

SMART THERMOSTAT PROGRAM PROCESS EVALUATION

FINAL

Prepared for

**San Diego Gas and Electric Company
San Diego, California**

Prepared by

**XENERGY Inc.
Oakland, California**

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This report presents the results of a process evaluation conducted for SDG&E's Smart Thermostat Program. This process evaluation was conducted by XENERGY during February – November 2002 and involved a review of available and relevant program materials, in-depth interviews with key utility and vendor contacts, and pre- and post-curtailement customer surveys.

1.1 PROGRAM BACKGROUND

This program was designed to test the viability of a new approach to residential load control and demand responsiveness, through the use of Internet technology and thermostats to affect residential air conditioning use. Through the program, customers are provided the necessary technology installation and a small incentive for program participation. The equipment deployed allows SDG&E control of the thermostat during an electrical emergency, yet allows the customer the ability to override the company signal remotely or directly at the thermostat.

1.2 EVALUATION FINDINGS

Overall, customer reactions to the program have been positive – the application package was considered to be informative, SDG&E and Carrier call center staff were reported to have been very helpful, and the installation process was highly rated by participants for quality and professionalism. However, the program has suffered in several areas, ranging from marketing effectiveness to installation timeliness. The following is a summary of the principal conclusions and recommendations regarding these problem areas:

- Initially, the program suffered from low customer response. However, additional direct mailings were implemented in 2002 such that approximately 4% of the target market is currently participating in the program.
- The financial and operational benefits of programmable thermostats represent more effective marketing messages, as compared to the waning benefits of “doing your part” to help out in an energy crisis. In addition, participant education is needed to ensure that the programmable features of the new thermostats are being used properly. The customer survey results suggest that only 25% of participants are using the programmable features of their new thermostats.
- The program suffered from considerable problems with regard to lead tracking, lags in the installation process, and inadequate customer care and follow-up. The systems established to avoid the problems should continue to be monitored for effectiveness.

This report presents the results of a process evaluation conducted for SDG&E's Smart Thermostat Program. It includes background information on the program and this evaluation effort, an overview of the evaluation approach, highlights from the evaluation, and a summary of the key evaluation findings and recommendations.

2.1 BACKGROUND

On March 27, 2001, the CPUC issued Decision 01-03-073 mandating SDG&E to implement a program designed to test the viability of a new approach to residential load control and demand responsiveness, through the use of Internet technology and thermostats to affect residential air conditioning use. This program is designed to include approximately 5,000 residential customers representing an estimated 4 MW in peak demand reduction before 2002 year-end. Through the program, customers are provided the necessary technology installation and a small incentive for program participation. The equipment deployed allows SDG&E control of the thermostat during an electrical emergency, yet allows the customer the ability to override the company signal remotely or directly at the thermostat. The Energy Division recommended a budget of \$3.9 million per program year.

SDG&E was required to evaluate this program effort, including both a process evaluation and a load impact evaluation component. The primary objectives of the process evaluation are to assess how efficiently and effectively SDG&E runs the program and make suggestions for improvements. Specifically, the process evaluation addresses the following: marketing of the program, effectiveness of targeting specific customer groups, the customer sign-up process, timeliness of installation, customer problem resolution, customer satisfaction, use of new thermostats, and recommendations for improvements.

The load impact evaluation will determine the aggregate demand reduction and energy savings from curtailment(s)¹. To the degree possible, it will associate those savings with specific customer groups based on consumption, geography and income level.

2.2 APPROACH

The principal data-collection activities associated with the process evaluation include the assimilation and review of all available and relevant program materials, interviews with key utility and vendor contacts, and customer surveys.

¹ During the summer of 2002, SDG&E implemented only one control, which lasted approximately two hours on the afternoon of July 10, 2002.

2.2.1 Review of Program Materials

During the project initiation meeting, XENERGY was provided with copies of relevant program-related materials and a summary of program procedures developed by the SDG&E program manager. These materials were reviewed to gain basic program intelligence and insight helpful for the interviewing process. The information contained in the program materials, as well as the input obtained during the project initiation meeting, aided in developing the program staff/contractor interview guide and the customer survey instruments.

2.2.2 Utility Staff and Contractor Interviews

In February-March 2002, interviews were conducted with relevant staff involved in the program design, marketing, and implementation. This included SDG&E staff as well as outside contractors, as shown in Table 2-1.

**Table 2-1
Program Staff/Contractor Interview List**

Name	Company	Program Responsibility
Rose Fowler	SDG&E	Program Manager
Kimberly Boelter	SDG&E	Program Support
Pete Pierret	Carrier	Product Manager
Moira Buckley	Carrier	Program Manager, West Coast
Delaine Pedevill	Southern California Air Conditioning Distributors (SCACD)	Project Support
Brian	Accu Air	HVAC Dealer
Phil	ASI Hastings	HVAC Dealer
Justin	MN Mauzy Mechanical	HVAC Dealer

In-person interviews were conducted with SDG&E staff, followed by telephone interviews with contractors. Issues explored during these interviews included:

- How/why were the target market segments for this program selected? What portion of each segment has been reached by the program?
- How is the program marketed? Have recruitment efforts and materials been effective?
- What are the main drivers influencing participation (and nonparticipation)?
- Have customers been satisfied with their participation decision?
- Have there been any problems with the implementation of the program (i.e., meter installation, data collection, etc.)?

- Has program staff been satisfied with all aspects of the program design, including marketing and recruitment efforts, implementation processes, etc.? What improvements are suggested? Why?
- Is there adequate and effective coordination between all parties involved in the program implementation (e.g., utilities, vendors, installation crews, etc.)?
- Is the delivery of the program, as currently designed, efficient? What improvements could be made?

2.2.3 Customer Surveys

Two waves of customer surveys were conducted for this evaluation. The first survey was administered in March-April 2002 with a sample of participants and non-participants. The objectives of this survey were to:

- Assess participants' experiences with the program prior to the implementation of controls, and
- Evaluate the recruitment processes and reasons for non-participation.

The second survey was administered in November 2002 with a sample of participants who had been controlled during the one Stage 2 emergency curtailment call in July 2002. This survey was intended to assess participants' satisfaction with the operation of the new thermostats and to better understand their behavior during the control period.

Pre-Curtailment Customer Survey

The pre-curtailment customer survey was conducted with SDG&E customers who are currently participating in the program, as well as a sample of targeted non-participants. Surveys with participants were designed to assess customers' experiences with the program prior to the implementation of controls. Participants were asked about the program marketing and recruitment efforts, the sign-up process, and the installation phase. Participants were also asked about their current level of satisfaction with the program, as well as suggestions for improving the program. Non-participant interviews have been designed to provide insight into the recruitment effectiveness, reasons for nonparticipation, and suggestions for program improvement. Copies of the pre-curtailment customer survey instruments are included in Appendix A.

The sample design for the pre-curtailment customer survey is presented in Table 2-2. As shown, a census of participants to-date was conducted, and a sample design was established for non-participants that allowed for representation among the targeted customer groups; i.e., high consumption/hot climate and low income. Non-participants were identified from the pool of customers who had received a mailer from SDG&E attempting to recruit them into the program.

Table 2-2
Sample Design for Pre-Curtailment Customer Surveys

	Participant Quota	Non-Participant Quota
High consumption/Hot Climate	--	70
Low Income	--	30
Total	100	100

The Gilmore Research Group (Gilmore) was selected through a competitive bid process to conduct the customer surveys. The survey research began in mid-March 2002 and was completed in early April 2002. Gilmore completed a total of 131 surveys with participants, and 100 surveys with non-participants (70 in high consumption/hot climate quota group, and 30 in low-income quota group). It was not possible to screen participants from the list of non-participants² and, as a result, 31 surveys were completed with customers from the non-participant sample list who during the survey identified themselves as program participants (i.e., reported that they had a free programmable thermostat installed by SDG&E through the program). These 31 participants interviews were completed after the quota of 100 was already achieved.

Post-Curtailment Customer Surveys

The post-curtailment customer survey was conducted in November 2002 with SDG&E customers who had their new thermostats installed during the control period (July 2002). This survey was designed to assess:

- Satisfaction with the new thermostats, as well as program processes and procedures,
- Awareness of and behavior during the control period, and
- Use of new thermostat, and comparison to prior experiences with programmable thermostats.

A copy of the post-curtailment customer survey instrument is included in Appendix B.

A total of 102 surveys were conducted with participants who had their new thermostats installed prior to the control period in mid-July 2002. These participants were sampled from a database supplied by SDG&E that contained 2,689 unique participants. Some participants had more than one thermostat installed such that there were a total of 3,040 thermostats accounted for in this database. The sample design for the post-curtailment customer survey is presented in Table 2-3.

² Account numbers were missing for participants in the extract received from SDG&E's program tracking database.

Table 2-3
Sample Design for Post-Curtailment Customer Survey

	Low-Income Participants	Metered Participants	Other Participants
Number of participants in sample frame	110	51	2,528
Survey Quota	25	25	50
Number of Completed Surveys	25	26	51

As shown, the sample was allocated across three distinct participant segments:

- Low-income customers
- Metered participants
- Other participants.

Low-income customers were a specific group targeted by SDG&E in its recruitment efforts, and metered participants included those customers for whom metering equipment was installed (for impact evaluation purposes)³. These customers were over-sampled in order to assess whether or not there were any differences between these two target groups and other participants.

2.3 EVALUATION HIGHLIGHTS

This section presents highlights from the process evaluation research. It includes topics related to program marketing; a description of the program incentives and overall program organization; issues related to program delivery (i.e., lead tracking, customer call centers, equipment installation, etc.); customer satisfaction issues; motivations for and barriers to program participation; customer awareness/behavior during the control period; use of new thermostat; and a summary of the main evaluation findings and recommendations.

2.3.1 Program Marketing

Targeting Strategy

The targeting strategy for the program was prescribed by the CPUC in D.01-03-073, the decision mandating the program. The decision directed SDG&E to target the following three customer groups:

³ There were two metered groups in the sample frame. “Metered Group A” was controlled by SDG&E during the Stage 2 emergency, and “Metered Group B” was not. The sample of metered participants included in the post-curtailment survey was pulled from “Metered Group A.”

1. Residential customer whose average monthly electricity consumption is greater than average for their customer class, with the exact specified consumption level to be determined by SDG&E
2. Residential customers residing in geographical areas in SDG&E's service territory known to have high electricity consumption due to climate
3. Residential customers residing in known limited-to-moderate-income areas.

