common enrollment motivation, however, indicates a degree of social consciousness more closely aligned with doing one's part to save energy than environmental concerns. Although these two motivations may be closely related, respondents are more sensitized to energy use issues. Marketing messages should continue to promote the program by answering customers' "what's in it for me?" question, but may have additional success by showing that enrollment in Saver's Switch is a way for customers to "do their part to save energy". This applies not only to recruitment, but also to those currently enrolled. Participants may be encouraged to continue participating in the program if they are reminded that they are doing their part to save energy.

Most respondents were not receptive to additional program features or incentives. The most favored program feature was for cycling in shorter intervals to minimize a change in the home's temperature.

Although Xcel Energy has conducted prior research that indicated comfort level was not a major concern of program participants, the results presented in this report indicate that it is a common concern among "deactivation" respondents who are leaving the program. While some had legitimate concerns regarding the comfort of family members with medical conditions or family members who work out of the home, many simply have a strong preference regarding what feels comfortable. The temperature most respondents reported to be comfortable (72-77 degrees on a summer day) is cooler than Xcel Energy's recommended energy saving 78 degrees. Several respondents put temperature into a cost/benefit framework, indicating the incentive was not worth the sacrifice of their comfort. Despite the difficulty measuring and addressing individual preferences for comfort, providing more detailed information up front about what participants can expect on a control day may help customers with comfort concerns select not to participate. Thus, saving the program the expense of switch installations for customers who are not good candidates for the program.

The results provided in this report identify respondents' motivations, preferences, and reasons for leaving the program and will enable staff to focus marketing messages, target prospective recruits, and to address participants' real or perceived barriers.

HVAC Focus Groups

Cadmus facilitated five trade ally focus groups in June of 2009, targeting HVAC technicians in Colorado and Minnesota. The focus groups represented both large and small businesses. A total of 19 technicians participated in the Minnesota focus groups, and 11 participated in Colorado (Table 27). In addition to the focus groups, four additional phone interviews were conducted with Minnesota technicians who had indicated they would attend a focus group but were unable to attend as planned.

Table 27. Sample Disposition—HVAC Focus Groups

Colorado	11	36%
Minnesota	19	64%
Total	**30**	**100%**

The purpose of the HVAC technician focus groups and interviews was to better understand the HVAC technicians' perceptions and opinions of the Saver's Switch program, as well as understand what influence they have on customers within Xcel Energy's service territory. Cadmus prepared a focus group guide, which is provided in Appendix A. The focus group guide was comprised of primarily open-ended questions, which allowed Cadmus to explore additional relevant topics. The initial topics used to develop the guides, listed below, were originally identified in Task Six of the Saver's Switch program evaluation proposal.

1. Determine awareness of Xcel Energy Saver Switch program
2. Gauge attitude toward Xcel Energy in general
3. Discuss pros/cons of the Saver Switch product (Canon)
4. Discuss pros/cons of the Saver Switch program
5. Discuss pros/cons of consumer/business participation
6. Gauge HVAC impact on the consumer decision to participate
7. Gauge level of support for this program/other XE energy efficiency programs

Background

Customers occasionally experience outages with their AC unit. In most cases they call an HVAC technician of their choosing to diagnose and fix the problem. Problems with the AC unit are generally attributable to disrepair caused by lack of regular cleaning and maintenance or to older units in which parts are broken or worn out. On some occasions, customers call an HVAC technician when they feel the house is not as cool as they expect. In those instances, the HVAC technician may diagnose that the switch is cycling and the AC unit is functioning as designed. HVAC technicians' knowledge of the switch device is presumably limited as they are not involved in the installation of the device. Yet, their work and customer base often intersects with Saver's Switch participants and the device itself.

Minnesota Focus Groups

The findings below are the aggregated outcomes from the three Minnesota HVAC focus groups and four additional phone interviews. The groups consisted of HVAC installers, maintenance and service staff, and distributors. All participants worked with air conditioning units, some solely in the residential sector and others in both the commercial and residential sectors. No participants reported having experience with the Saver's Switch Electric hot water aspect of the program; therefore it is not addressed in this report.

Daily Challenge

To begin each session, participants were asked to share the central challenge they faced on a day-to-day basis. Nearly all participants focused their answers on customer satisfaction, which ranged from making sure customers have the right equipment to being appropriately price-sensitive on behalf of customers. The challenge mentioned the second most often was maintaining the quality of their employees, specifically the company's ability to ensure adequate training and appropriate customer contact. As one participant put it, employees must be "all customer service – an extension of the company."

Experience with Xcel Energy

When encouraged to share their personal and/or professional experience with Xcel Energy, participants reflected a range of opinions. Several indicated they had no problems, and they were mostly satisfied with Xcel Energy. Others indicated Xcel Energy responds quickly to reports of electric outages.

A few mentioned examples of experiences that shaped negative satisfaction ratings. The central frustration expressed was in finding the right person to talk with at Xcel Energy when they needed assistance with a technical problem or electric service issue. Another example mentioned referred to problems communicating on new construction projects. The technician reported "poor communication" between Xcel Energy and the property manager, which led to project delays when Xcel Energy was late setting up the electric service and "opening" the meter.

Although the majority of technicians did not report negative experiences with Xcel Energy, there is ample room to foster better working relationships with technicians through clear communication channels.

