REPORT

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2021 Process Evaluation of San Diego Gas and Electric's Demand Response Programs

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1 Executive Summary

San Diego Gas and Electric Co. (SDG&E) is nearing the conclusion of their current five-year cycle of authorized demand response (DR) programs and pilots covering the years 2018 through 2022. SDG&E hired Nexant to conduct a process evaluation of their DR programs that are still currently in operation to obtain relevant information that can be used in preparing their application proposals for DR programs. Nexant completed a significant survey and interview data collection effort and process evaluation of SDG&E's Base Interruptible Program (BIP), Capacity Bidding Program (CBP), and AC Saver Day Ahead and Day Of Programs. The results in this report will prepare SDG&E in their work in 2021 to decide if and how to modify their DR programs going forward, or whether to leave their programs' design and implementation approaches as they currently stand.

The goals for this evaluation are to 1) identify opportunities to both retain and increase participant enrollment in their DR programs and to 2) identify opportunities to increase the load reductions delivered by enrolled participants. Both outcomes would serve to increase SDG&E's DR program portfolio cost-effectiveness performance.

To address these goals, Nexant conducted a primary data collection effort from SDG&E program participants and non-participants, program aggregators, and SDG&E staff. In-depth interviews were completed with large C&I program participants and non-participants in the case of BIP, and with aggregators in the case of CBP. Online and outbound-dialing surveys of ACSDA and ACSDO program participants were used, as well as of ACSDA and CBP non-participants. Nexant also interviewed SDG&E regulatory and program staff stakeholders for all four programs. Table 1-1 summarizes the data collection approach and the number of interview and survey completes for each program included in our evaluation.

Table 1-1: Summary of Data Collection by Program

Program	Customer Class	Data Collection Sources	Data Collection Method	Total Completes
AC Saver Day Of (Summer Saver)	Residential and Small/Medium Commercial	All participants	Online survey with optional outbound phone surveys	349 residential; 113 commercial
		Program and policy/regulatory staff	In-depth interviews	1
AC Saver Day Ahead (Thermostat Program)	Residential	Participant sample	Online survey with optional outbound phone surveys	195
		Non-participant random sample		318
		Program and policy/regulatory staff	In-depth interviews	1
Capacity Bidding Program (CBP)	Commercial and Industrial (C&I)	Non-participant random sample	Outbound phone surveys	100
		Program aggregators	In-depth interviews	4
		Program and policy/regulatory staff		1
Base Interruptible Program (BIP)	Commercial and Industrial (C&I)	All current participants	In-depth interviews	1
		Recently unenrolled non-participants		1
		Program and policy/regulatory staff		1

1.1 Overall Findings

The SDG&E process evaluation shed light on various insights that can guide the approach and implementation of future changes to residential and commercial demand response programs. This section provides findings of interest from each of the evaluated programs. The following tables present the high-level conclusions and recommendations for each program. Each of these findings are summarized in greater detail in each of the corresponding sections in the body of the report.

1.1.1 Residential Programs

The survey for AC Saver Day Of mainly focused on participants' satisfaction with the ongoing program and their willingness to switch to the AC Saver Day Ahead thermostat program, as the

Day Of offering may transition to thermostats in the near future. Besides using a different technology to activate the event, the program design between the two programs is similar in terms of the number of events, the time of day the events occur and the event duration. Current AC Saver Day Of participants show high levels of satisfaction with the program as it stands. In terms of switching to the AC Saver Day Ahead program, the largest barrier is the need to purchase and install a new smart thermostat, as well as concerns with the amount of control SDG&E would have over the technology. The survey also showed that Day Of participants with existing smart thermostats would be more likely to join the Day Ahead program. The conclusions and recommendations for AC Saver Day Of are summarized in Table 1-2.

Table 1-2: AC Saver Day Of

Conclusions	Recommendations
1. Generally, participants in AC Saver Day Of are happy with the program. About 80% of residential and 76% of commercial customers are either "Satisfied" or "Very Satisfied" with the program.	1. The high levels of satisfaction show that large-scale changes to the program are unnecessary. Additionally, since the program may be in a transitional state, changes likely may provide limited value.
2. One of the largest barriers for customers switching to the Day Ahead program is the purchase and installation of a smart thermostat.	2a. Include free installation of the smart thermostat as part of the initial enrollment process. This would encourage more customers to switch programs, especially those who would have technical difficulties with the installation process.
	2b. Make a concerted effort to educate customers about how a smart thermostat works, the control SDG&E has over the thermostat, and how customers' privacy is protected. This will help answer some of the most common concerns customers expressed about the Day Ahead program.
3. Customers who already have a smart thermostat are more likely to join the Day Ahead program.	3. Concentrate recruitment efforts on those customers who already have a smart thermostat when asking households to switch programs. These customers will be more likely to switch and require less education about how a smart thermostat operates.

Two surveys were conducted for the AC Saver Day Ahead program. Current participants were surveyed on event notifications, the number of events, satisfaction with the program, incentive levels, and current thermostat usage. Non-participants were surveyed on their awareness of the program, interest in joining, and current thermostat setup. Participants were generally satisfied with the program, with 73% of respondents indicating they were "Very Satisfied" or "Satisfied."

The main cause of dissatisfaction for participants is that their homes get uncomfortably warm on event days. Over 60% of respondents were satisfied with their one-time and recurring incentives to date. For non-participants, those with existing thermostats are more likely join the Day Ahead program. Similarly to the AC Saver Day Of participants, the main concern with joining the thermostat program is giving up control of their thermostat to SDG&E.