Medical baseline customers are not permitted to participate due to the potential air conditioner needs of these customers.

SDG&E met criteria 1 and 2 by selecting customers from CEC Climate Zone 10 that had average monthly summer consumption of 700kWh or greater. Data from MIRACLE XIII, SDG&E's residential appliance saturation survey, was used to estimate the average consumption for those residing in SDG&E's Transitional Climate Zone with central air conditioning. The average monthly summer kWh consumption for SDG&E's Transitional Climate Zone residents with central air conditioners is 700 kWh. The Transitional Climate Zone was used as a proxy for CEC Climate Zone 10, since the MIRACLE survey data were collected for the SDG&E climate zones (Maritime, Coastal, and Transitional zones). Residents in CEC Climate Zone 10 with average monthly summer consumption of 700 kWh or greater were selected.

Criteria 3 was met by selecting customers under SDG&E's low-income rate class, the DR-LI rate, in CEC Climate Zone 10, whose average monthly summer consumption was 700 kWh or greater.

Marketing List

An inspection of SDG&E's master file produced approximately 70,000 customers in CEC Climatic Zone 10 with a summer history of 700 kWh or more with a DR (Single-Family Dwellings) and DR-LI (Single-Family Dwellings, Low-Income) rate. To reduce returned mail, the file was reviewed and purged of customers with military accounts and mailing addresses that differed from the service address. The process resulted in a final quantity of 65,000 customers.

Zip Direct was selected as the fulfillment house to mail applications to the targeted customers. Mailings were implemented randomly in groupings of 10,000 to better control the customer response. Due to low response, second mailings have been directed to the originally targeted group of customers.

In an effort to increase participation, an additional mailing was conducted during October 2002 and a follow-up mailing was conducted approximately one month later in November 2002. Targeted customers for these mailings included those in CEC Climate Zone 10 with average monthly summer consumption at least 600 kWh. This lower consumption threshold increased the number of targets by about 19,000.

Table 2-4 shows the dates and quantity of pieces mailed to targeted households. This table shows initial and follow-up mailings.

**Table 2-4
Program Mailings**

Mail Date	Pieces Mailed
Oct. 2001	10,000
Nov. 2001	20,000
Feb. 2002	20,000
April. 2002	46,500
Aug. 2002	36,500
Oct. 2002	19,400
Nov. 2002	19,400
Total Mailed	171,800

Customer Response

As mentioned above, this program was designed to include approximately 5,000 residential customers before 2002 year-end. The goal was to install 1,000 thermostats in 2001 and another 4,000 by May 1, 2002. As of December 31, 2001, SDG&E reported that 982 applications had been received, but only 134 thermostats had been installed. In March 2002, SDG&E provided a database that indicated approximately 850 thermostats had been installed. In November 2002, SDG&E provided a database that indicated approximately 3,000 thermostats had been installed.

Marketing Materials

SDG&E's Corporate Communications group designed two versions of the mailer to test customer response. Version A focused on the incentive amounts while Version B emphasized how customers could "do their part" in helping reduce the demand for electricity during times of critical energy shortages. SDG&E monitored responses to determine to which approach customers were more receptive. According to the SDG&E program manager, there appeared to be no difference in response.

The mailer provides an overview of the program and a simple 3.5-by-5.5-in. application form. The customer is directed to fill out the information, tear out the card, and mail back the postage-paid card.

Customer Reactions to SDG&E Mailer

The pre-curtailment customer survey (March-April 2002) was designed to explore customer reactions to the program mailer. Specifically, participants and non-participants who recalled receiving SDG&E's application package in the mail were asked to report what they felt were the "main messages" SDG&E was trying to get across in the mailer. Table 2-5 summarizes participant and non-participant responses.

Table 2-5
Recall of Main Messages of SDG&E Application Package

Main Messages	Percentage of Respondents	
	Participants	Non-Participants
To save energy/cut down on electricity use	48%	51%
To reduce energy use during peak times	22%	0%
To save money/lower electricity bill	16%	25%
To prevent blackouts	10%	0%
That I'd get a free thermostat	8%	10%
How much money I'd get in incentives	5%	8%
How to participate (fill out an application, call SDG&E)	1%	0%
How thermostat would control AC temperature	0%	18%
To "do my part" to reduce electricity demand	0%	3%
Who was eligible / ineligible to participate	0%	0%
How I could override if I didn't want my AC temperature raised	0%	0%
Other	3%	3%
Don't know	8%	20%
Refused	0%	0%
<i>Number of Responses</i>	<i>106</i>	<i>98</i>
<i>Number of Respondents¹</i>	<i>87</i>	<i>71</i>

¹ Multiple responses were allowed. As a result, the percentages sum to more than 100%. Percentages are based on the number of respondents.

As shown, most felt the main message SDG&E was trying to get across had to do with “saving energy” and “cutting down on electricity use.” About half of the participants (48%) and half of the non-participants (51%) reported this response. Participants and non-participants also recalled the message involved “saving money” and “lower electricity bills” (16% and 25%, respectively). About 10% of the participants recalled “preventing blackouts” as part of the message of the mailer. None of the non-participants mentioned this response, although 3% recalled the message of “doing their part” to reduce electricity demand. Participants were more likely than non-participants to recall the message of reducing electricity use during peak times (22% vs. 0%), whereas non-participants were more likely than participants to recall that the thermostat would control the AC temperature (18% vs. 0%).

Few participants and non-participants recalled specific benefits of the program that were promoted in the application package – getting the free thermostat (8% and 10%, respectively), and the amount of money offered in incentives (5% and 8%).

Respondents who recalled receiving SDG&E’s application package were asked to indicate how informative they felt the information was. Respondents rated the package on a scale of 1 to 5, where 1 meant “not at all informative” and 5 meant “very informative.” Responses are summarized in Table 2-6. As shown, on average, respondents felt the application package was informative (average 4.10). There is little difference in participant and non-participant ratings.

Table 2-6
How Informative Was SDG&E's Application Package

Response	Percent of Respondents	
	Participants	Non-Participants
1 (Not at all informative)	0%	1%
2	2%	6%
3	15%	15%
4	36%	21%
5 (Very informative)	36%	30%
Don't know	9%	27%
Refused	2%	0%
<i>Number of Respondents</i>	87	71
<i>Average</i>	4.18	3.98

Overall, very few respondents offered constructive suggestions for improving the application package. Most indicated that the information should have provided more specific details or explanation about the program (but none of the respondents offered specific suggestions for what details or aspects of the program were missing from the package).

Media Coverage

In addition to the direct marketing efforts, television stations Channel 9 and Channel 10 provided media coverage for the program. Leonard Villareal interviewed a satisfied Smart Thermostat customer while explaining the program benefits and the incentives. Rod Luck covered various energy-efficiency programs and also referred to the Smart Thermostat program. Customers were encouraged to call the SDG&E call center for more information. The first news release produced a flood of phone calls, which according to SDG&E resulted in 224 application requests. The second news release occurred December 31, 2001 resulting in 100 application requests.

After completing pending installs and additional targeted mailings, SDG&E's Media Relations group may coordinate a newspaper article in the Union Tribune to further promote customer interest.

SDG&E Website

Finally, information about the program was posted on SDG&E's website in January 2002, in response to the interest generated from the television coverage.

Sources of Program Awareness

The pre-curtailed customer survey (March-April 2002) was also designed to address the effectiveness of different marketing channels in reaching customers with information about the program. SDG&E's mailer appears to have been the most effective in reaching both participants and non-participants.

For example, nearly half of participants (46%) were first made aware of the program via the application package mailed to them directly by SDG&E. Other sources of awareness among participants included television programs (13%), word-of-mouth (8%), articles/advertisements (4%), and bill inserts (4%). Another 4% indicated that the thermostat was already installed when they moved into their home. HVAC contractors reportedly made 3% of participants aware of the program. Only one respondent reported being made aware of the program via SDG&E's website, and one other heard of the program from SDG&E's customer call center.

Of those who did not report being made aware by this mailer, a significant portion recalled receiving the package – overall, 87 participants (66%) recalled receiving the package.

In addition, most of the non-participants (67%) recalled receiving SDG&E's program application package in the mail. All of the non-participants surveyed (by design) were aware of the program. Many were made aware through the mailer (37%), others were made aware through television programs (11%), word-of-mouth (10%), and articles/advertisements (6%). A few non-participants (3% or less) reported being made aware of the program via SDG&E's customer call center, the radio, SDG&E's website, home/trade shows, and bill inserts.

2.3.2 Program Incentives

In Decision 01-03-073, the Commission stated, “the program administrator shall set a program incentive, which may include an annual program incentive, override penalties, and/or on-peak interruption bonuses.” In addition, the Energy Division recommended “that the customer receive an incentive of \$100 at the end of each year of program participation. The incentive would be reduced by \$2 each time the default thermostat setting is overridden, although it would never be less than \$0.”

SDG&E set a maximum limit of 20 curtailments per calendar year, and decided on the following incentive amounts: \$20 for year 2001, and \$100 for years 2002, 2003 and 2004. The incentive for year 2001 was set at \$20, since the program began implementation in the winter of 2001 and no curtailments would be initiated. Overrides in 2002 and thereafter are to be penalized at \$2 each.

The incentive may differ depending on the time of the year the customer enrolls to avoid paying the same amount to customers that enroll late in the year and those that have participated throughout the year. Customers that call in to shut off service will receive payment within 3 weeks of shut off.

2.3.3 Program Organization

The organization and responsibilities of program entities is shown in Table 2-7.