Energy-Efficiency Trends, Training, and Information

When participants were queried whether the demand for energy efficiency had changed over the last 5 years, there was general agreement it had increased. This increase has resulted in dealers stocking a larger number of high efficiency units and service technicians to keeping up-to-date on changing equipment technologies. One distributor claimed to have seen an 82-percent increase in demand from residential customers for energy-efficient products. Most participants noted an increase in customer interest in energy efficiency while (petroleum) gas prices were high, but when gas prices went down, customers' interest in efficiency waned. The downturn in the overall economy has again prompted interest in cost-saving energy efficient measures, but the long versus short term value of investing in energy efficient equipment is not widely understood.

At least one participant expressed frustration with increasing minimum efficiency standards on new appliances and equipment, as they translate to increased initial equipment prices. He suggested customers are put off by escalating prices, which makes it more difficult for him to encourage customers to purchase high efficiency units. Rebates were mentioned by several participants as a possible method to offset the increasing cost of high efficiency units.

The primary way participants reported learning about energy efficient equipment was through their suppliers. The suppliers used by HVAC contractors included, but were not limited to, Rheem, Trane, Carrier, HVAC Supply, and Goodman. Technicians reported that suppliers keep them informed of energy upgrades or equipment changes on a regular basis. While at least one participant commented that he learned of Xcel Energy rebates from the utility representative, he also indicated that communication with Xcel Energy was far less frequent than with his supplier.

Communication

When invited to share the most effective way to communicate with them on energy efficiency programs and/or rebates, the participants indicated three preferred methods:

- E-mail
- Direct mail
- Direct contact from the utility representative

When asked if they were interested in being notified when control days occurred, most participants responded affirmatively. When the question was initially posed, one participant noted he could get the information from the web, but that he "has no idea if the home is actually being controlled until I get there," and, therefore, general information that a control day is in effect is not all that helpful. After further discussion the general consensus was that notification could be helpful and could be more beneficial if technicians had a way to determine if their customers were being cycled and how long the cycling could continue.

When asked specifically how they would like to be notified of control days, preferences varied. Many indicated that text messaging would be the best option for contacting them once they were in the field. A few responded that e-mail would be sufficient, and several others indicated that a phone call would be preferred. Several participants also voiced that they thought notifying homeowners who have the Saver's switch installed would be beneficial; that way, customers could check if the air conditioning unit was simply being cycled before making a service call.

While HVAC technicians were uncertain of how receiving general program or technical information would benefit them, the majority of participants agreed that they could provide this type of information to homeowners, and that would likely be beneficial. Despite participants' uncertainty of the benefits of brochure-type information, the majority were interested in attending a breakfast session focusing on Saver's Switch and/or other Xcel Energy DSM/conservation programs to ensure their understanding of the program(s) and rebates were current.

> ***"Customers don't understand how it (the switch) works. I wish they had something more informative – the lights mean nothing, maybe an indicator that said 'in saving mode.'"***

Awareness of Saver's Switch Program

When invited to share how they first learned of the Saver's Switch program, roughly half indicated they first learned of the program from an Xcel Energy representative or marketing material and the other half by encountering the switch installed on units for which they had a service call.

Participants were asked to describe the program. Although participants had a rudimentary understanding of the program (i.e., they knew there was a switch, the unit was cycled or "turned off" for a period of time on hot days, and that the property owner (residential or commercial) received a rebate), they did not agree on the details of the program, such as those below:

- Why Xcel Energy sponsors the program
- How Xcel Energy benefits from the ability to control load, and by extension how all customers on the grid benefit
- The factors that prompt a control day
- How the switch is signaled and the length of time for control periods
- How the program is marketed to customers

For the purpose of the discussion, the description below (specific to the Minnesota Saver's Switch program) was provided to participants and read aloud. The program description was taken from Xcel Energy marketing materials provided to Cadmus prior to the focus groups. Participants were given the opportunity to ask clarifying questions before the group continued, to ensure all participants understood the basic concept of the program.

> **Program description:**
>
> *The program offers residential and business customers the opportunity to save money on electric energy and fuel cost charges by allowing Xcel Energy to install a Saver's Switch near the central air conditioner. The Saver's Switch is remotely activated and cycles the unit on and off (for 15-20 minutes at a time) at selected intervals on the hottest days of the summer. The furnace fan is not affected. The switch is typically activated on 10 to 15 days per summer.*

Customer Service Calls and Technician Influence

Participants universally agreed that the primary reason for customer AC service calls to technicians was lack of comfort on hot days. No participant could remember having a customer call due to a Saver's Switch malfunction. One participant reported that he had "serviced tens of thousands of systems with switches, [and it's] very rare that the switches go bad." Another participant viewed the switch as a "nonfactor" in his work, pointing out that although he's had a few customers ask him about it, he only "notices it when the switch is cycling." Technician identified two issues that they commonly face while servicing AC units:

- Time delay in restoring power to equipment with a Saver's Switch device after it has been serviced
- Customers' lack of awareness or knowledge concerning the switch

All participants acknowledged temporarily bypassing the switch in order to service a unit. In addition, several participants provided examples of permanently disconnecting the switch at a customer's request. While none of the participants thought the switch interfered with their ability to assess equipment problems, nearly all participants expressed frustration at having to wait an extra 7 (or more) minutes to make sure that switch-equipped AC systems turned on after servicing. Several participants indicated they had witnessed the switch remaining off for much longer than 15 to 20 minutes. One participant summed up the switch as a "necessary evil" from the technician's perspective, noting that the time delay was a "real concern." For the most part, participants stated that when they permanently disconnected a switch they told the customer to contact Xcel Energy. This was also the case in the event a switch failed. Participants' responses support anecdotal information provided to Xcel Energy that HVAC technicians are in some cases bypassing or disconnecting the switch, at the customer request, and not informing Xcel Energy staff.