To explore customers' willingness to enroll in AC Saver Day Ahead at varying incentive levels, Nexant utilized a Gabor-Granger methodology in its surveys of AC Saver Day Of participants as well as customers who were not participants in either program. Figure 1-1 shows the results of the methodology for these participants and non-participants. Participants in the Day Of program are more likely to join Day Ahead than non-participants at every one-time incentive level. However, the only difference in enrollment between the two groups that is statistically significant with 90% confidence is at the $125 incentive level. More details can be found in Sections 3.3.5 and 4.5.3. Table 1-3 presents the conclusions and recommendations for AC Saver Day Ahead.

Figure 1-1: Comparison of Customers Willing to Enroll in AC Saver Day Ahead

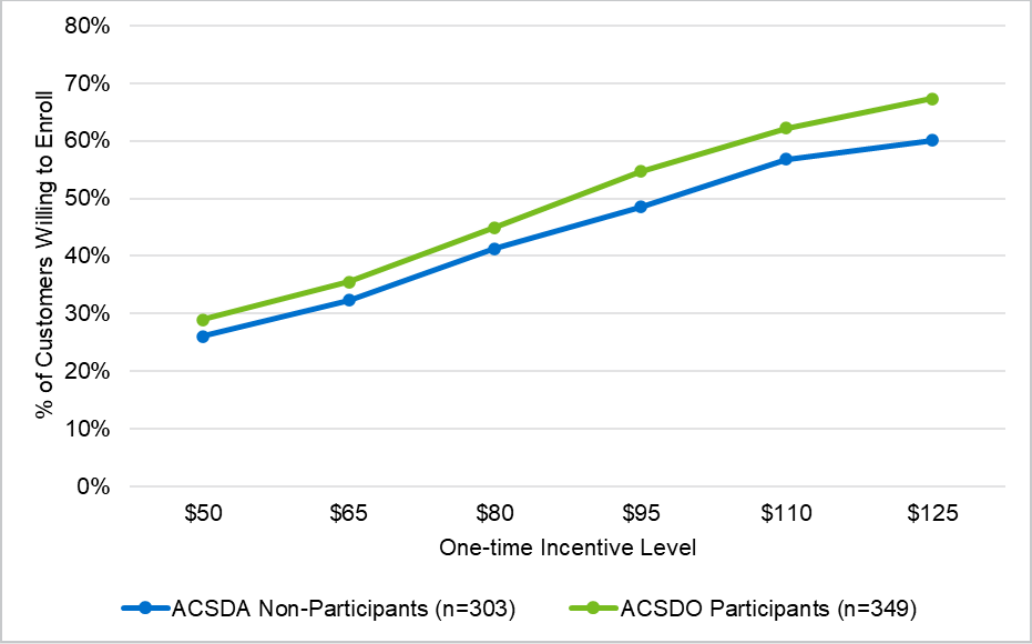


Table 1-3: AC Saver Day Ahead

Conclusions	Recommendations
1. Participants were primarily motivated to enroll in AC Saver Day Ahead to earn bill credits, but a large portion of participants also cited non-monetary reasons.	1. Make the non-monetary benefits of program participation, like helping the environment or ensuring grid reliability, a point of emphasis when recruiting new customers.

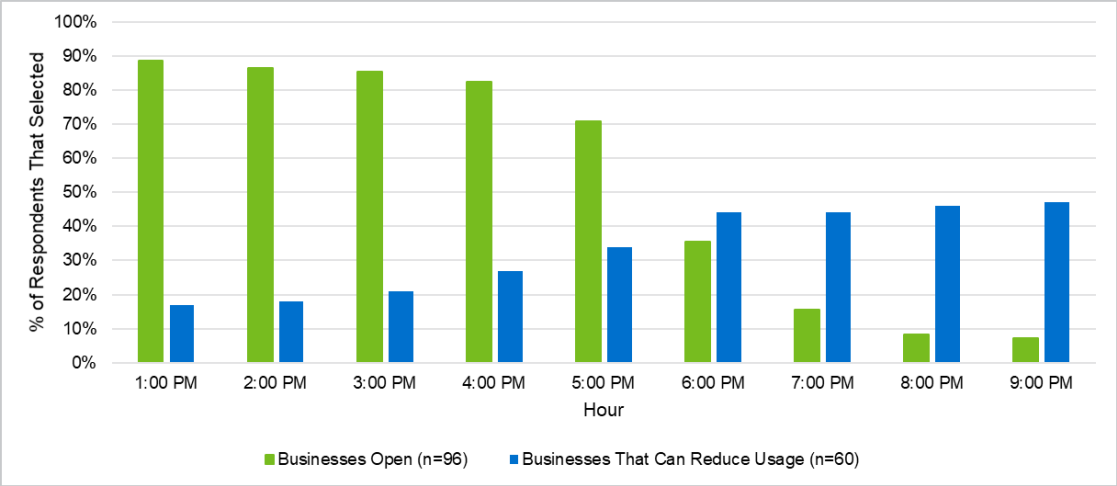
Conclusions	Recommendations
2. Customers will have slightly different experiences while enrolled in AC Saver Day Ahead based on their smart thermostat manufacturer.	2. As much as possible, ensure that customers are having similar experiences while enrolled in AC saver Day Ahead. This will make it easier for SDG&E to make program level changes instead of making program modifications based on manufacturer. It will also make it simpler to differentiate between customer dissatisfaction with AC Saver Day Ahead or the smart thermostat manufacturer.
3. The majority of customers do not opt-out on event days, and those that do opt-out only do so for a handful of events.	3. Continue to allow customers to opt-out of events The number one reason for dissatisfaction for current participants was their homes became uncomfortably warm on event days.
4. The most common reason cited by non-participants for not wanting to join the Day Ahead program was not wanting to give up control of their thermostat.	4. Emphasizing certain aspects of the program during the recruitment process could help address the most common non-participant concerns. Program details like the opt-out process, the number of events, and the temperature setback level should be included in recruitment materials.
5. Similar to the results in the AC Saver Day Of survey, non-participant respondents who already had a smart thermostat were more likely to indicate they wanted to join the Day Ahead program.	5. Concentrate marketing efforts to non-participants that already have a smart thermostat. These customers have fewer barriers to entering the program and already understand the functionality of a smart thermostat.
6. The optimal incentive level to get customers to join the Day Ahead program could be found with additional research.	6. Consider an additional study that integrates the revenue that each additional customer brings to the program at varying incentive levels. Using this method, the ideal incentive level can be found that maximizes revenue and makes the program cost-effective.