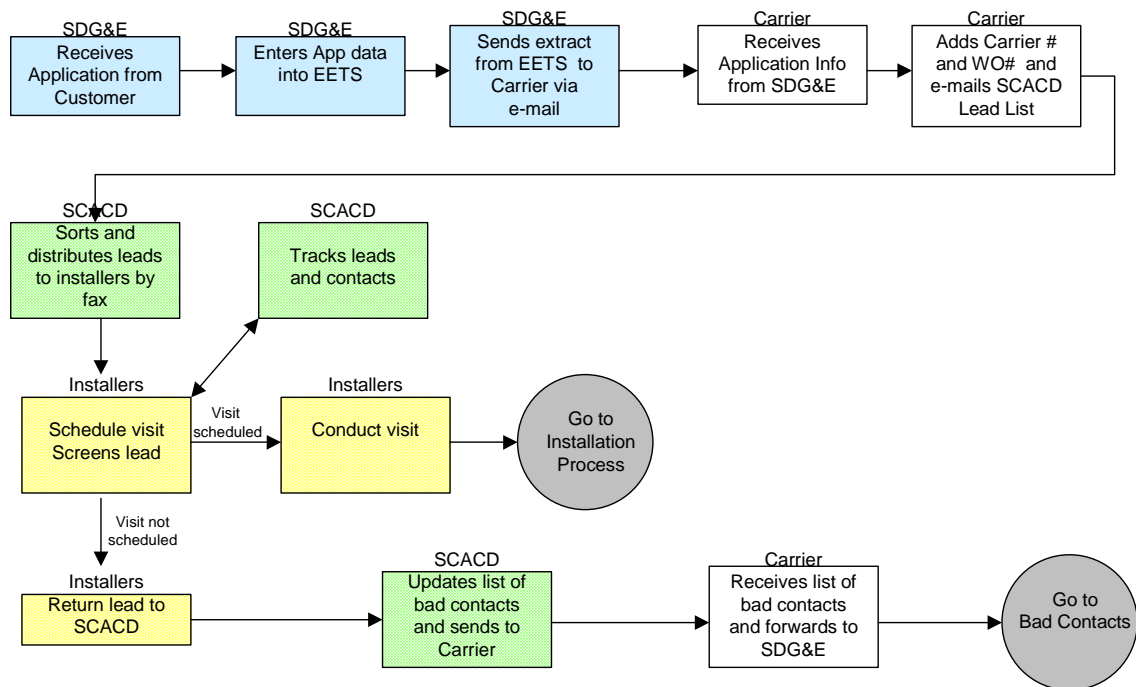
**Table 2-7
Program Organization and Responsibilities**

Company	Description	Responsibilities
SDG&E	Program Manager accountable to the CPUC and State of California for the management and operation of the program	Marketing Lead generation Initial application processing Draw sample for interval metering Install interval meters Manage data collection from interval meters
Carrier	Prime contractor with SDG&E for implementing the program.	Processing of leads Maintains Call Center to address customer concerns regarding thermostat and hardware Troubleshooting
Southern California Air Conditioning Distributors (SCACD)	Subcontractor to Carrier responsible for coordinating lead mgt and installation activities in SDG&E area	Coordinates lead management and installation activities with dealers Manages lead tracking Performs dealer accounting tasks
Various local HVAC contractors	Subcontractor to Carrier for installation of Smart Thermostat hardware in customer dwellings	Installation of thermostat and I/O board, and initial customer training on programming Performs troubleshooting duties as assigned by SCACD
Silicon Energy	Subcontractor to Carrier for providing software and support for controlling and managing the signals sent to activate program	Maintains software systems providing link to controlling thermostats
SkyTel Telemetry Services	Subcontractor to Carrier for wireless communications between SmartThermostat and Silicon Energy.	Provides wireless communications to transmit digital information and commands to and from the SmartThermostat and Silicon Energy's system.
Honeywell/DMC	Subcontractor to Carrier to assist in the installation of Smart Thermostat	Same tasks as local HVAC contractors

2.3.4 Program Delivery Overview

Program delivery activities start with the receipt of a qualified application by SDG&E and ends with the successful installation of the Smart Thermostat and input/output (I/O) board at the residence. The overall operation of the program delivery system is illustrated in Figure 2-1.

Figure 2-1
SDG&E Smart Thermostat Program Delivery Overview



Lead Tracking

Completed applications are received by SDG&E’s mailroom and forwarded to Smart Thermostat Program staff via interoffice mail.

Customer data from the application is input into SDG&E’s Energy Efficiency Tracking System (EETS) by program staff. This information includes customer name, address, and telephone number. The customer’s SDG&E account number is also collected. A transaction file of the new applicants, known as leads, is exported to Excel by EETS and e-mailed to Carrier in Syracuse, NY. The data sent to Carrier includes the customer name, address and telephone number.

Carrier uploads the new lead data in the transaction file into its Access-based database system called “Carrier Comfort Choice Database, SDG&E Database” (Carrier DB). Carrier adds the Carrier account number and work order number to each new lead record. An extract of new leads is created from the Carrier DB. This extract is e-mailed to the coordinator of the program’s dealer installers, Southern California Air Conditioning Distributors (SCACD) in the City of Industry, California.

SCACD staff uploads the new lead data into its database (SCACD DB). The SCACD DB is an extension of the Carrier DB system and was provided by Carrier to SCACD. Prior to the middle of March, SCACD would send only new leads to the dealers. Starting the middle of March 2002 SCACD sends new leads as well as outstanding old leads, those that have not been installed or

cancelled, to the appropriate Carrier dealer via e-mail or fax. Under the former system the dealers may have lost track of old leads that had been unresolved, resulting in some old leads essentially being lost. The status of some of these leads was not readily known. The dealers are now fully aware of the leads they are assigned, new and old.

The leads are sent to dealers via fax or e-mail. Depending on the dealer, they will receive the leads pre-printed on work order forms or as a list. The dealer:

- Contacts the lead by telephone;
- Screens the lead to ensure the customer is still interested in participating;
- Ensures the customer resides in an appropriate dwelling type (i.e., no mobile homes); and
- Ensures the customer has a working central air conditioner.

If the lead passes the pre-screening an appointment for installation is scheduled. The installer takes the work order (WO) to the residence and goes through the installation process. The lead is returned to SCACD if the customer cannot be contacted by the dealer after three attempts.

Issues with Lead Tracking

Tracking leads through the program has proven to be problematic in the early stages of the program. The initial customer sign-up period took place in late October 2001. Some leads from that period apparently were not accounted for as recently as mid-March. An aggressive campaign was launched during the second week of March 2002 to determine the status of approximately 450 outstanding leads that had been lost. SCACD and the dealers provided information to Carrier who met with SDG&E with the results of this effort.

Efforts to improve lead tracking had been implemented by the time of this process evaluation. These program modifications have included:

- SCACD sends new leads and outstanding leads to dealers, and ensures the dealers are aware of leads they are responsible for
- Dealers to fax completed WOs to SCACD as they are completed to maintain timely updates
- SCACD sends copies of completed WOs to Carrier via overnight mail, rather than by fax, and reduces opportunities for error in transmission or receipt of faxes
- Dealers have been instructed to return leads to SCACD immediately after contact efforts with the lead have failed. This ensures that SDG&E receives these leads so contact issues can be resolved.

Carrier is also trying to catch-up on database management efforts. As discussed below, installation dates have not always been populated in the Carrier DB. Most of the records with

missing dates were those installed earlier in the program. More recent installations appeared to have valid installation dates. Carrier is currently updating information as time allows.

In addition, there were instances where leads with bad contact data were not returned to SCACD by the dealer. This may have been one reason for leads going into the “black hole.” Dealers have been instructed to return these leads to SCACD after three attempts to contact.

Carrier also had difficulties receiving SDG&E’s leads through e-mail. Simply removing the extension from the attached file finally allowed the e-mail to get past Carrier’s firewall set up.

In summary, it has been recognized by SDG&E program staff that greater attention needs to be paid to the tracking of leads. Clearly, breakdowns in lead tracking have occurred resulting in lost information, as well as excessive lags between receipt of application and installation. Program staff, specifically Carrier and SCACD representatives, are making progress in improving lead tracking and reporting. These improvements include providing feedback to dealers on outstanding leads, more timely distribution of new leads, and maintaining data in the Carrier DB.

Customer Call Center

The Smart Thermostat Program uses two telephone support systems to assist customers with their concerns. One system is maintained by SDG&E and is staffed by customer service representatives. The other support system is maintained by Carrier. Table 2-8 provides a description of the primary responsibilities of the two systems.

**Table 2-8
Customer Call Center Systems**

Situations Handled	SDG&E Customer Service Representatives	Carrier Customer Service
Program-related	Application Participation in program Incentives	None
Scheduling	None	Will re-direct to SCACD
Programming of Thermostat	None	Will provide assistance over telephone
Equipment issues (cannot be resolved over phone)	None	SCACD will have dealer schedule follow-up appointment to resolve problem.

Call Center Issues

During the staff and contractor interviews, several issues were raised with the two call centers. First, there appears to be some confusion on the part of customers with respect to which customer call center to contact. Most customers appear to be calling SDG&E’s call center (since it is an SDG&E program). In addition, SDG&E program staff are concerned that the Carrier call center operators have not been adequately trained or supervised to assist customers

appropriately. Calls that should be handled by Carrier are being routed back to SDG&E, and reportedly, customers can be placed on hold by the Carrier operators for excessive periods of time.

In addition, the Carrier call center is located on the East Coast. It operates during normal business hours using Carrier employees. After-hours operation had been contracted out. Since there is a 3-hour time difference between San Diego and the East Coast, a significant number of calls received could come after 2 p.m. PST, which is after-hours on the East Coast. The after-hours call center staff was not trained the same as Carrier staff, resulting in mixed results as far as competence in discussing program questions is concerned. In March, Carrier began handling all of its call center activities related to this program in-house, presumably allowing for a higher level of training and supervision.

Later in the Spring 2002, SDG&E initiated the effort to handle essentially all customer calls related to the Smart Thermostat Program, including contacting and assigning program dealers to resolve problems customers may have had. In doing so, the utility was able to ensure any customer issues were addressed in a timely manner. Some customers have called the Carrier call center, but most contacted SDG&E.

Customer Reactions to Call Centers

The customer survey addressed the extent to which participants (and non-participants) have contacted the SDG&E call center, as well as Carrier's call center. According to the survey results, few customers have contacted these call centers. Those who have, however, have been pleased with their experience.

SDG&E Call Center. About one-quarter of the participants (26%) and 8% of the non-participants reported that they contacted SDG&E's call center about the program. Most of these respondents were interested in getting more information about the program (17%), or learning how to apply for the program (17%). Others (participants) were calling because their thermostat did not work properly (17%), because the installer had missed an appointment (12%), or to find out when their thermostat would be installed (10%).

Respondents who contacted SDG&E's call center were asked to indicate how helpful they thought the operator was. Respondent ratings were reported on a scale of 1 to 5, where 1 meant not at all helpful and 5 meant very helpful. Responses are summarized in Table 2-8. As shown, on average, respondents felt the SDG&E call center operators were helpful (average 4.00). There is little difference in participant and non-participant ratings.

Carrier Call Center. About 15% of the participants indicated that they contacted Carrier's customer call center. Most of these inquiries were to find out how the thermostat worked or how to program it (7 responses), to report that the thermostat was not working properly or other problems (6), or to make an appointment with an installer (3).