Nearly all participants reported customers' lack of understanding of the program as a critical issue. While some acknowledged program benefits such as a chance for customers to save energy and receive a rebate, participants felt many customers truly did not understood what they were signing up for when they joined the program. In addition, nearly all participants reported that many customers did not remember signing up or that they had the Saver's Switch installed. The majority of the technicians had experienced customers' frustration when their homes or businesses remained uncomfortable as a result of a control period even though there was nothing wrong with the air conditioning unit. In addition to the comfort issue, customers were also irritated further when they were then presented a bill for the technician's time, even if the technician did not service the AC unit. Again, the technicians were particularly sensitive about the switch's time delay in restarting, in part, as it added more time to the customers' bill.

Nearly all of the participants felt they had a great deal of influence on customers who participated in the program. Some participants said they did recommend the program, when appropriate. For example, one participant highly recommends it for Section 8 housing where residents are not responsible for their utility bills. Another participant explained that he tries to make his customers aware of both the incentives and pitfalls. The majority of participants did not promote the program. As one participant put it, "I wouldn't promote a program our customers are not happy with." The general concern about promoting the program was that customers would identify the switch with the technician and when/if cycling made them uncomfortable would blame the technician. Several of the participants pointed out that the bottom line for customers is comfort, noting "most people who are unhappy couldn't care less about the 15-percent savings they get from the program." In summary, while HVAC technicians do not perceive their role as providing program information to customers, the nature of their work – servicing AC units – makes them a default source for program information. Increasing technicians' understanding of the program may improve the quality of information customers receive as well as increase customer awareness and understanding of the program.

Thirdly, a concern raised by several of participants was the impact of AC unit sizing in proportion to the space they are designed to cool. Technicians debated the impact of cycling on a properly sized unit. Proper sizing is a component of the North American Technician Excellence (NATE) certification for AC installation, assuring that a unit is not 'over-sized' with more capacity than necessary to cool the space in which it is installed. Several suggested the switch became a hindrance to a properly sized unit, making it impossible to cool the building down once it had been cycled off. The unit simply did not have the capacity to cool a facility or residence to the desired level when the compressor was being controlled. The combination of more narrowly defined AC sizing standards and the switch cycling the unit on the hottest days results in a much longer time needed to cool the house. This issue is often compounded on control days by customers' practice to keep their AC off during the day when they are not home. Many then expect the AC unit to quickly cool the house upon their arrival home. Providing technical information to HVAC technicians on how cycling works and its impact or lack of impact on the units may decrease the concerns above. Customers, too, could benefit from information that could influence how they use their AC, changing the expectation many have for AC units to cool a house by several degrees in a matter of an hour or less.

Program Suggestions

The following list highlights suggestions made by technicians to improve the program.

- Offer a technician incentive to promote the program
- Increase customer incentives
- Label indicator lights or install a screen that shows when the unit is being cycled
- Install a technician override button
- Install a limited customer override button
- Increase customer education
- Notify customers of control days
- Notify technicians of control days
- Install a display on the thermostat that shows when cycling is occurring
- Pair Saver's Switch with a programmable thermostat rebate incentive

Attitudes on Xcel Energy, Energy-Efficiency, and Conservation

The majority of participants indicated that they were somewhat familiar with other Xcel Energy programs. Nearly all had participated in and/or promoted a rebate on energy-efficient equipment. Only a handful of participants were aware of Xcel Energy events and/or trainings. In addition to the focus group discussions, participants were asked to fill out a questionnaire as part of the effort to determine HVAC technician attitudes of Xcel Energy. Questionnaires were filled out in the waiting room prior to the attending the focus group. See the table below for participant responses.

Table 28. Average rating by Minnesota technicians on the pre-discussion questionnaire

Question	Average rating[10]	Percent Negative (rating = 0-4)	Percent Neutral (rating = 5)	Percent Positive (rating = 6-10)
Overall satisfaction with Xcel Energy services (n=14)	7.1	7%	13%	73%
Level of agreement that Xcel Energy actively promotes conservation (n=15)	8.1	7%	13%	80%
Level of agreement that Xcel Energy offers rebates on energy efficient equipment (n=15)	9.3	0%	7%	93%
Importance to you/your company that Xcel Energy actively promotes conservation(n=15)	7.7	0%	13%	87%
Importance to you/your company that Xcel Energy offers rebates on energy efficient equipment (n=15)	8.6	7%	7%	87%

When asked to discuss what influenced their responses to the pre-discussion questionnaire (see Appendix A for the pre-discussion questionnaire) the participants suggested:

- Type and frequency of communication from Xcel Energy
- Level of service
- Program offerings
- Access to rebates
- Level of rebates
- Difficulty navigating the Web site

Additional Input

While recruiting participants, Cadmus staff collected voluntary feedback from HVAC technicians who could not or would not attend the focus groups. The most common suggestions included the following:

- Include a bypass switch or override method for service
- Time delay in restarting is irritating
- Tie an incentive to the Seasonal Energy Efficiency Ratio (SEER) rating with a higher incentive for higher SEER values.
- Notify technicians when units will be cycled
- Install indoor indicators near or on the thermostat
- Label the indicator lights on the switch to increase customer understanding

See Appendix C for full list of recruitment call feedback.