1.1.2 Commercial Programs

The data collection for the Capacity Bidding Program consisted of in-depth interviews with aggregators as well as an online survey with non-participant business customers. The aggregator interviews focused on challenges and suggestions to improve recruitment, retention, and customer satisfaction. The aggregators were asked to provide feedback on their experience with various program processes, including enrollment, notifications, dispatch, and settlement. The online survey for CBP non-participants focused on gauging awareness and interest in the program, potential barriers to joining, operation schedules and ability to reduce load during typical event hours. The primary challenges with recruitment for CBP are customer awareness, perception of event disruption to operations, inclusion of penalties, and identifying customers

with the appropriate operating schedule. Figure 1-2 shows the mismatch of customer operating hours when curtailable load is available and the hours customers are able to reduce load.

Figure 1-2: Respondent Operating Hours Versus the Hours Respondents Can Reduce Load



The primary motivators to join CBP are environmental benefit and prevention of rolling blackouts. Opportunities to improve the program include updates to the aggregator software platform, adding an elect option, reassessing the incentive structure and penalty structure to reduce financial risk, and assessing other baseline methodologies to reflect curtailment for customers with inconsistent operations more accurately. The conclusions and recommendations for CBP are summarized in Table 1-4.

Table 1-4: Capacity Bidding Program

Conclusions	Recommendations
1. Customer recruitment has two primary challenges. First, small customers tend to lack knowledge of demand response programs and the potential benefits. Second, customers that may have previously participated in California DR programs perceive that events are called too frequently and penalties from underperformance outweigh financial incentives.	1. Develop marketing and recruitment materials that help educate customers on the benefits and recent changes to the program that address common concerns and frequently asked questions, such as frequency of events and event triggers.
2. Some customers are unwilling to participate in programs that include potential penalties.	2. Consider program changes or adding an option that reduces or eliminates penalties, even if it would require lowering the incentive rates.

Conclusions	Recommendations
3. Customer fatigue is a barrier to program retention and recruitment. The frequency of events and potential for consecutive event days lowers performance and customer satisfaction with the program.	3. Assess the CBP price triggers to determine if an increase could be justified to reduce customer fatigue.
4. The software platform used to upload add forms, submit monthly nominations, and receive customer data is challenging to use and aggregators commonly experience technical issues.	4. Continue regular communication with the aggregators and provide prompt technical fixes and usability improvements to the software platform. Get feedback from the aggregators on how best to support the platform.
5. One of the primary disadvantages of the current CBP is the lack of an elect option like what PG&E's CBP offers, which gives aggregators additional flexibility in their bids and could improve customer retention and recruitment.	5. Consider offering an elect option similar to PG&E's "CBP Elect".
6. The 10-of-10 baseline may undervalue performance for customers with inconsistent operations and load profiles, even when using the weather adjustment.	6. Assess the accuracy of alternative baseline calculation approaches, such as a 5-in-10 baseline with a weather adjustment, for CBP participants.
7. Program non-participants were more likely to cite reasons related to the environment and preventing blackouts than financial incentives as their motivation for participating in the CBP.	7. The non-monetary benefits of enrollment should be highlighted when recruiting customers.
8. Finding customers that are a good fit for the CBP can be difficult. Many companies do not want to reduce usage or are not operational after 5 PM.	8a. Target customers who do not have to manually shut down equipment. Respondents that could reduce load automatically or had an energy management system were more likely to indicate they were interested in joining the CBP compared to respondents who have to manually adjust load.
	8b. Complete a simple load analysis to see which customers are operational after 5 PM. This will help narrow recruitment efforts and eliminate those customers that only are willing to reduce usage while non-operational

Nexant conducted in-depth interviews with current and recently unenrolled participants in the Base Interruptible Program to identify opportunities to improve customer enrollment, retention, and satisfaction with the program. Customers were asked about their motivation for joining, the processes to develop and execute their load reduction plans, event notifications and frequency, impact on business operations, incentives, and penalties. The two customers interviewed were

satisfied with the program and incentive levels. The main feedback received is that the event notifications could be improved and the penalties for under-performance are too high. The conclusions and recommendations for BIP are summarized in Table 1-5.