Participants who contacted Carrier’s call center were asked to indicate how helpful they thought the operator was on a scale of 1 to 5, where 1 meant not at all helpful and 5 meant very helpful. Responses are summarized in Table 2-9. As shown, on average, participants felt the Carrier call center operators were helpful (average 4.05).

Table 2-9
How Helpful Was SDG&E’s or Carrier’s Call Center

Response	Percent of Participants	
	SDG&E’s Call Center	Carrier’s Call Center
1 (Not at all helpful)	12%	11%
2	5%	11%
3	2%	0%
4	17%	21%
5 (Very helpful)	48%	58%
Don't know	10%	0%
Refused	7%	0%
<i>Number of Respondents</i>	42	19
<i>Average</i>	4.00	4.05

Equipment Installation

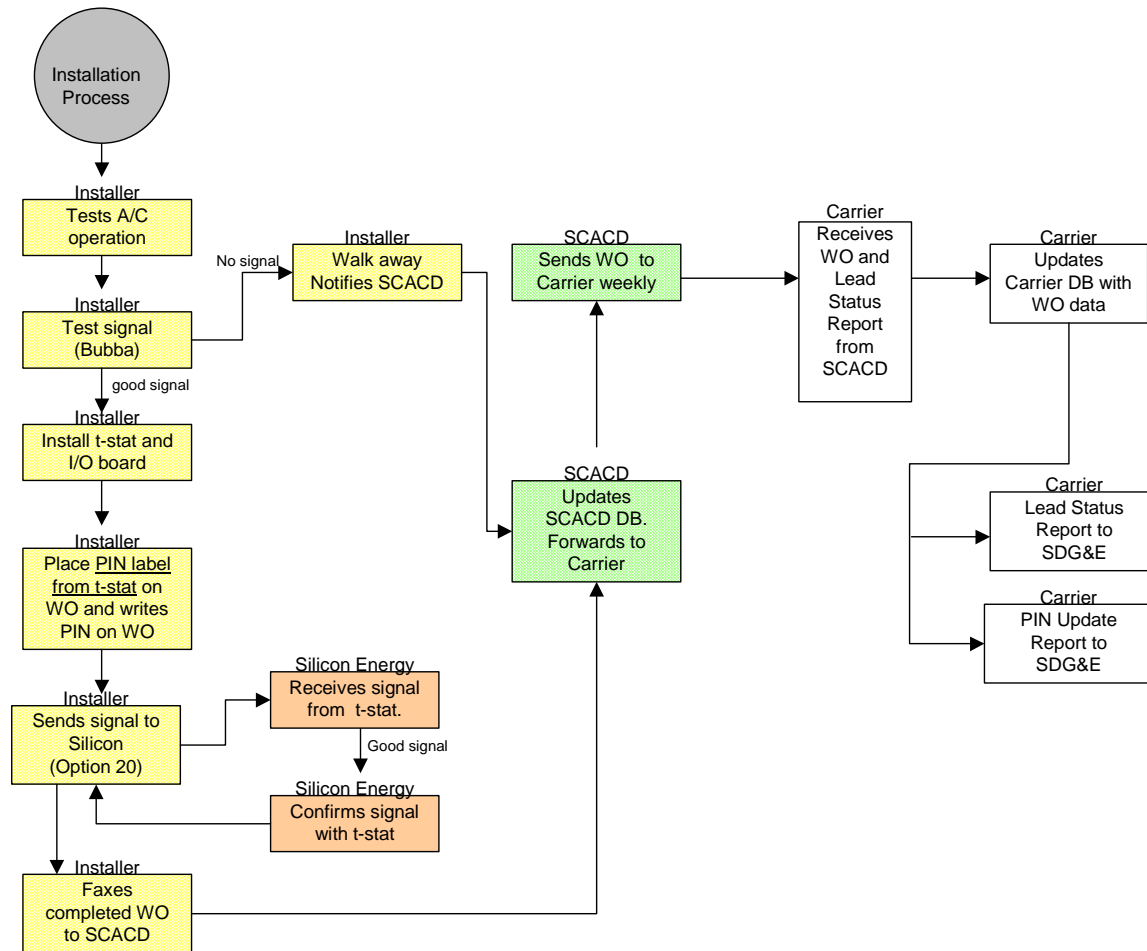
A schematic of the equipment installation process is shown in Figure 2. The objective of the installation process is to ensure a fully operable Smart Thermostat installation.

As shown, the installer first conducts a check of the air conditioner to ensure it qualifies for the program. The installer conducts a Bubba II Communication Test, where the strength of the pager signal sent to and received from the SkyTel system is tested. The installer conducts the test in the logical area(s) where the I/O board(s) will be installed.

If the Bubba test shows the signal is acceptable, then the Smart Thermostat hardware is installed. The hardware comprises the Smart Thermostat and the I/O board. The Smart Thermostat is installed in the same location as the existing unit. The I/O board is usually installed near the forced air unit. If necessary the antennae may be augmented with a second antennae to increase the strength of the SkyTel signal. Smart Thermostats are installed on each qualifying air conditioner in the dwelling.

The installer runs Option 20 which sends a signal to Silicon Energy that registers the PIN# with the Silicon Energy Residential Energy Manager system. A confirmation of the receipt of this signal is received at the installation. Once the proper operation is confirmed, the installer places a sticker with the PIN# taken from the I/O and places it on the work order (WO). The PIN# is also written on the WO in the event the sticker is lost or damaged.

Figure 2
SDG&E Smart Thermostat Installation Process



The customer receives additional information regarding the programming and operation of the Smart Thermostat (Homeowner’s Guide) and the program (fact sheet). Contact phone numbers are provided to the customer in the event of problems or questions. For program-related questions, customers are instructed to call SDG&E. For questions regarding the Smart Thermostat, customers are given a number to call Carrier for support. Installers ask customers several questions regarding the age of air conditioning system, the square footage of home, etc. At the conclusion of this visit, the customer signs the WO and the installer leaves the residence.

If the Bubba test shows the signal is not acceptable, then the installer attempts to locate alternate location(s) for the installation. If none can be found then the customer is notified that the Smart Thermostat cannot be installed and the WO is given a “walkaway” code.

Installers bring completed paperwork back to the dealer who faxes the WOs to SCACD. SCACD updates SCACD DB and e-mails updates to Carrier. SCACD sends completed WOs to Carrier weekly via overnight mail. Carrier updates Carrier DB with WO data, including PIN#.

Carrier then prepares a text-based extract of new installations and sends customer information to Silicon Energy via FTP. Silicon Energy updates its Residential Energy Manager with customer information received from Carrier.

Carrier sends the following reports to SDG&E:

- Lead Status Report (*.xls) – provides update on the status of leads provided to Carrier;
- PIN Information Update Report (*.xls) – information on installation, including PIN#;
- Homeowner_Issue_Log (*.doc) – tracks issues or problems received through customer calls to Carrier, has been supplanted by the Support_Call_Report;
- Support_Call_Report – has taken the place of the Homeowner_Issue_Log and reports customer calls to Carrier; call status and report is e-mailed to SDG&E; and
- SDGE_Deadbeat_Status (*.xls) – provides results of routine signals sent by Silicon Energy to test responsiveness of Smart Thermostat installations. If the unit is not responding to the signal it is placed on the Deadbeat Status report for resolution. An Investigative Work Order is issued. A dealer is sent to investigate the problem. In a vast majority of the cases a component of the communications equipment (the I/O board) is faulty and is replaced.

Issues with Rate of Installation

At the beginning of the program, the rate of installation of Smart Thermostat equipment was slow. A lag time of a month from the time of receipt of the application to equipment installation was expected. By mid-January 2002, it appeared that a large number of leads from the initial mailing in October 2001 had not been contacted or installed.

Applications were first received by SDG&E during October 2001. Table 2-10 shows information collected from the Carrier DB. The column titled “Date Received (SDG&E)” represents the number of applications received. The installation date field in the Carrier DB had a number of missing values, thus proved to be an unreliable indicator of the installation. Instead, the “SIE Report Date,” the date Silicon Energy was sent the PIN# and customer information from Carrier, was used as a proxy for installation date.

Table 2-10
Application and SIE Report Date

Month	Date Received (SDG&E)	SIE Report Date
Oct 01	312	0
Nov 01	118	5
Dec 01	619	99
Jan 02	291	254
Feb 02	295	114

This table clearly shows the number of installations (represented by SIE Report Date) lag the number of applications received.

SDG&E has attempted to address this problem by requiring that Carrier bring on additional resources to speed up the installation process. Carrier has contracted with Honeywell DMC (DMC) to conduct installations, but as of March 2002, DMC had not completed any installations.

At the time of this final report (November 2002), DMC has completed between 750 and 800 Smart Thermostat installations. Due to the incremental installation resources available through DMC, the backlog of thermostat installations has been reduced to an acceptable level. Some training issues may have been revealed, however, where DMC could not, or would not, install Smart Thermostats on homes with heat pumps.

Customer Recall of Installation Time

Participants in both the pre-curtailement customer survey (March-April 2002) and post-curtailement customer survey (November 2002) were asked to indicate how long it took for them to get their thermostat installed after they initially applied for the program. The results from these surveys clearly indicate that the pace of thermostat installations improved during 2002. As shown in Table 2-11, 68% of the participants surveyed in November 2002 reported that their new thermostat was installed within one month from the time of application. This compares to only 41% of the participants surveyed earlier in the year (March-April 2002).

Table 2-11
Time Required to Get Thermostat Installed After Application

Response	Percent of Participants	
	Pre-Curtailement Survey Results (March-April 2002)	Post-Curtailement Survey Results (November 2002)
About a week or two	12%	39%
Within one month	29%	29%
Within two months	26%	15%
Over two months	9%	11%
Don't know	21%	6%
Refused	4%	0%
<i>Number of Respondents</i>	129 ¹	102

¹Two participants had yet to have their thermostats installed at the time of the pre-curtailement customer survey.

Customer Satisfaction with Program Delivery

Participants in both the pre-curtaiment customer survey (March-April 2002) and post-curtaiment customer survey (November 2002) were asked to indicate their level of satisfaction with various aspects of the program. Specifically, participants were asked to rate the following:

- The process to apply or sign up for the program
- The time it took to get your thermostat installed
- The professionalism of the person who installed your thermostat
- The quality of the thermostat installation
- The way the thermostat works.