[10] Ratings are based on an extremely small sample and are not transferable to the general technician population.

Colorado Focus Groups

The findings below are aggregated from the two Colorado HVAC focus groups. As with the Minnesota groups, the groups consisted of HVAC installers, maintenance and service staff, and distributors. All questions were focused on the residential sector, as the Colorado program currently does not offer a Saver's Switch to nonresidential customers.

Daily Challenge

To begin each session, participants were asked to share key challenges they faced on a day-to-day basis. The top five challenges indentified were:

- Generating enough business, in light of the slowing economy
- Hiring good employees
- Satisfying customers
- Managing staffing and scheduling
- Managing cash flow

Experience with Xcel Energy

When encouraged to share their personal and/or professional experience with Xcel Energy, participants reflected a range of opinions. Nearly all participants were Xcel Energy customers, and in one group several had Saver's Switches installed on their own homes. Several indicated they had no problems and were mostly satisfied with Xcel Energy. Some indicated that Xcel Energy was "pretty professional" in that they responded quickly to reports of gas leaks and electric outages. One reflected positively, "We're on an approved list of technicians that are North American Technician Excellence (NATE) certified and we get a few crumbs from Xcel Energy that way." A few did share negative experiences that shaped their opinions, such as Xcel Energy's response time when an outage occurred. In this example the participant reported that while Xcel Energy had been able to restore power temporarily the power had gone out again hours later and he had to wait much longer for Xcel Energy to return and fix the source of the initial problem. Another gave a negative rating because he viewed Xcel Energy's HomeSmart program as competition. He felt strongly that Xcel Energy should not be in the HVAC/appliance servicing business.

Similarly to the responses in Minnesota, there appears to be room to create better working relationships with HVAC contractors in Colorado.

Energy-Efficiency Trends, Training, and Information

Although the majority of participants agreed the demand for energy efficiency equipment had increased over the last 5 years, they also indicated that cost remained a significant barrier for customers. As in Minnesota, participants responded to the increase in demand by stocking a larger number of high efficiency units and staying up-to-date with any changes in technology or service needs. When discussing the challenge of rising costs associated with high efficiency units, one participant pointed out that when Xcel Energy had offered double rebates he was able to sell more high efficiency equipment.

When queried about where they received information regarding energy-efficient equipment and programs, participants listed the following:

- Equipment manufacturers/distributors
- Sales representatives
- Trade publications
- Xcel Energy – direct mail/brochures
- Internet

Participants indicated they like to be informed about relevant topics to their business and that the information needs to be easily accessible.

Communication

When invited to share the most effective way Xcel Energy could communicate with them on energy efficiency programs and/or rebates, technicians reported preference for the following three methods:

- Direct contact from the utility representative
- E-mail
- Direct mail

When asked specifically if they were interested in being notified of control days, most participants said yes. Participants indicated e-mail and/or text messaging as the preferred methods of contact regarding control days. Several technicians noted their crews left the office by 8 a.m. and were sometimes difficult to reach while in the field. This suggests phone or text messaging as a more effective method to reach technicians, as control days are usually decided upon later in the day, closer in time to when the effects of weather and energy usage are evident.

The majority of participants agreed that offering program and technical information might be of use to their customers, but had mixed opinions as to how beneficial this information would be for technicians. The general feeling was that the "customers need the information" because many of them don't understand and/or don't remember they enlisted in the program. As discussed in the Minnesota findings, while technicians do not tend to view themselves as sources of information for the program they become so by default due to their contact with customers and therefore it is important they too understand the program and are able to communicate correct information.

Awareness of Saver's Switch Program

When invited to share how they first learned of the Saver's Switch program, nearly all participants indicated they first heard of the program through customers who had the switch installed.

Similar to Minnesota participants, when asked to describe the program, Colorado participants were able to demonstrate they had a rudimentary understanding, but were not able to articulate program details such as:

- Why Xcel Energy sponsors the program
- How Xcel Energy benefits from the ability to control load, and by extension how all customers on the grid benefit
- The factors that prompt a control day
- How the switch is signaled and the length of time for control periods

- How the program is marketed to customers

As in Minnesota, the Colorado participants were provided with a program description -specific to the Colorado program. After it was read out loud, participants were given the opportunity to ask clarifying questions before the group continued, to ensure all participants understood the basic concept of the program.

> **Program description:**
> *The program offers residential customers the opportunity to save money on electric energy and fuel cost charges by allowing Xcel Energy to install a Saver's Switch near the central air conditioner. The Saver's Switch is remotely activated and cycles the unit on and off (for 15-20 minutes at a time) at selected intervals on the hottest days of the summer. The furnace fan is not affected. The switch is typically activated on 10 to 15 days per summer.*

Customer Service Calls and Technician Influence

When invited to share the primary reason for service calls, both Colorado groups offered the same answer as those in Minnesota; customer calls were said to be "100-percent" related to comfort. Again, no participant could remember having a customer call due to a switch malfunction.

> ***"First thing I try to do is save my customers money – it would be great to get notification on control days. We may not be thinking about that – if we knew, we could say go out and look at the light before driving out to make an unnecessary service call."***

When prompted to estimate the percentage of customers serviced that had Saver's Switches installed, the participants gave a wide range, from 1 to 40%, with an average of 15%. When asked if they thought the switch interfered with diagnostic testing of the AC unit all participants said no, it did not interfere. During the discussion on maintenance, two methods for determining whether the switch was the source of the problem were mentioned:

- Use of a voltage meter
- Inspection of the indicator lights - "if the green light is on, the switch is fine."