Table 1-5: Base Interruptible Program

Conclusions	Recommendations
1. 20-minute event notifications are often not enough time for customers to enact their load reduction plan.	1. Send customers earlier notices when there is a high likelihood of an event.
2. Some customers prefer receiving notifications via text message, which would reduce the likelihood they miss an event and improve performance.	2. Allow customers to receive notifications through their preferred channels, including text message.
3. Some customers are not a good fit for BIP because of their operating schedules, particularly those that do not operate after 4 or 5 PM.	3. Complete a simple load analysis to see which customers are operational after 5 PM. This will help narrow recruitment efforts and target those customers that have load available to curtail during event hours.
4. The penalties for under- or non-performance often outweigh the potential incentives for participating.	4. Assess the incentive and penalty structures to identify the appropriate levels that maintain reliability of the resource while lowering customer risk (i.e., lowering incentive and penalty amounts).

2 Introduction

The AC Saver (Summer Saver) Program, AC Saver Smart Thermostat Program, Capacity Bidding Program (CBP), and Base Interruptible Program (BIP) represent the main demand response offerings from San Diego Gas and Electric in both the residential and commercial sectors. As SDG&E is nearing the conclusion of their current five-year cycle of authorized DR programs and pilots, Nexant has conducted a large-scale process evaluation of these DR programs to obtain information that can be used to decide how and if to modify their DR programs going forward, or whether to leave their programs' design and implementation approaches as they currently stand.

2.1 Research Questions

The primary objective of the 2021 process evaluation of SDG&E's DR programs is to answer the following research questions:

- Are program eligibility rules effective and useful or are they presenting any barriers to enrollment? Are current policies surrounding DR Prohibited Resources a barrier to program enrollment?
- Are current incentives sufficient and effective in motivating enrollment and demand response load reduction?
- What effects do the programs have on business operations or household routines?
- Were customers effectively educated and motivated to do their part as participants of the programs?
- What program changes would result in greater per-customer impacts? Are dispatch strategies effectively leveraging the potential capacity of the programs?
- What is the participants' level of satisfaction with the programs? What is participants' level of satisfaction with program implementers and aggregators? How well do SDG&E's programs compete with those of DRAM DRPs in the eyes of the customer?
- How can SDG&E make the programs more attractive for new customers and improve retention of existing participants?
- What cost-effective, reasonable enhancements, if any, could be made to continue these programs?

2.2 Report Organization

The remainder of this report is organized as follows:

- Section 3 presents the overview, methodology, and findings for the AC Saver Day Of program;

- Section 4 presents the overview, methodology, and findings for the AC Saver Day Ahead program;
- Section 5 presents the overview, methodology, and findings for the Capacity Bidding Program; and
- Section 6 presents the overview, methodology, and findings for the Base Interruptible Program.

3 AC Saver Day Of

The following sections include a brief description of the AC Saver Day Of program and process evaluation goals, an overview of the survey given to participants, results from the survey, and conclusions.

3.1 AC Saver Day Of Program Overview

AC Saver Day Of, formerly known as Summer Saver, is a demand response (DR) resource based on central air conditioner (CAC) load control. There are two enrollment options for both residential and commercial customers. Residential customers can choose between 50% or 100% cycling and commercial customers can choose between 30% and 50% cycling. The incentive paid for each option varies and is based on the number of CAC tons under control at each premise. Load control is enabled through devices installed on enrolled CAC units that receive dispatch signals from the program's control system, delivered through a public paging network. The AC Saver Day Of season runs from April through October. An AC Saver Day Of event may be triggered by temperature or system load conditions and customers are not automatically notified when an event occurs; however, customers can sign up to receive event notification.

AC Saver Day Of may be transitioning to a different program in the near future. One of the reasons the program may make this change is because there is already an alternative SDG&E DR program operating called AC Saver Day Ahead (AC Saver Thermostat). The SDG&E program staff expressed interest in learning how many AC Saver Day Of participants would be willing to switch to the AC Saver Day Ahead program. The Day Ahead program design is similar to Day Of, except it utilizes smart thermostat technology to adjust the CAC instead of a paging network. Both the Day Of and Day Ahead programs operate under the same tariff and have the same event trigger. Besides using a different technology to activate the event, the program design between the two programs is similar in terms of the number of events, the time of day the events occur and the event duration.

Customers already participating in the Day Of program are thought to be good candidates for the Day Ahead program for a couple of reasons. First, they are already participating in a CAC load control program and are accustomed to having their AC adjusted on hot days. These customers have a smaller learning curve when it comes to participating in a DR program than the average customer, so the amount of education and marketing needed by SDG&E is relatively low. Second, participants are known to have a CAC, which is requirement to join the Day Ahead program. Finally, the customers in both programs might share similar characteristics unrelated to programs themselves, like views on the environment and grid reliability.

The primary area of interest surrounding participants switching programs was the incentive level required to motivate customers to join the Day Ahead program. Since most Day Of participants

would have to purchase and install a smart thermostat in order to join the Day Ahead program, finding the optimal incentive level to overcome this barrier was the main goal of the participant survey. The incentive levels for the Day Ahead program are currently structured into two parts: a one-time incentive payment when the participant joins the program, which is meant to help cover the cost of purchasing a smart thermostat, and a yearly recurring incentive for program participation. In the Day Of survey, customers were shown varying incentive levels to gauge how many would switch at a certain price. Additionally, there was interest from program staff to hear about why Day Of participants may not want to transition to the thermostat program, even for a large incentive.

Since the Day Of program could be changing in the near future, there was less concern from SDG&E program staff about current program design. Although, there were still some questions included in the survey regarding customer motivations for enrollment and satisfaction with the program. These questions were included to compare to the Day Ahead program surveys and to gain insight into why customers participate in DR programs.