The results from both surveys clearly indicate that participants were very satisfied with all aspects of the program and it appears that satisfaction levels have improved over time. As shown in Table 2-12, satisfaction ratings improved the most markedly for the time it takes to complete the thermostat installation (another indication that this aspect of the program has improved during 2002). Overall, participants appear to be fairly satisfied with the way their thermostats work, although satisfaction ratings for this aspect of the program decreased slightly from March-April 2002 to November 2002.

Table 2-12
Satisfaction with Aspects of Program

	Average Satisfaction Rating	
	Pre-Curtaiment Survey Results (March-April 2002)	Post-Curtaiment Survey Results (November 2002)
The process to apply or sign up for the program	4.33	4.68
The time it took to get your thermostat installed	4.05	4.50
The professionalism of the person who installed your thermostat	4.53	4.62
The quality of the thermostat installation	4.65	4.71
The way the thermostat works	4.41	4.36
<i>Number of Respondents</i>	<i>131</i>	<i>102</i>

The post-curtaiment customer survey (November 2002) included some additional questions designed to address participant satisfaction with their new thermostats, as well as their knowledge of how to operate their new thermostats. The findings from these questions are somewhat consistent with the satisfaction ratings above – i.e., participants appear to be satisfied with their new thermostats, although they may not be adequately educated on how to use them properly.

For example, participants were asked if they had replaced an existing programmable thermostat and, if so, whether it was easier, harder or similar to operate as their old programmable thermostat. Participants were also asked if they were more, less or about as likely to use the

programmable features of the new thermostat as compared to their old programmable thermostat. The following summarizes participant responses to these questions:

- About one third of the participants (36%) already had a programmable thermostat installed prior to participating in SDG&E’s program.
- Most of these participants felt their new thermostat was easier to operate (46%) or the same (32%) as their old programmable thermostat.
 - Only five participants felt their new thermostats were harder to operate than their old programmable thermostats (e.g., “has more buttons,” “more steps needed to program it”).
- Most of the participants who had existing programmable thermostats reported that they were more likely (54%) or just as likely (32%) to use the programmable features on their new thermostats as they were on their old thermostats.
 - Only five participants reported they were less likely to use the programmable features on their new thermostats (e.g., “it’s too complicated,” “don’t know how to use the new one”).

Participants were also asked to rate their knowledge of how to program their new thermostats to adjust the temperature set-points for different times and days. As shown in Table 2-13, participants rated themselves to be only moderately knowledgeable about how to program their new thermostats. Participant knowledge ratings averaged only 3.33 on a scale of 1 to 5, where 5 meant “very knowledgeable” and 1 meant “not at all knowledgeable.”

Table 2-13
Participant Knowledge of How to Program Smart Thermostat

Knowledge Rating	Percent of Participants
5 (Very knowledgeable)	23%
4	26%
3	24%
2	14%
1 (Not at all knowledgeable)	13%
Don't know	1%
<i>Number of Respondents</i>	102
Average Rating	3.33

Motivations for and Barriers to Participation

Participants were asked to indicate their reasons for participating in the program and having the Smart Thermostat installed. Responses are summarized in Table 2-14. As shown, most participants were interested in saving money and lowering their energy bill (27%), or saving energy and cutting down on the electricity use (22%). Others were interested in getting a new or free thermostat (16% and 12%, respectively). About 17% participated in order to get the financial incentives, while another 10% indicated they participated in order to “do their part” during the energy crisis.

Table 2-14
Reasons for Participation

Response	Percent of Participants
To save money / lower electricity bill	27%
To save energy / cut down on electricity use	22%
To get the incentives	17%
Needed a new thermostat	16%
To get the free thermostat	12%
To "do my part" during the energy crisis	10%
To reduce my monthly energy costs (by controlling my energy use)	4%
Previous owner did it	4%
To regulate heat	2%
Other	5%
Don't know	6%
Refused	2%
<i>Number of Responses</i>	<i>170</i>
<i>Number of Respondents¹</i>	<i>131</i>

¹Multiple responses allowed. As a result, the percentages sum to more than 100%. Percentages are based on the number of respondents.

Non-participants were asked to indicate their reasons for choosing not to participate in SDG&E’s Smart Thermostat Program. Responses are summarized in Table 2-15. As shown, some appear to be open to the idea – 12% reported that they were simply too busy and had not gotten around to making a decision yet, 11% explained that they needed more information in order to make a decision, and 3% simply had not paid enough attention to the materials mailed to them.

Others do not feel they would qualify or that it would not be worthwhile for them to participate. For example, 11% reported that they did not have central AC, 7% reported that they do not use their central AC that much, 5% reported that they do not use their central heat that much, and 4% are renters and feel it is not their decision to participate.

For others, there appears to be a lack of interest for specific reasons such as already having a programmable thermostat installed (21%) or not wanting to have a programmable thermostat installed (9%). Others explicitly indicated that they did not want SDG&E to control AC/heat (11%), while others cited inadequate financial incentives (4%) as a barrier to participation.

Table 2-15
Reasons for Non-Participation

Response	Percent of Non-Participants
Already have a programmable thermostat	21%
Too busy/Haven't gotten around to it	12%
I don't have a central AC system	11%
Don't want them controlling our heat	11%
Needed more information/don't know enough details about the program	11%
Don't want a programmable thermostat	9%
I don't use my central AC that much	7%
Don't use heat much	5%
Rent/Don't own home/Not our decision	4%
Program incentives weren't high enough	4%
Just didn't/didn't read the material/didn't pay attention	3%
Couldn't afford it/another way to spend money	3%
Wouldn't work in my home	2%
Other	7%
Don't know	6%
Refused	0%
<i>Number of Responses</i>	119
<i>Number of Respondents¹</i>	100

¹Multiple responses allowed. As a result, the percentages sum to more than 100%. Percentages are based on the number of respondents.

Awareness of and Behavior During Control Period

Participants in the post-curtailment customer survey (November 2002) were asked a series of questions designed to determine whether or not they knew if SDG&E had implemented any curtailment calls during 2002. Specifically, participants were asked whether or not they were aware of SDG&E remotely adjusting the temperature settings on their air conditioners during power emergencies. If aware, participants were asked to indicate the number of times SDG&E had controlled their air conditioner temperature settings since the new thermostats were installed, as well as the month(s) and time(s) of day in which these controls took place. Most respondents (61%) were under the impression that SDG&E had not controlled their thermostats, and 31% stated that they did not know if SDG&E had implemented any controls.

Only eight respondents (8%) indicated that they were aware SDG&E had remotely controlled their thermostats. Few of these respondents were able to correctly state that SDG&E had implemented only one control during July that lasted for approximately two hours. Some thought SDG&E had implemented two or more controls, and others thought control was implemented in June, August or even as recent as October 2002. None of these eight respondents were able to correctly recall that the control period lasted for about two hours – some felt the period was less than an hour, one hour, or more than two hours. Most of these respondents, however, were able to correctly recall that the control was implemented in the afternoon (as opposed to another time of day).

In addition to being asked to recall if SDG&E remotely adjusted the temperature settings on their air conditioners, participants were asked if they were aware of any “Stage 2” power emergencies declared by SDG&E or the California ISO during the summer of 2002. Again, aware participants were asked to indicate the number of “Stage 2” power emergencies that were declared this past summer, as well as the month(s) and time(s) of day in which these emergencies took place. Most respondents (90%) were unaware that any “Stage 2” power emergencies had been declared this past summer.

Of those who were aware that a “Stage 2” power emergency had been declared, few were able to correctly recall specifics. Most respondents reported that more than one emergency was declared, that it was shorter or longer in duration than the actual two hour period, and it occurred in a month other than July (June, August or September 2002). Again, however, most respondents were able to correctly recall that the “Stage 2” power emergency was declared in the afternoon.

Participants in the post-curtailment customer survey (November 2002) were also asked a series of questions about their behavior during the one control implemented by SDG&E in mid-July 2002. These questions were designed to determine participants’ likely behavior during the control period. The following is a summary of the results of these questions:

- Approximately 75% of the participants indicated that at least one household member was likely to have been home during the control period in mid-July.
- About 40% could state with some certainty that at least one family member was actually at home on the afternoon of July 10, 2002.
- None of these participants reported that they manually over-rode the temperature adjustment implemented by SDG&E as part of the control.
- Only ten participants indicated that it was likely they came home prior to the end of the control period (5:20pm) and as a result, potentially could have over-ridden SDG&E’s remote temperature adjustment.

Use of Thermostats

Participants in the post-curtailment customer survey (November 2002) were asked a number of questions designed to better understand how they are using their new programmable thermostats. Specifically, participants were asked whether or not they use the programmable features on their new thermostats and, if so, to describe the different times of day and temperature set-points.

The results from these questions indicate that most participants are either manually adjusting their programmable thermostats (i.e., not using the programmable features at all), or programming their thermostats to maintain one constant temperature setting over a 24-hour period (i.e., not adjusting set-points for different times or days). Only 25% of the participants

reported that they have programmed their thermostat to adjust the temperature set-points more than once per day.

Customer Suggestions for Program Improvement

Participants in the post-curtailement (November 2002) customer survey were asked to offer suggestions to help improve SDG&E's program. When probed, the majority of respondents offered some type of suggestion for program improvement. As shown in Table 2-16, most participants' suggested that the program would benefit from increased marketing and advertising. Some of the specific suggestions for improving program marketing included providing information with the utility bill or through separate mailings to customers, and media advertising (i.e., TV, radio, newspapers, etc.).

In addition, 22% felt that better instructions on how to use the new thermostat needed to be developed and/or the installation reps needed better training on how to educate participants on how to use the new thermostats. Another 12% felt the program would benefit from improved customer service after the thermostats are installed. Finally, a few participants suggested specific features of the program that could be better emphasized in program advertising – i.e., the temporary nature of the controls, the significant monetary savings involved, and participation will help prevent power emergencies.

Table 2-16
Participant Suggestions for Program Improvement

Response	Percent of Participants
More advertising (specific suggestions)	39%
More advertising (general recommendation)	21%
Give better instructions for thermostat use, better training for reps who install	22%
More/better incentives	17%
More/better customer service and follow-up after installation	12%
Emphasize that control is temporary, not "Big Brother"	5%
Emphasize monetary savings benefits (e.g., incentives, reduced energy costs)	4%
Emphasize importance during power emergencies	4%
Other	6%
<i>Number of Respondents</i>	102

2.4 SUMMARY

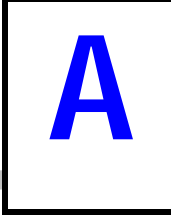
Overall, customer reactions to the program have been positive – the application package was informative, SDG&E and Carrier call center staff have been helpful, and installation process has been highly rated for quality and professionalism.