A minority of participants said they used a voltage meter.

When discussing common issues – related to the Saver's Switch program –faced while servicing AC units the Colorado participants mentioned the same concerns as those in Minnesota:

- The time delay in restarting the equipment after it has been serviced
- Customers' lack of awareness/education concerning the switch

Nearly all participants acknowledged temporarily bypassing switches in order to service a unit. Only a few participants provided examples of permanently disconnecting the switch and always at the customers' request. Most participants said they told the customer to contact Xcel Energy if the switch was disconnected.

Several participants indicated they thought the marketing claim that "customers won't notice the effect of cycling" was not consistent with their experience. The same participants voiced disagreement with claims regarding the duration of cycling. They claimed to have witnessed cycling much longer than 15 to 20 minutes at a time and shared that this added to their frustration and the customers' confusion over how the program works. Some pointed out that the switch may cycle the compressor off for 15 minutes at a time but that there was no information about how long a cycling period lasts.

Customer confusion was reported by nearly all participants as a critical issue. Similar to the groups in Minnesota, participants were divided on the benefit of the program for homeowners. Some viewed the program as a chance for customers to save energy and receive a rebate, but several felt the customers truly did not understand what they were signing up for when they joined the program. The majority of the participants had experienced customers' irritation when they realized the air conditioning unit had not failed, even though their homes remained uncomfortable and they were presented with a bill for the technician's time.

In addition to the time delay and lack of customer awareness, participants voiced two concerns of their own; the impact of equipment sizing and insulation as they relate to the Saver's Switch. One participant explained how he thought AC unit sizing impacts the effect of Saver's Switch, saying "if the unit is sized correctly, they (the customers) will notice comfort issues when the switch is in cycling mode." The main concern was that properly sized units are designed to cool the exact proportions of the home for which they are installed and are unable to maintain a set temperature when the unit is being cycled. In addition to sizing, several participants discussed the impact of insulation that is at least to code if not better than code. Their concern was that if a home is poorly insulated and receives a higher degree of solar heat gain, the unit, regardless of its efficiency, will have a much more difficult time reaching the set temperature. Proper AC unit sizing and poor insulation can both increase the probability that customers will feel the effect of a control period.

All of the participants indicated they had great deal of influence over their customers. When the question was first posed one participant responded, "you (the technician) are telling the customer what brand (of equipment) to buy and they're going to buy whatever you tell them." A handful of participants shared that they promote the program, while a few were adamantly opposed to the program. The majority of participants, however, indicated that they left the decision of participation up to the customer and tried to remain neutral. As noted earlier in the report, HVAC technicians have a unique opportunity to communicate with customers at a critical moment i.e., when the unit is not performing as the customer would like. It is therefore important that technicians have a solid understanding of the program so that they can share accurate and appropriate program information with customers.

Program Suggestions

Many of the suggestions made by the Colorado participants to improve the program mirrored those offered in Minnesota. Suggestions included the following:

- Increase customer education – type and frequency
- Offer technician incentives to promote the program
- Install a technician override button
- Notify customers of control days
- Notify technicians of controls
- Install a display on the thermostat that would show when cycling was occurring

When asked what it would take to be an advocate of the program, the majority of participants mentioned two items: 1) increase availability of program educational materials and 2) offer technicians incentives.

Attitudes on Xcel Energy, Energy-Efficiency, and Conservation

As in Minnesota, the majority of participants indicated they were somewhat familiar with other Xcel Energy programs, and several said they had participated in equipment rebate programs.

Colorado participants were also asked to respond to a pre-discussion questionnaire regarding their attitudes on Xcel Energy in addition to participating in the focus group discussion. See Table 29 below for results.

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Table 29. **Average rating by Colorado technicians on the pre-discussion questionnaire**

Question	Average rating[11]	Percent Negative (rating = 0-4)	Percent Neutral (rating = 5)	Percent Positive (rating = 6-10)
Overall satisfaction with Xcel Energy services (n=23)	5.9	18%	27%	55%
Level of agreement that Xcel Energy actively promotes conservation (n=23)	7.4	9%	0%	91%
Level of agreement that Xcel Energy offers rebates on energy efficient equipment (n=21)	7.8	0%	9%	91%
Importance to you/your company that Xcel Energy actively promotes conservation (n=19)	7.4	0%	20%	80%
Importance to you/your company that Xcel Energy offers rebates on energy efficient equipment (n=19)	7.5	0%	10%	90%

When discussing what influenced their responses to the pre-discussion questionnaire (see Appendix A for pre-discussion questionnaire) the participants mentioned:

- Customer complaints
- Difficulty in reaching the right person to speak with at Xcel Energy
- Level of service
- Types of programs
- Types of and access to rebates
- Competition for HVAC customers

[11] Ratings are based an extremely small sample and are not transferable to the general technician population.

Additional Input

While recruiting participants for the focus groups in both states, Cadmus staff collected voluntary feedback from HVAC technicians who could not or would not attend the focus groups. The most common statements and suggestions, in order of frequency, included the following:

- Time delay in restarting the unit is irritating
- Notify technicians and homeowners when units are cycled
- Increase the amount of customer education
    - They forget they have a Saver's Switch
    - They don't understand the program
- "We would love to attend, but are way too busy this time of year"
- "We hate the program and do not recommend it to any customers"
- Customers don't like the program because it makes them uncomfortable, and we don't like it because by the time we get the air conditioning back on, it's extremely difficult for the unit to cool the house down.