3.2 AC Saver Day Of Survey Overview

There were two main survey objectives in Nexant's evaluation of the AC Saver Day Of program. The first was to gather information from participants about their experience with the current program. The second was to gauge participant interest in switching over to the AC Saver Thermostat program (AC Saver Day Ahead). Specifically, the survey data collection strategy was designed towards answering the following research topics and questions:

- **Motivation for Participation:** What motivated customers to participate in the AC Saver Day Of program?
- **Event Notifications:** Were customers satisfied with the event notifications they received and what is their preferred method of notification?
- **Satisfaction with AC Saver Day Of:** Are participants satisfied with AC Saver Day Of? What aspects of the program do participants like and dislike?
- **Incentive Level:** Are customers satisfied with the current AC Saver Day Of incentive level?
- **Current Thermostat Setup:** Do customers currently have a smart thermostat? If so, what brand of smart thermostat do they own?
- **Interest in Moving Programs:** Are customers interested in moving to a program like AC Saver Day Ahead that uses a smart thermostat? What incentive level would motivate customers to switch programs? Why do customers not want to switch programs?

Nexant addressed these research questions by fielding a survey that included both residential and commercial participants of AC Saver Day Of. The survey was administered entirely on the web for residential participants, while commercial customers were surveyed via both web and phone modes. Phone dialing was used for commercial customers because the initial web

response rate was low. Approximately 43% of commercial surveys were fielded over the phone. Additionally, in order to increase the response rate, both surveys were incentivized.

A random sample of 2,800 residential participants was drawn to receive the survey. The minimum quota of 280 responses was quickly reached and subsequently raised to 350 in order to gather more data. Approximately 1,300 commercial participants received the survey. The target quota for commercial respondents was 140, but only 113 responses were recorded. Although the quota was not met, the survey results can still be projected to the population of commercial participants. Participants were eligible to receive the survey if they had valid contact information and they did not have a "do not contact" flag. Overall, there are about 8,200 residential and 3,100 commercial customers enrolled in the program.

Table 3-1 shows a survey overview for residential and commercial customers.

Table 3-1: AC Saver Day Of Survey Summary

Class	Survey Start	Survey End	Days in Field	Incentive	Responses	Response Rate
Residential	7/7/2021	7/14/2021	8	$15	349	14%
Commercial		7/26/2021	20	$40	113	10%

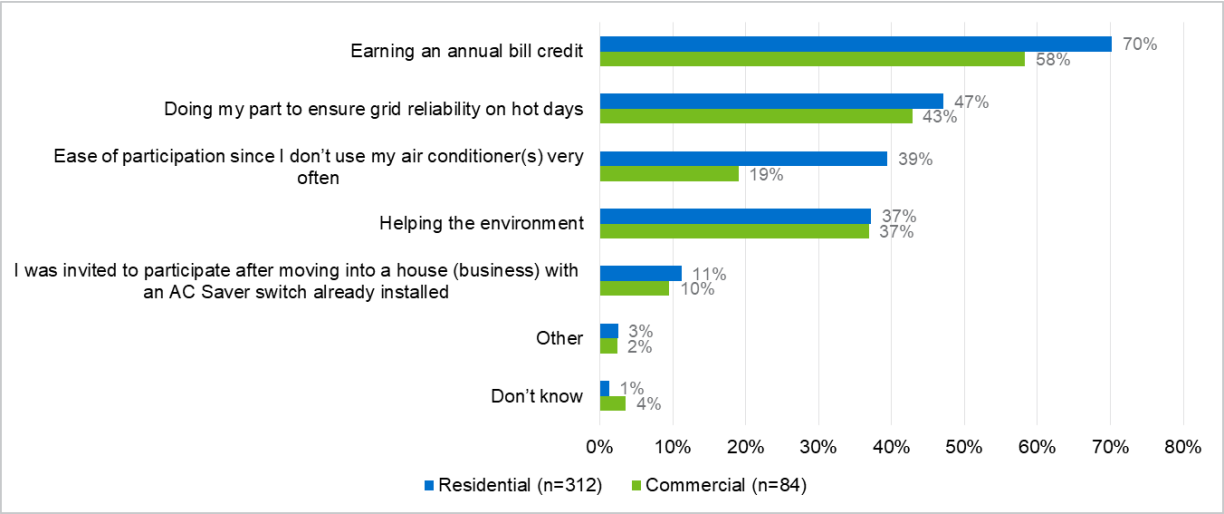
3.3 AC Saver Day Of Survey Findings

The following sections summarize the survey findings for each of the research questions. The survey responses are taken from the residential and commercial surveys and are combined into one figure where appropriate. The number of respondents who answered each question is displayed as "n" in each table and figure.

3.3.1 Motivation for Participation

An important factor to consider for any energy saving program is what motivates customers to participate. This information can help guide future marketing materials and helps shed insight into customers' expectations heading into the program. Not surprisingly, the vast majority of customers indicated they enrolled in AC Saver Day Of for the annual bill credit. But a large portion of customers also joined in order to ensure grid reliability, which is a point that could be emphasized in future marketing materials. Figure summarizes the residential and commercial motivations for enrollment. Customers were able to choose more than one response for this question.