However, the program has suffered in several areas, ranging from marketing effectiveness to installation timeliness. Areas in need of continued monitoring and potential refinement include:

- **Customer Response** – Initially, the program suffered from low customer response. As mentioned above, SDG&E had received slightly less than 1,000 applications by year-end 2001, when its goal was to have installed 1,000 thermostats by then. Recognizing that there were considerable delays in the installation process, SDG&E also understood that additional direct marketing was needed to meet the program’s participation goals. Through November 2002, SDG&E mailed out over 170,000 marketing pieces to over 85,000 targeted customers. As a result, participation rates have increased during 2002 such that approximately 4% of the target market is currently participating in the program.
- **Marketing Emphasis** – The messages of saving money, reducing your electricity bill, and getting a free, programmable thermostat appear to resonate with a larger group than the messages of doing your part and getting paid for it. These messages are even more likely to appeal to customers as emphasis on the energy crisis wanes. The benefits of programmable thermostats, as a longer-term investment in energy efficiency and energy cost management should be heavily promoted. In addition, follow-up education is needed to reinforce these messages and ensure that customers realize these benefits (see recommendation below).
- **Lead Tracking** – The systems established to avoid the problems related to lead tracking should continue to be monitored for effectiveness. Carrier should be required to report frequently on progress for all leads and account for any discrepancies in a timely manner. Carrier should also be held accountable for populating and maintaining its tracking databases.
- **Customer Call Centers** – SDG&E should continue to carefully track the number and type of calls it receives from customers who are participating in the program. In addition, SDG&E should continue to monitor Carrier’s capability to staff its in-house call center and provide adequate training and supervision to its call center operators. Carrier installers should be instructed to spend more time training installers on how to educate homeowners on how to program and operate their new thermostats. Perhaps Carrier installers could place a sticker on the inside panel of the thermostat giving customers the toll-free number for contacting Carrier with questions about the program and/or the thermostat operation. The combination of better trained call center operators, more formal on-site customer education, and more prominent display of the Carrier call center number should reduce the frequency of calls requiring the attention of SDG&E program staff.
- **Customer Education.** The results from the post-curtailement customer survey indicate that most participants are either manually adjusting their programmable thermostats (i.e., not using the programmable features at all), or programming their thermostats to maintain one constant temperature setting over a 24-hour period (i.e., not adjusting set-points for different times or days). The survey also indicates that, while most participants appear to be satisfied with their new thermostats, many do not feel they have been adequately educated on how to use them. This is an area where the

program could improve. Contractors' installation crews need better training and educational materials (including simple instructions that can be left behind with customers). Carrier might also consider following up with participants to answer questions and provide additional education to ensure that customers are using the programmable features of their new thermostats to help them control their energy costs.

- **Installation Process** – Clearly, significant lags in the installation process have been experienced to date. Changes in contractor personnel, as well as bringing in DMC, are believed to be steps in the right direction and should pick up the pace for installation work prior to summer 2002. SDG&E should continue to closely monitor this process if the marketing effort is increased prior to summer 2002.



CUSTOMER SURVEYS

This appendix contains the customer surveys used for this evaluation. Presented first is the pre-curtailment participant survey, followed by the pre-curtailment non-participant survey and the post-curtailment participant survey.

**Telephone Survey Questionnaire
SDG&E Smart Thermostat Program Evaluation**

Participant Version

Introduction

Hello, my name is _____. I'm calling on behalf of San Diego Gas & Electric Company. We're conducting a short survey about the utility's Smart Thermostat Program. This survey should only last 5-10 minutes and we are just interested in your opinions; no one will try to sell you anything or contact you as a result of participating in this survey. Do you have 5-10 minutes now to conduct the survey?

- 1 Yes
- 2 No [ARRANGE CALLBACK]

1. According to our records, you are participating in this program and have had a programmable thermostat installed in your home. Is this information correct?

- 1 Yes, participating and thermostat has been installed [CONTINUE]
- 2 No, applied to participate but thermostat not yet installed [CONTINUE]
- 3 No, did not apply to participate [GO TO NON-PARTICIPANT SURVEY]

2. How did you first hear about the offer to install a free Smart Thermostat in your home? Any other ways? [DO NOT READ. RECORD FIRST MENTION AND THEN ALL OTHER MENTIONS]

- 1 Received letter/application in the mail from SDG&E
- 2 Television program
- 3 SDG&E's customer call center
- 4 Newspaper advertisement/article
- 5 SDG&E website
- 6 Other [SPECIFY]
- 7 Don't know

[IF RECALL RECEIVING LETTER/APPLICATION FROM SDG&E, SKIP TO Q.4]

3. Do you recall receiving a letter from SDG&E asking if you wanted to apply to participate in the Smart Thermostat Program?

- 1 Yes
- 2 No [SKIP TO Q.7]
- 3 Don't know [SKIP TO Q.7]

4. What was the main message SDG&E was trying to get across in that letter? Anything else you recall about the letter? [DO NOT READ. RECORD FIRST MENTION AND THEN ALL OTHER MENTIONS]

- 1 How much money I'd get in incentives
- 2 That I'd get a free thermostat
- 3 To "do my part" to reduce electricity demand
- 4 Who was eligible / ineligible to participate
- 5 How to participate (fill out an application, call SDG&E)
- 6 How I could override if I didn't want my AC temperature raised
- 7 Other [SPECIFY]
- 8 Don't know

5. On a scale of 1 to 5, where 1 is "very informative" and 5 is "not at all informative," how informative was the letter you received from SDG&E about the program?

- 1 Very informative
- 2 ...
- 3 ...
- 4 ...
- 5 Not at all informative
- 6 Don't know

[IF Q.5<3 SKIP TO Q.7]

6. In what way could the letter from SDG&E been more informative?
-

[IF RECALL CONTACTING SDG&E'S CUSTOMER CALL CENTER, SKIP TO Q.8]

7. Have you ever contacted SDG&E directly about this program?

- 1 Yes
- 2 No [SKIP TO Q.11]
- 3 Don't know [SKIP TO Q.11]

8. What were the main reasons you contacted SDG&E's customer call center?
- 1 To find out how to apply / To apply for the program
 - 2 To find out if I was eligible for the program
 - 3 To find out about the incentives / how much money I'd get for participating
 - 4 To find out about the smart thermostat / how it worked
 - 5 To find out when the thermostat would be installed
 - 6 To find out when I'd get my incentive money
 - 7 Because the Carrier Call Center was closed/wait too long
 - 8 Other [SPECIFY]
 - 9 Don't know
9. On a scale of 1 to 5, where 1 is "very helpful" and 5 is "not at all helpful," how helpful was the SDG&E call center operator in providing you with information about the program?
- 1 Very helpful
 - 2 ...
 - 3 ...
 - 4 ...
 - 5 Not at all helpful
 - 6 Don't know
- [IF Q.9<3 SKIP TO Q.11]
10. In what way could the SDG&E call center operator been more helpful?
-
11. Did you ever try to contact Carrier, the company that was installing the Smart Thermostat?
- 1 Yes
 - 2 No [SKIP TO Q.16]
 - 3 Don't know [SKIP TO Q.16]
12. Were you able to speak with a Carrier representative?
- 1 Yes
 - 2 No
 - 3 Don't know

13. What were the main reasons you (IF Q12^=1 READ “TRIED TO CONTACT”)
contacted Carrier?
- 1 To find out about the smart thermostat / how it worked
 - 2 To find out when the thermostat would be installed
 - 3 Other [SPECIFY]
 - 4 Don't know
- [ASK IF Q12=1. OTHERWISE SKIP TO Q16]
14. On a scale of 1 to 5, where 1 is “very helpful” and 5 is “not at all helpful,” how helpful
was the Carrier representative you spoke with in providing you with useful information?
- 1 Very helpful
 - 2 ...
 - 3 ...
 - 4 ...
 - 5 Not at all helpful
 - 6 Don't know
- [IF Q.14<3 SKIP TO Q.16]
15. In what way could the Carrier representative been more helpful?
-
16. What were the main reasons you decided to participate in SDG&E's Smart Thermostat
Program? Any others? [DO NOT READ. RECORD FIRST MENTION AND THEN
ALL OTHER MENTIONS]
- 1 To get the incentives
 - 2 To get the free thermostat
 - 3 To reduce my monthly energy costs (by controlling my energy use)
 - 4 To “do my part” during the energy crisis
 - 5 Because I don't use my AC that much / get paid to do nothing
 - 6 Other [SPECIFY]
 - 7 Don't know

[ASK IF THERMOSTAT IS INSTALLED. OTHERWISE ASK Q18A AND Q19A AND THEN SKIP TO Q20]

17. Approximately how long after you initially applied to participate in the program did it take for you to get the thermostat installed? Was it:

- 1 About a week or two
- 2 Within one month
- 3 Within two months
- 4 Over two months
- 5 Don't know

18. Now I'd like to find out how satisfied with various aspects of the program. Please give me your responses on a scale of 1 to 5, where 1 is "very satisfied" and 5 is "not at all satisfied." First, how satisfied were you with the:

- b. The process to apply or sign up for the program
- c. The time it took to get your thermostat installed
- d. The professionalism of the person who installed your thermostat
- e. The quality of the thermostat installation
- f. The way the thermostat works

[ASK Q19A-E SERIES IF Q18A-E<3. OTHERWISE SKIP TO Q20]

19. In what way were you dissatisfied with:

- a. The process to apply or sign up for the program

- b. The process and time it took to get your thermostat installed

- c. The professionalism of the person who installed your thermostat

- d. The quality of the thermostat installation

- e. The way the thermostat works

[ASK IF THERMOSTAT NOT YET INSTALLED. OTHERWISE SKIP TO Q22]

20. You mentioned that you have not yet had your Smart Thermostat installed. How long has it been since you first applied to participate in this program? Has it been:

- 1 About a week or two
- 2 Within one month
- 3 Within two months
- 4 Over two months
- 5 Don't know

21. On a scale of 1 to 5, where 1 is "very satisfied" and 5 is "not at all satisfied," how satisfied are you with the amount of time it is taking to have your Smart Thermostat installed?

- 1 Very satisfied
- 2 ...
- 3 ...
- 4 ...
- 5 Not at all satisfied
- 6 Don't know

22. Do you have any suggestions for improving the way the program is marketed to increase participation among SDG&E customers like yourself?