See Appendix C for full list of recruitment call feedback.

Conclusions

Based on the findings in this report, the Cadmus team concluded that while the Saver's Switch program successfully enrolls customers and contributes to peak demand savings there is still ample room to increase HVAC technician buy-in. The most critical finding is the substantial need for increased program communications targeting technicians and customers participating in the program. This finding is supported by the high number of technicians who reported first learning about the program from sources other than Xcel Energy, as well as the proportion of customers reported to have forgotten or misunderstood how the program works. Based on these results the Cadmus team believes it is in Xcel Energy's best interest and that of its customers to increase efforts to engage technicians.

While many technicians in both Minnesota and Colorado present a barrier to customer participation in Xcel Energy's Saver's Switch program, some of the issues they cite as reasons for disconnecting switches and discouraging customer enrollment may be mitigated by increased program communication. The barrier presented by technicians appears to be directly related to their lack of understanding of how the program works, and its benefits. The Cadmus team believes that if technicians' knowledge of the program increases, they will be more capable of satisfying their customers who are enrolled in the Saver's Switch program. This is supported by participants who agree that information such as control day alerts and interpretation of the lighting display on the switch is valuable for improving service for customers in the program. Furthermore, as understanding of the program increases, the more effective technicians will be able to communicate accurate and timely program information to customers.

5. Benchmarking Analysis

6. Marketing Assessment

The program targets both residential and commercial customers and is marketed through a number of communications channels, including:

- Bill inserts
- Direct mail
- Newsletters
- Print advertising
- Customer Call Center
- Telemarketing
- E-mail marketing
- Door hangers

The 2009 Saver's Switch residential program marketing plan indicates a participation goal of 19,500 installations, with telemarketing, advertising, newsletters, and direct mail projected to drive the most enrollments within the marketing mix. Promotional efforts span the entire calendar year, with peak communications occurring pre-cooling season through peak cooling season (i.e., approximately March through August).

As part of The Cadmus Group's evaluation of Xcel Energy's Saver's Switch® programs in Minnesota and Colorado, Cadmus conducted a review of the marketing and communications materials that have been developed to promote program enrollment and educate customers on program details.

Creative and Messaging Platform

In reviewing the creative and messaging platform in program communications, Cadmus found that they contain imagery, messaging, and content that could be unclear or confusing to some customers about the program. Whether these aspects of program communications contribute directly to customer cancellations and deactivations is not certain. However, findings from the interviews with HVAC technicians seem to suggest that participants they interacted with on service calls often were not clear about what they were opting in for when they enrolled in the program.

Imagery

Lifestyle imagery of individuals and families enjoying cool, comfortable environs used in some of the program communications could be confusing to customers, in that they could be construed as promoting a high efficiency cooling program.

Messaging

Finally, in reviewing the documents, it is clear that there are some key message points about the program that have evolved through the years. Examples of these include:

1. Save 15% on your June-September electricity charges (the credit on the electricity bill).
2. The three main points listed on how Saver's Switch helps Xcel Energy provide reliable electricity to everyone in their neighborhood; reduces the need to build additional power plants; keeps electric rates lower in your community.
3. Language about what the customer is experiencing in terms of when switch is activated. (The info about independent study of homes, description of the different lights on the switch, etc.)

Messaging, such as "Sign up and save money on your summer electricity bills" and "Sign up to save 15% on your summer energy bills," could be misconstrued by customers as relating to rebates on high efficiency equipment or an energy conservation program, rather than a demand response program.

Also, clear descriptions of how the program works is vaguely worded or not stated up front in some program communications. In some of the communications, particularly some of the promotional brochures and on the Web site, specifics on how the program operates are not detailed or are relegated to less prominent positions within the copy where customers might miss them.

Language and Content

Program communications contain the use of technical terms that may not be familiar to customers. For example, some customers may not fully understand that the term "cycling" actually means that the unit turns off and then on again in frequent succession for a period of time. While some of the materials explain this process more explicitly, these more explicit explanations are not used consistently across all program materials.

It is also may be potentially confusing to customers that the fan continues to run, but the unit is shut off. In some communications this is stated more clearly, such as the business brochure where it says, "Your facility fans continue to circulate cooled air, helping to maintain your comfort."

Additionally, even when there is a description of how the program operates, it is not made clear as to what the customer might "experience" or "feel" in their home while their units are being cycled. While the independent study of 40 homes is cited in some communications, it doesn't necessarily directly speak to the customer in a manner that tells them what they might experience, how their home may feel, or what sounds (or no sounds) their unit might be making when the switch is activated. Communications need to address customer concerns directly by telling that these sounds are completely normal and do not mean that their air conditioner is malfunctioning (in other words, no need to call an HVAC contractor).

Overall, marketing materials need to be more transparent and clear about what the program actually is, how it works, that it is not a high efficiency program, without confusing imagery or program descriptions. Further, key message points are not always stated clearly and consistently

across all program communications, resulting in variations of content and messages across each piece.

Updating marketing materials to address these observations, if they have been confirmed in customer surveys, could go a long way towards addressing the customer misperceptions outlined in staff interviews as participation barriers.

Marketing and Media Mix

The marketing program operates almost year-round, with heavy emphasis on program communications in the pre-cooling season through end of the cooling season. There appears to be somewhat of a split between program communications designed to promote enrollment and communications intended to remind participating customers that they are enrolled in the program.