Figure 3-1: Motivation for Participating in AC Saver Day Of

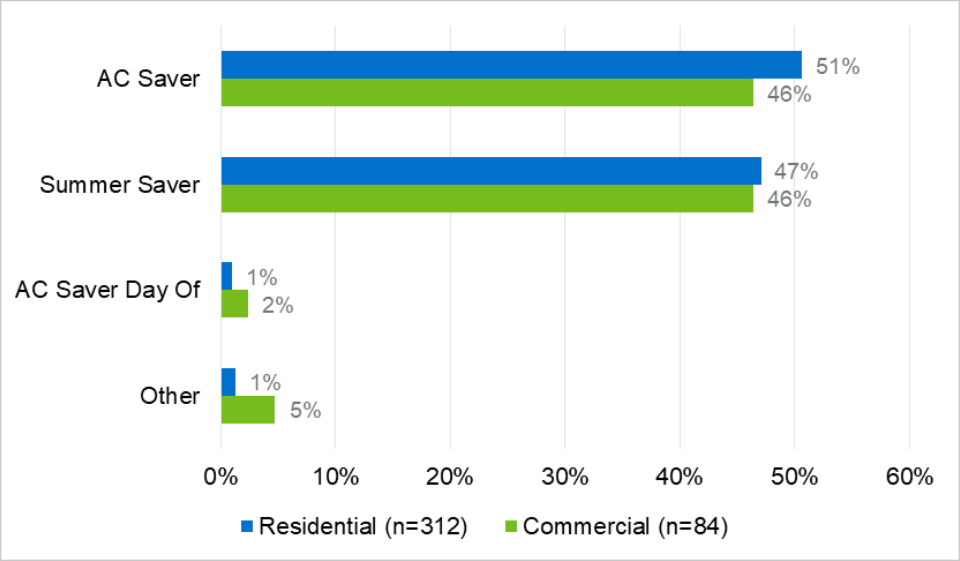


The few respondents who put "Other" as one of their answer choices were able to write in a response. The majority of these customers indicated they were automatcially enrolled because the home they moved into already had a device installed. Generally throughout the survey there were comments from residential customers who were opted into the program who were not aware of their participation in the program.

Participants earn bill credits based on their customer class, cycling strategy, and AC tonnage. Residential respondents who were motivated to enroll because of the bill credit received on average $89.78 in credits in 2020, while the respondents who indicated they were not motivated by bill credits received $60.63. The difference in bill credits between the two groups is statistically significant. In other words, there is evidence to show that residential customers who are motivated by bill credits are likely to receive more money than those customers who are not driven by credits. This indicates that participants are aware of their incentive levels to some degree.

AC Saver Day Of has been known by various names throughout the program's history. Respondents were asked which name they most associated with the program. The names "AC Saver" and "Summer Saver" were about equally identified as the program name. The results are displayed in Figure 3-2.

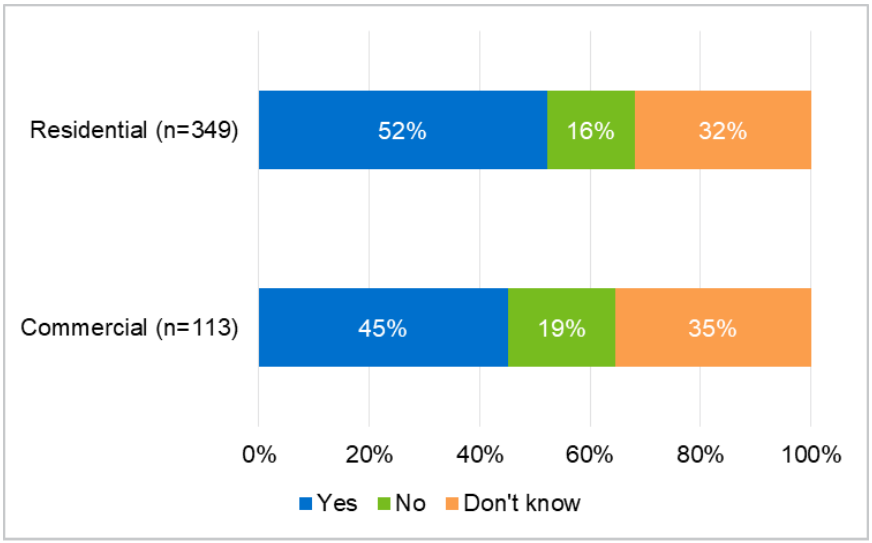
Figure 3-2: "Which name do you most associate with the program?"



3.3.2 Event Notifications

In 2020, if customers signed up for alerts, they should have received an email notification before events. But to receive notification in 2021 and beyond, customers will have to sign up for notifications through their MyAccount online account portal. Figure shows the percentage of respondents who received event notifications in 2020. About 50% of residential respondents said they received a notification, while 32% indicated they did not know if they got a notification. For commercial respondents, 45% said they received a notification and 35% did not know if they received one.

Figure 3-3: Respondents Who Received Event Notifications in 2020



If customers said they received a notification, then they were asked about their satisfaction with its timeliness. The question asked respondents to rate their satisfaction on a scale from 0 to 10. The responses were then binned into the five categories for clarity. For example, the "Very

Satisfied" bin contains the responses for customers who put 9 or 10. Another summary metric for responses that are either 9 or 10 is top-two box score. In general, a top-two box score is a common metric used in survey analysis to measure how positively respondents gauge a question. Figure 3-4 shows that residential respondents had a 70% top-two box score for the timeliness of event notifications, which is generally considered an excellent score. Commercial customers had a top-two box score of 55%. Additionally, there were very few respondents that were unsatisfied with the event notifications. Subsequent questions in this report that were asked on a 0 to 10 scale are binned and analyzed in similar manner.