23. Do you have any other suggestions for improving the program?

Thank you for participating in this study. Have a great day/evening!

SDG&E Contact Info for Survey Verification – Rob Rubin

SDG&E Contact Info for Program Information – Kimberly Boelter

**Telephone Survey Questionnaire
SDG&E Smart Thermostat Program Evaluation**

Non-Participant Version

Introduction

Hello, my name is _____. I'm calling on behalf of San Diego Gas & Electric Company. We're conducting a short survey about the utility's Smart Thermostat Program. This survey should only last about 5 minutes and we are just interested in your opinions; no one will try to sell you anything or contact you as a result of participating in this survey. Do you have 5 minutes now to conduct the survey?

- 1 Yes
- 2 No [ARRANGE CALLBACK]

1. According to our records, SDG&E mailed you a letter asking you if you wanted to participate in its Smart Thermostat Program. This program offered SDG&E customers a free programmable thermostat as well as financial incentives for doing their part to help reduce energy use during peak periods. Do you recall receiving this letter?

- 1 Yes [SKIP TO Q.3]
- 2 No
- 3 Don't know

2. Do you recall hearing about this program at all?

- 1 Yes
- 2 No [COUNT AS "UNAWARE" AND THANK AND TERMINATE]
- 3 Don't know [COUNT AS "UNAWARE" AND THANK AND TERMINATE]

3. How (IF Q1=1 READ "ELSE") did you hear about the program?

- 1 Blank
- 2 Television program
- 3 SDG&E's customer call center
- 4 Newspaper advertisement/article
- 5 SDG&E website
- 6 Other [SPECIFY]
- 7 Don't know

[ASK IF RECALL RECEIVING LETTER/APPLICATION FROM SDG&E.
OTHERWISE SKIP TO Q.7]

4. What was the main message SDG&E was trying to get across in the letter you received? Anything else you recall about the letter? [DO NOT READ. RECORD FIRST MENTION AND THEN ALL OTHER MENTIONS]

- 1 How much money I'd get in incentives
- 2 That I'd get a free thermostat
- 3 To "do my part" to reduce electricity demand
- 4 Who was eligible / ineligible to participate
- 5 How to participate (fill out an application, call SDG&E)
- 6 How I could override if I didn't want my AC temperature raised
- 7 Other [SPECIFY]
- 8 Don't know

5. On a scale of 1 to 5, where 1 is "very informative" and 5 is "not at all informative," how informative was the letter you received from SDG&E about the program?

- 1 Very informative
- 2 ...
- 3 ...
- 4 ...
- 5 Not at all informative
- 6 Don't know

[IF Q.5<3 SKIP TO Q.7]

6. In what way could the letter from SDG&E been more informative?
-

[IF CONTACTED SDG&E'S CUSTOMER CALL CENTER, SKIP TO Q.8]

7. Did you ever contact SDG&E directly about this program?

- 1 Yes
- 2 No [SKIP TO Q.9]
- 3 Don't know [SKIP TO Q.9]

8. What were the main reasons you contacted SDG&E's customer call center?
- 1 To find out how to apply / To apply for the program
 - 2 To find out if I was eligible for the program
 - 3 To find out about the incentives / how much money I'd get for participating
 - 4 To find out about the smart thermostat / how it worked
 - 5 To find out when the thermostat would be installed
 - 6 To find out when I'd get my incentive money
 - 7 Other [SPECIFY]
 - 8 Don't know
9. On a scale of 1 to 5, where 1 is "very helpful" and 5 is "not at all helpful," how helpful was the SDG&E call center operator in providing you with information about the program?
- 1 Very helpful
 - 2 ...
 - 3 ...
 - 4 ...
 - 5 Not at all helpful
 - 6 Don't know
- [IF Q.9<3 SKIP TO Q.11]
10. In what way could the SDG&E call center operator been more helpful?
-
11. Why did you decide not to participate in SDG&E's Smart Thermostat Program? Any other reasons? [DO NOT READ. RECORD FIRST MENTION AND THEN ALL OTHER MENTIONS]
- 1 I don't have a central AC system
 - 2 I don't use my central AC that much
 - 3 Program incentives weren't high enough
 - 4 Already have a programmable thermostat
 - 5 Don't want a programmable thermostat
 - 6 Needed more information / don't know enough details about the program
 - 7 I live in a mobile home park and was not eligible for the program
 - 8 Other [SPECIFY]
 - 9 Don't know

[ASK IF NEEDED MORE INFORMATION. OTHERWISE SKIP TO Q.13]

12. Hearing about the program now, how likely would you be to participate in SDG&E's Smart Thermostat Program? On a scale of 1 to 5, where 1 is "very likely" and 5 is "not at all likely," how likely would you be?

- 1 Very likely
- 2 ...
- 3 ...
- 4 ...
- 5 Not at all likely
- 6 Don't know

13. Do you have any suggestions for improving the way the program is marketed that would help increase participation among SDG&E's customers?

14. Do you have any other suggestions for improving the program to help increase participation?

Thank you for participating in our study. Have a great day/evening!

SDG&E Contact Info for Survey Verification – Rob Rubin

SDG&E Contact Info for Program Information – Kimberly Boelter

SDG&E Smart Thermostat Program Evaluation

Post-Curtailment Participant Survey

Introduction

Hello, my name is _____. I'm calling on behalf of San Diego Gas & Electric Company. We're conducting a short survey about the utility's Smart Thermostat Program. This survey should only last 5-10 minutes and we are just interested in your opinions; no one will try to sell you anything or contact you as a result of participating in this survey. Do you have 5-10 minutes now to conduct the survey?

- 3 Yes [CONTINUE]
- 4 No [ARRANGE CALLBACK]

1. According to our records, your household is participating in this program and has had a programmable thermostat installed. Is this information correct?

- 4 Yes, participating and thermostat has been installed [CONTINUE]
- 5 No, applied to participate but thermostat not yet installed [THANK AND TERMINATE]
- 6 No, did not apply to participate [THANK AND TERMINATE]
- 7 Don't know [ASK IF SOMEONE ELSE IN THE HOUSEHOLD MAY KNOW. OTHERWISE, THANK AND TERMINATE]

Awareness of Curtailment

2. Other than to sign-up for the program and to have your thermostat installed, have you ever contacted or been contacted by SDG&E about this program?

- 1 Yes, respondent contacted SDG&E [ASK 3]
- 2 Yes, respondent was contacted by SDG&E [ASK 4]
- 3 Yes, respondent contacted SDG&E and was contacted by SDG&E [ASK 3 AND 4]
- 4 No [SKIP TO 5]
- 5 Don't know [SKIP TO 5]

What was your main reason for contacting SDG&E? Any other reasons? [DO NOT READ. RECORD FIRST AND ALL OTHER MENTIONS]

- 10 To confirm curtailment/find out about curtailment
- 11 To find out how much money I'd get for participating
- 12 To find out when I'd get paid my incentive
- 13 To find out how to work the new thermostat

- 14 To report a problem with my new thermostat
 - 15 Because the Carrier Call Center was closed/wait too long
 - 16 Other [SPECIFY]
 - 17 Don't know
4. What was the reason SDG&E contacted you? Any other reasons? [DO NOT READ. RECORD FIRST AND ALL OTHER MENTIONS]
- 1 To let us know there would be a curtailment
 - 2 To find out if my thermostat had been installed
 - 3 To check-up on a problem I reported about my thermostat
 - 4 Other [SPECIFY]
 - 5 Don't know
5. Do you know whether or not your thermostat was controlled by SDG&E since you signed up for the program and had the thermostat installed? [IF NECESSARY, EXPLAIN THAT AS PART OF THIS PROGRAM, PARTICIPANTS AGREE TO HAVE SDG&E CONTROL THEIR THERMOSTAT DURING POWER EMERGENCIES. THIS MEANS SDG&E COULD REMOTELY ADJUST THE TEMPERATURE SETTINGS ON YOUR AIR CONDITIONER DURING POWER EMERGENCIES]
- 1 Yes, thermostat has been controlled
 - 2 No, thermostat has not been controlled [SKIP TO 7]
 - 3 Don't know if thermostat has been controlled [SKIP TO 7]
6. How many times did SDG&E control your thermostat since it has been installed? [READ LIST]
- 1 Only once
 - 2 Two – four times
 - 3 Five or more times
 - 4 Don't know

6a. In what month(s) your thermostat was controlled? [PROMPT WITH LIST IF NECESSARY. ACCEPT MULTIPLES]

- 1 May
- 2 June
- 3 July
- 4 August
- 5 September
- 6 Other [SPECIFY: _____]
- 7 Don't know

6b. Do you know approximately what time(s) of day your thermostat was controlled? [READ LIST. ACCEPT MULTIPLES]

- 1 In the morning
- 2 In the afternoon
- 3 In the evening
- 4 Other [SPECIFY: _____]
- 5 Don't know

6c. Do you know for approximately how long your thermostat was controlled? [READ LIST. ACCEPT MULTIPLES]

- 1 Less than an hour
- 2 One hour
- 3 Two hours
- 4 More than two hours
- 5 Other [SPECIFY: _____]
- 6 Don't know

7. Were you aware of any "Stage 2" power emergencies called by SDG&E or the California ISO during this past summer?

- 1 Yes [SKIP TO 8]
- 2 No [IF NOT SURE WHAT STAGE 2 EMERGENCY IS, ASK 7A. OTHERWISE SKIP TO 9]
- 3 Don't know

7a. A “Stage 2” power emergency is called by the California ISO when electricity supplies are running low. Typically, the public is alerted to these emergencies through the news media, the California ISO website, and other channels. Hearing about this now, were you aware of any “Stage 2” power emergencies called this past summer?