Additionally, in reviewing the 2009 marketing plan, it appears that most of the emphasis of program communications is on promotion of the program, as opposed to reminding and educating participating customers on program specifics. Activities such as telemarketing, direct mail, online communications, and advertising seem to be geared towards driving enrollment, while it may be that newsletters and a utility letter may be the only vehicles where customers are reminded of their enrollment in the program. This lack of ongoing communication and dialogue with participating customers distances the program from the customer, making room for misinformation about how often cycling occurs and what is involved in a cycling period. Misperceptions in lieu of accurate program information could be one of the drivers of cancellations and disconnections. Findings from interviews with HVAC technicians and staff seem to support this hypothesis.

Marketing Schedule

Because program communications tend to focus on promotion of enrollment most of the communications are centered on the spring and summer months. The program appears to go relatively quiet in its communications from late fall through late winter. We understand customers receive their financial bill credit on their October bills, but are unaware of other communications out to customers the remainder of the program year into early spring of the next year.

Both staff and HVAC technicians indicated in their interviews that customers often forget they are on the program, and call Xcel Energy or an AC service technician when they find their homes are insufficiently cool. It was noted in these interviews that staff see a connection with customer discomfort during cycling periods and program deactivation. A recommendation is that reminder and educational communications to participating customers accompany the October credit on the bill and that customers are explicitly told that they will be automatically renewed for another year of participation unless they opt out. Additionally, we would recommend that additional reminder communications be sent out periodically throughout the entire year, particularly at the start of the cooling season.

Conclusions

Overall, customers need to fully understand what they are signing up for when they enroll in Saver's Switch, and, most importantly, they need regular reminders throughout the year and at

important milestones (such as turnover to the new program year) that they are enrolled in the program. Additionally, these reminder communications need to be educational in nature and proactively address the concerns raised by customers to Xcel Energy staff and HVAC technicians that could be leading to cancellations and deactivations.

The following suggestions were developed to address the previous findings. These may be considered for implementation in light of available budget, staffing, and timing.

Imagery and Messaging

Consider including less lifestyle imagery in program communications and more imagery that incorporates real customers interacting with product or product images, such as images of what the switch looks like, where it is placed, consumer checking it, etc. Some of these images are in the Q & A booklets, but their wider use in program communications should be considered for future materials.

Currently, most program communications contain a subsection called "How does Saver's Switch work?" Consider rephrasing section or adding a section along the lines of "What you will experience" that includes some of the information outlined earlier in this report. Customers need to understand not only how the program works, but what will happen and, most importantly, what they will experience when the controls are activated. Helping them understand what to expect will help them to understand that their system is not broken, it is just cycling.

In interviews with Hunt Electric in Minnesota, interviewees provided examples for clarifying what customers can expect regarding installation, based on calls they often receive, such as how customers can identify installers and more specific information about when they can expect installation in their homes. Use these trade allies as partners in crafting effective and clear communications for the installation letters to new enrollees.

As mentioned above, several key messages have emerged about the program, but are not being used consistently across all communications. Consider outlining the top message points that program management, staff, and stakeholders can agree with and take care to consistently incorporate them in all program communications.

Marketing Mix and Schedule

Consider organizing the marketing plan components into those that promote enrollment and those that address cancellation and deactivations through reminder and educationally-focused communications. Tactics that promote enrollment could use mass communications channels like advertising and Web site or more targeted efforts like telemarketing. Examples of tactics for promotion include:

1. Web site
2. Bill inserts
3. E-grams
4. Energy Updates
5. ConnectSmart
6. Direct Mail
7. Advertising
8. Telemarketing

Program communications aimed at retaining participants should include very specific information about the program, how it operates, what the customer is experiencing, some troubleshooting tips, and clear information where the customer can go for help or questions. The timing of these communications should be at key milestones through the year: seasonal, during the October bill credit, perhaps weather-triggered at the first forecasted heat wave, etc.

The October bill credit, for example, should be used as an opportunity to thank the customer for their past participation, call their attention to the credit on their bill, alert the customer that they have been renewed for another year, and provide refresher details on how the program operates.

Program staff should take advantage of communications vehicles that allow for targeted communications such as online, mobile, utility bills, and phone. Examples of targeted communications could include:

1. Text messages
2. E-mail blasts
3. Reverse phone calls
4. Bill messages – if possible
5. Letter from utility on utility logo and not a postcard (which most people throw away and don't read)
6. Door hangers – which are left behind after installation. Consider producing something that is not as likely to be misplaced by the customer after the fact, such as a refrigerator magnet or calendar. These will hang up in the home and serve as a reminder to customers who have opted in to the program that they are now participating and should expect to experience days of cycling. Consider having the calendar be useful with seasonal tips and offers.

7. Conclusions and Recommendations

Cadmus has developed five primary conclusions emerging from the evaluation's key findings. Conclusions are coupled with recommendations Cadmus has developed for Xcel Energy's Saver's Switch program, and are discussed below.

1) **Conclusion: Saver's Switch participants report high levels of satisfaction with their participation experience.** Feedback from the majority of program participants, both residential and business, indicates high satisfaction levels with their participation. While most were satisfied with the enrollment process, the installation process, and timely receipts of their bill credits, participants recognize the value of timely and professional communication and service.

   Installers and staff also report program processes in place are running smoothly, and staffing levels are adequate to meet increasing goals.