Figure 3-4: Satisfaction with Event Notification Timeliness

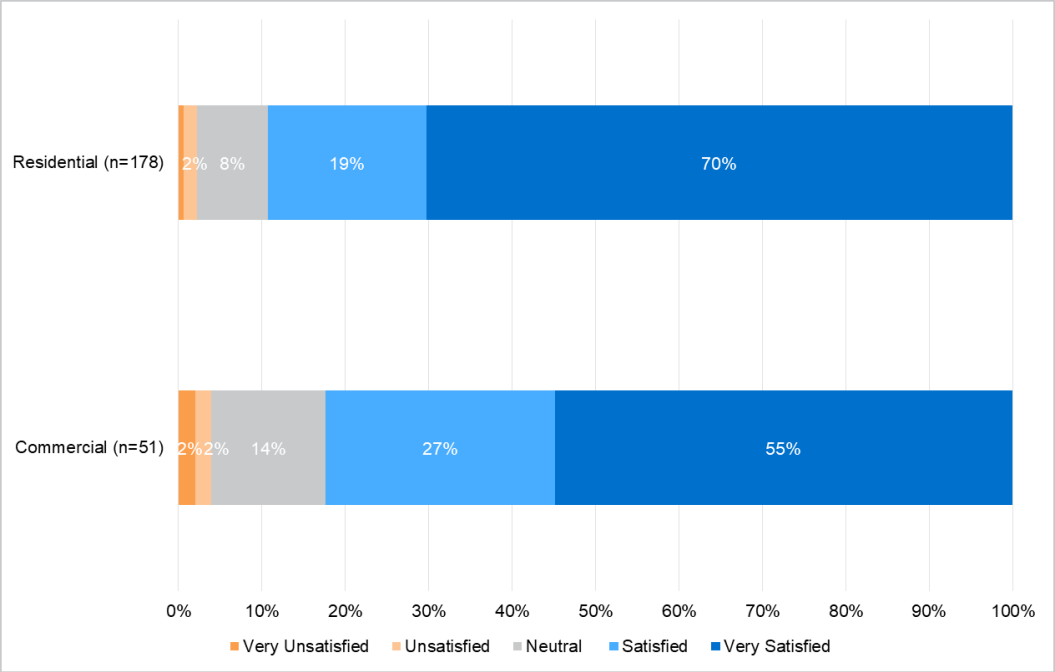
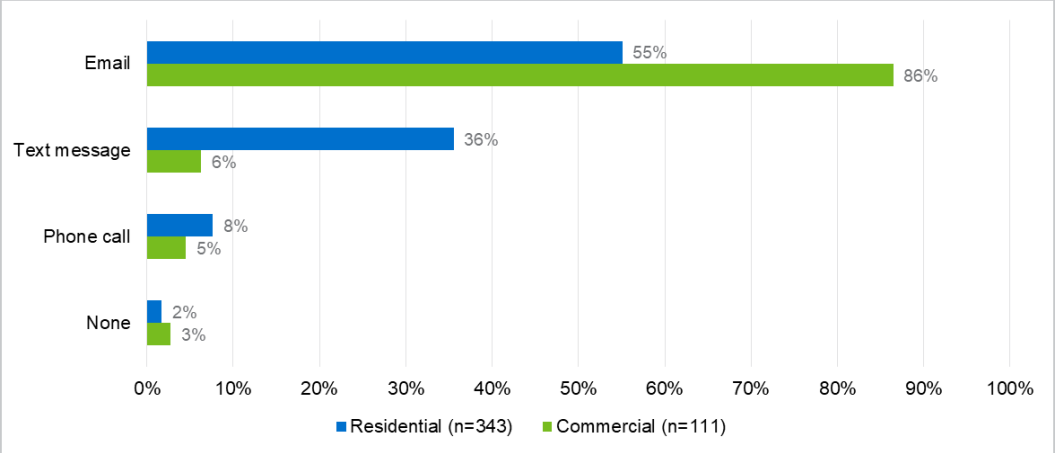


Figure 3-5 presents the preferred communication channel for respondents. Over half of residential respondents prefer an email notification over a text or phone call. The overwhelming majority of commercial customers, 86%, also prefer an email notification. Only 2% of residential and 3% of commercial respondents indicated they would not like a notification.