- 1 Yes
- 2 No [SKIP TO 9]
- 3 Don’t know [SKIP TO 9]

8. Do you know approximately how many “Stage 2” emergencies were called this past summer? [READ LIST

- 1 Only once
- 2 Two – four times
- 3 Five or more times
- 4 Don’t know

8a. Do you know in what month(s) the “Stage 2” emergency(ies) was(were) called? [PROMPT WITH LIST IF NECESSARY. ACCEPT MULTIPLES]

- 1 May
- 2 June
- 3 July
- 4 August
- 5 September
- 6 Other [SPECIFY: _____]
- 7 Don’t know

8b. Do you know approximately what time(s) of day the “Stage 2” emergency(ies) was called? [READ LIST. ACCEPT MULTIPLES]

- 1 In the morning
- 2 In the afternoon
- 3 In the evening
- 4 Other [SPECIFY: _____]
- 5 Don’t know

8c. Do you know for approximately how long the “Stage 2” emergency(ies) lasted?
[READ LIST. ACCEPT MULTIPLES]

- 1 Less than an hour
- 2 One hour
- 3 Two hours
- 4 More than two hours
- 5 Other [SPECIFY: _____]
- 6 Don't know

Behavior During Curtailment Period

9. Actually, there was only one Stage 2 emergency called this past summer and, as a result, SDG&E controlled the thermostats of participants in its Smart Thermostat program on Wednesday July 10th. Participants in SDG&E's program were controlled for approximately two hours between 3:20pm and 5:20pm. Thinking back to that afternoon in mid-July, were you or other members of your household likely to have been home during that time?

- 1 Yes, at least one household member was home [SKIP TO 12]
- 2 No, no one was home [SKIP TO 10]
- 3 Don't know if anyone was home

9a. Are you or other members of your household *usually* home during summer afternoons?

- 1 Yes [SKIP TO 15]
- 2 No [SKIP TO 11]
- 9 Don't know [SKIP TO 15]

10. Were you not home that afternoon, but you or others normally would have been home on a typical summer afternoon?

- 1 Yes
- 2 No
- 3 Don't know

11. Remember I mentioned the control period lasted until 5:20pm. Is it possible that you or other members of your household came home before 5:20pm and adjusted the temperature on your thermostat?

- 1 Yes [SKIP TO 15]
- 2 No [SKIP TO 15]
- 3 Don't know [SKIP TO 15]

12. Again, thinking back to that afternoon in mid-July, did you or anyone else in your household do anything differently that afternoon that would have affected your household's use of electricity? For example:

- a. Were you or other members of your household HOME that afternoon, when you wouldn't have normally been?

1 Yes
2 No
9 Don't know

- b. Did you or other members of your household use less electricity that day in response to the mid-afternoon energy crisis?

1 Yes
2 No
9 Don't know

- c. Did you or other members of your household shift your use of electricity to off-peak hours to help out during the mid-afternoon crisis?

1 Yes
2 No
9 Don't know

- d. Did you or other members of your household do anything else differently that afternoon that might have affected your household's electricity use?

1 Yes
2 No [SKIP TO 13]
9 Don't know [SKIP TO 13]

- e. What did you do differently that afternoon?

13. Did you or other members of your household adjust or manually over-ride the temperature on your thermostat during the control period?

1 Yes
2 No [SKIP TO 15]
3 Don't know [SKIP TO 15]

14. What were your main reasons for adjusting or manually over-riding the thermostat during the control period?

- 1 It was too hot / needed to have the house cooler
- 2 It was a mistake / hit the wrong button on the thermostat
- 3 I wanted to use even less energy, so adjusted the set-point even higher or turned the AC off
- 4 Other [SPECIFY: _____]
- 5 Don't know

Use of Thermostat

15. Now I'd like to ask a few questions about how you use the thermostat itself. First, did you program it this past summer to adjust the temperature at different times of the day, or did you adjust the temperature set-points manually?

- 1 Programmed
- 2 Manual
- 3 Don't know

16. We're trying to get an idea of the temperature settings you used for your air conditioner this past summer. On a typical summer weekday, how many different temperature settings do you usually set your air conditioner at during a 24-hour period?

____ Number of temperature settings

[EXPLAIN THAT, TYPICALLY, PEOPLE ADJUST THEIR AIR CONDITIONER TEMPERATURE SETTINGS SO IT IS COOL WHEN THEY ARE HOME, OR THEY WILL TURN THEIR AIR CONDITIONER OFF WHILE THEY SLEEP OR ARE NOT AT HOME. WE ARE INTERESTED IN THE TEMPERATURE SETTINGS THEY USUALLY USE TO MAKE IT COOLER OR LESS COOL, AND THE TIME OF DAY THEY PROGRAM OR MANUALLY MAKE THESE CHANGES. IF DON'T KNOW, SKIP TO 17]

16a. OK. For each temperature setting, please tell me the approximate temperature you set your air conditioner at, and the time of day it is set for that temperature.

____ am/pm ____ ° F
 ____ am/pm ____ ° F
 ____ am/pm ____ ° F
 ____ am/pm ____ ° F
 ____ am/pm ____ ° F

[IF NECESSARY, PROMPT WITH: “FOR EXAMPLE, YOU MIGHT SET YOUR AIR CONDITIONER TO A WARMER SETTING, SAY 85° F, WHEN YOU LEAVE FOR WORK IN THE MORNING. THEN YOU WOULD ADJUST IT OR PROGRAM IT TO COME ON AT 78° F WHEN YOU GET HOME. THEN YOU MIGHT ADJUST IT AGAIN AT NIGHT BEFORE GOING TO SLEEP.”ACCEPT RESPONDENTS’ BEST GUESS FOR SETTINGS AND TIMES OF DAY. RECORD TEMPERATURES IN DEGREES FARENHEIT. USE “99” FOR DON’T KNOW RESPONSES.]

17. If it was a particularly hot summer weekday, would you have adjusted your thermostat for different temperature settings?

- 1 Yes
- 2 No [SKIP TO 19]
- 3 Don’t know [SKIP TO 19]

18. OK. On a particularly hot summer weekday, please tell me the approximate temperature you set your air conditioner at, and the time of day it is set for that temperature.

____ am/pm ____ ° F
 ____ am/pm ____ ° F
 ____ am/pm ____ ° F
 ____ am/pm ____ ° F
 ____ am/pm ____ ° F

19. Thinking back to the summer before last – that is, the summer of 2001 – would you say that the temperature set-points on your air conditioner were the same as or different than this past summer?

- 1 Same [SKIP TO 21]
- 2 Different
- 3 Don’t know [SKIP TO 21]

20. Were you more likely to have higher or lower set-points for your air conditioner thermostat during the summer of 2001? Keep in mind, higher set-points means your home would be warmer and lower set-points means your home would be more cool.

- 1 Higher set-points in summer 2001
- 2 Lower set-points in summer 2001
- 3 Don’t know [SKIP TO 21]

- 20a. Why did you use set your thermostat differently between last summer and the summer of 2001?
- 1 Because of energy crisis in 2001
 - 2 Because I used to have a manual thermostat, didn't always remember to adjust it to conserve energy while not home/sleeping
 - 3 Because of other factors/differences within the household (i.e., more people home, less people home, etc.)
 - 4 Other [SPECIFY: _____]
 - 5 Don't know
21. On a scale of 1 to 5, where 1 means "very knowledgeable" and 5 means "not at all knowledgeable," how knowledgeable are you and other members of your household in programming your thermostat to automatically adjust the temperature set-points for different times of the day and different days of the week? Would you say that you are:
- 1 Very knowledgeable
 - 2 ...
 - 3 ...
 - 4 ...
 - 5 Not at all knowledgeable
 - 6 Don't know
22. Did you already have a programmable thermostat installed prior to getting this new one through SDG&E's program?
- 1 Yes
 - 2 No [SKIP TO 27]
 - 3 Don't know [SKIP TO 27]
23. Compared to your old programmable thermostat, would you say that your new thermostat is easier to operate, harder to operate, or about the same as your old thermostat?
- 1 Easier to operate
 - 2 Harder to operate [ASK 24]
 - 3 The same
 - 4 Don't know
24. Why do you say that?
-

25. Would you say that you are more likely, less likely or about as likely to use the programmable features on your new thermostat than you were for your old programmable thermostat?

- 1 More likely
- 2 Less likely [ASK 26]
- 3 About as likely
- 4 Don't know

26. Why do you say that?

Program Satisfaction and Suggestions for Improvement

27. Now I'd like to find out how satisfied with various aspects of SDG&E's program. Please give me your responses on a scale of 1 to 5, where 1 is "very satisfied" and 5 is "not at all satisfied." First, how satisfied were you with the:

- a The process to apply or sign up for the program
 - b The time it took to get your thermostat installed
 - c The professionalism of the person who installed your thermostat
 - d The quality of the thermostat installation
 - e The way the thermostat works
 - f The timeliness of incentive payments
-

[ASK Q28A-F SERIES IF Q27A-F \geq 3. OTHERWISE SKIP TO Q29]

28. In what way were you dissatisfied with:

- f. The process to apply or signup for the program

- g. The process and time it took to get your thermostat installed

- h. The professionalism of the person who installed your thermostat

- i. The quality of the thermostat installation

- j. The way the thermostat works

k. The timeliness of incentive payments

29. Approximately how long after you initially applied to participate in the program did it take for you to get the thermostat installed? Was it:

- 1 About a week or two
- 2 Within one month
- 3 Within two months
- 4 Over two months
- 5 Don't know

30. What were the main reasons you decided to participate in SDG&E's Smart Thermostat Program? Any others? [DO NOT READ. RECORD FIRST MENTION AND THEN ALL OTHER MENTIONS]

- 8 To get the incentives
- 9 To get the free thermostat
- 10 To reduce my monthly energy costs (by controlling my energy use)
- 11 To "do my part" during the energy crisis
- 12 Because I don't use my AC that much / get paid to do nothing
- 13 Other [SPECIFY]
- 14 Don't know

31. Do you have any suggestions for improving the way the program is marketed to increase participation among SDG&E customers like yourself?

32. Do you have any other suggestions for improving the program?

33. Would you recommend participating in this program to friends or relatives?

- 1 Yes
- 2 No
- 3 Don't know

Demographics and Household Changes

34. Before we finish, I have just a few more questions about your household to make sure we're getting a representative sample of SDG&E's participants in this program. How many people were living at home this past summer?

98 Refused
99 Don't know

35. Were there more, less or the same number of people living in your home this past summer as there were during the summer of 2001?

1 More
2 Less
3 The same
4 Don't know

36. Have you added or reduced the square footage of your home since the summer of 2001 (that is, the summer before last), or has there been no change in the size of your home?

1 Added
2 Reduced
3 No change
4 Refused
5 Don't know

37. Which of the following best represents your annual household income from all sources in 2001, before taxes? [READ LIST]

1 Less than \$20,000 per year
2 \$20,000-49,999
3 \$50,000-74,999
4 \$75,000-99,999
5 \$100,000 or more
6 Refused
7 Don't know

38. RECORD GENDER OF RESPONDENT

1 Male
2 Female

END

That's all the questions I have for you. Thank you for participating in our study, and have a great day/evening!