1-A) **Recommendation: Continue high-quality program delivery**. Continue efforts to provide quality customer care when processing enrollments and installing switches. Cadmus also recommends Xcel Energy continue using formal communication channels with key program staff, including installers. Further, consider providing more regular updates and program information to technical staff, operations staff, and call center agents. Continue providing those with direct customer contact (such as customer service agents and installation technicians) with information that can help them educate customers about the program and promote its value.

2) **Conclusion: HVAC contractors do not present a significant barrier to program implementation.** Focus group discussions with HVAC contractors indicated those that understood how the switch worked and had more accurate information about the program were less likely to negatively influence customers. While HVAC contractors substantiated they have a small degree of influence with customers regarding the Saver's Switch program, and that influence is not always positive, the incidence of contact with HVAC contractors among participants and those leaving the program is minimal. Further, negative influences could not be substantiated in large numbers among respondents who had contact with HVAC technicians. Although HVAC contractors are often the first resource participants turn to when they think there is a problem with their AC unit, HVAC contractors represent a potential ally that could positively influence customers regarding the program.

2-A) **Recommendation**: **Continue efforts to build relationships with HVAC contractors** and provide them with information about the program. Also, continue to provide participants with information about the program that enables them to understand more about how the switch works on their air conditioners.

3) **Conclusion: Traditional marketing approaches, augmented by a segmentation and target marketing approach, are effective methods for promoting the program.** The marketing methods implemented in 2009, including bill inserts, direct mail, telemarketing, target marketing, and advertising, were successful for meeting increased participation goals in Minnesota and doubling the number of new program participants in Colorado from those in 2008. Primary awareness of the Saver's Switch program comes

through bill inserts and direct mail. Advertising and event promotions support the primary methods, but few customers credit them as the source of their program awareness. The Claritas segmentation schema using Prizm codes to classify customers by their interests and purchase patterns identified specific targets that may be more inclined to enroll in the program.

3-A) **Recommendation**: **Continue use of direct mail, bill inserts, and telemarketing** as participants cited these channels most often when first hearing about the Saver's Switch program. Include promotions that drive more sign-ups to the Web; this is a cost-efficient but underutilized channel for enrollment. Target direct mail to Claritas segments, including Accumulated Wealth, Young Accumulators, Conservative Classics, and Sustaining Families.

4) **Conclusion: Marketing materials, such as program brochures and direct mail pieces, have some missing information and ambiguous messaging.** Customers want to know what they can expect when the switch cycles their air conditioner. Marketing materials minimize the effect of cycling on participants. While one of the reasons for the program enjoying high satisfaction levels is precisely because participants forget the switch is there, there is also a downside to minimizing the program's impact on participants.

When customers experience discomfort, they often assume something is wrong with their air conditioner. This can lead to an expensive service call or even to withdrawing from the program. Participants that "deactivated" often cited comfort issues as their reasons for leaving the program. By clarifying what participants can expect when cycling is in effect, prospective participants with special needs for cooling in summer may be better able to determine they are not a good fit for the program.

Another missing piece is information specific to renters. The residential participant survey found renters were largely underrepresented. Although many do not qualify, there may be untapped potential with renters if specific promotional information are targeted to landlords and renters.

As observed in marketing materials, several key messages have emerged about the program, but they are not being used consistently across all communications. Messaging used in current marketing pieces can also be confusing. A majority of both business and residential participants enroll in the program because they think it will lower their electric bills by reducing usage. Many are disappointed when they see no noticeable effect on their bill statements. Messaging that describes "savings" can be misconstrued to mean energy savings.

4-A) **Recommendation**: **Refine marketing materials to address missing information and clarify the messaging around "savings**." Program communications aimed at retaining participants should include: very specific information about the program, how it operates, what the customer experiences, some troubleshooting tips, and clear information where the customer can go for help or questions. Xcel Energy should consider outlining the top message points so program management, staff, and stakeholders can agree with and take care to consistently incorporate them in all program communications. When referring to the program incentive, avoid messaging that refers to "savings," which could be

interpreted as energy savings. Clarify benefits to individual participants by referring to the 15% bill discount or bill credits. The utility should also consider developing a marketing piece to target landlords and renters.

5) **Conclusion: Participants could benefit from more frequent communication from the program.** With most if not all the marketing efforts focused on recruitment, participants are only reminded about their involvement in the program when cycling is in effect and by a single line in their October electric bills. Although the program is designed to be low-engagement, participants recognize a need for more information about the program .

5-A) **Recommendation: Enhance communication with participants by including additional points of contact.** Consider sending a reminder postcard or e-mail to participants in the spring, reminding them they are enrolled in the program and how they can determine if the switch is in cycling mode. Also, consider including tips regarding regular AC maintenance, such as keeping units free of debris and changing furnace filters. This will remind them they may experience AC cycling in the months ahead, and would minimize the chance that participants might mistake a cycling AC unit for a one needing repair.

Providing follow-up communication in September that prompts participants to watch for the Saver's Switch credit in their bill could also increase participants' engagement with the program. Such a communication could also inform them how many control days were called that summer in their area and remind them of how their participation contributes to overall goals for keeping electric bills low.

List of Appendices

Due to the document size , Appendices are provided separately

Appendix A: Data Collection Instruments

Appendix B: Quantitative Survey Frequencies and Crosstabs

Appendix C: Qualitative Verbatim Comments

Appendix D: Table of Survey comparisons

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