Figure 3-5: Preferred Communication Channel for Event Notifications

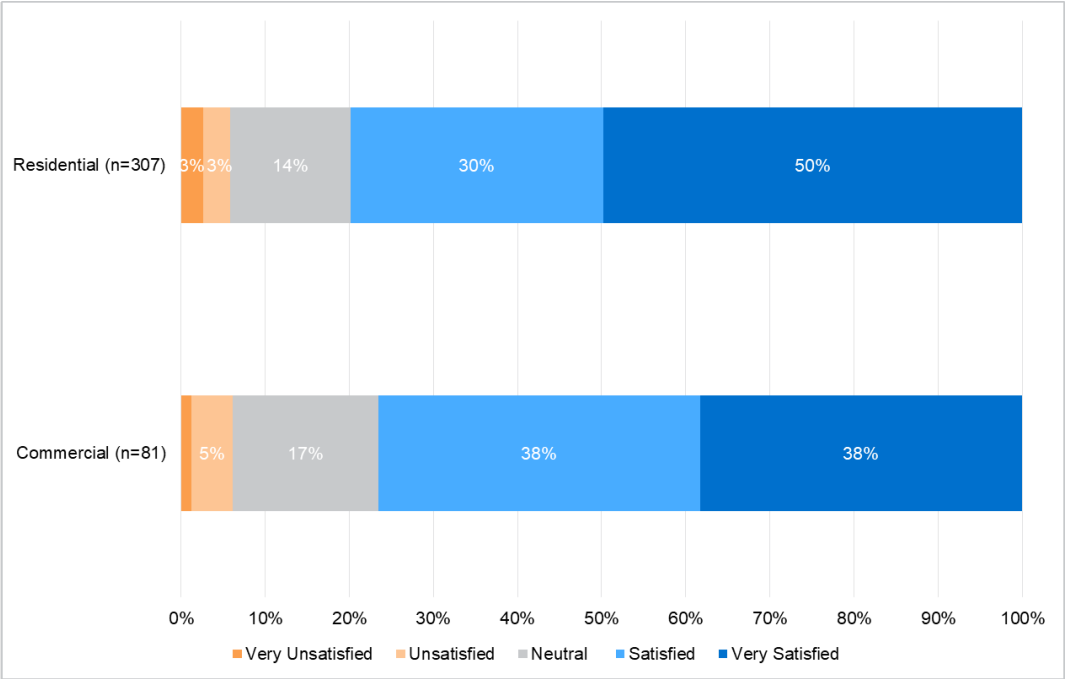


3.3.3 Satisfaction with AC Saver Day Of

This section covers participant satisfaction with various aspects of the program. Respondents were asked about their overall satisfaction with AC Saver Day Of. Additionally, the survey inquired about other program details like if the number of event days was reasonable, if customers would recommend the program to someone else and if the program changed their normal routines.

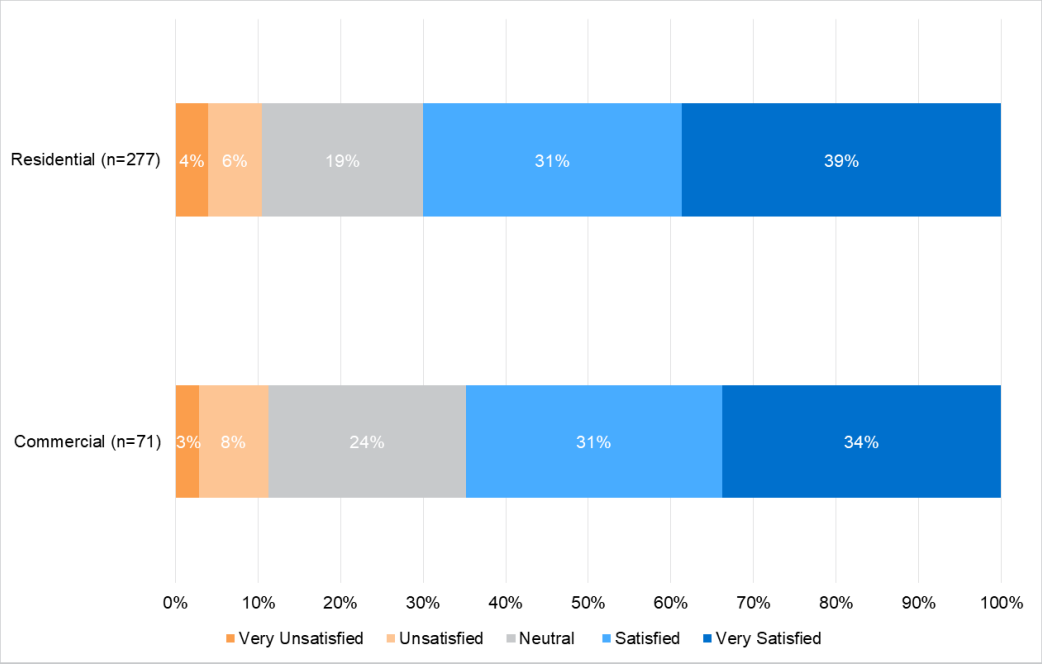
Overall, customers are satisfied with the program the way it is currently designed. Namely, 80% of residential customers and 76% of commercial customers said they are either “Satisfied” or “Very Satisfied” with the program. Only 6% of both residential and commercial customers indicated they were “Unsatisfied” with the program; these customers were given the opportunity to write in more information about their reasoning. These unsatisfied customers generally pointed to low or decreasing incentive levels as the reason for their rating. For example, one residential respondent said, “The credit was considerably larger when we first signed up. Over the years the credit has decreased.” Figure 3-6 displays the entire distribution of satisfaction scores for both residential and commercial customers.

Figure 3-6: AC Saver Day Of Program Satisfaction



Next, respondents were asked about satisfaction with the AC Saver Day Of bill credits. Responses to this question were generally positive, with 70% of residential and 65% of commercial respondents being “Satisfied” or “Very Satisfied” with the bill credits. Figure shows the distribution of scores for residential and commercial customers. Residential customers who marked “Very Unsatisfied” received $53.73 on average in 2020 bill credits. Meanwhile, respondents in the four other groups displayed in Figure 3-7 received $85.71 on average in credits. The difference in bill credits between the “Very Unsatisfied” group and each of the four other groups is statistically significant.

Figure 3-7: Bill Credit Satisfaction



On the next series of questions respondents marked how much they agreed with a set of statements about AC Saver Day Of on a scale from 0 to 10. The first question asked respondents about the reasonableness of the number of event days, which is currently set at a maximum of 20. The vast majority of respondents agreed that their experience with the number of events has been reasonable, with 81% of residential and 74% of commercial customers giving a score of 7 or higher (“Agree” or “Completely Agree”). The results are displayed in Figure 3-8.

If customers put a score of 4 or less, they were asked to enter the number of event days they preferred. There were 15 residential customers who answered this question, with two of them entering values above 20 days. Of the respondents who entered a value less than 20, the average was 4.5 days.

Figure 3-8: "The number of event days is reasonable"

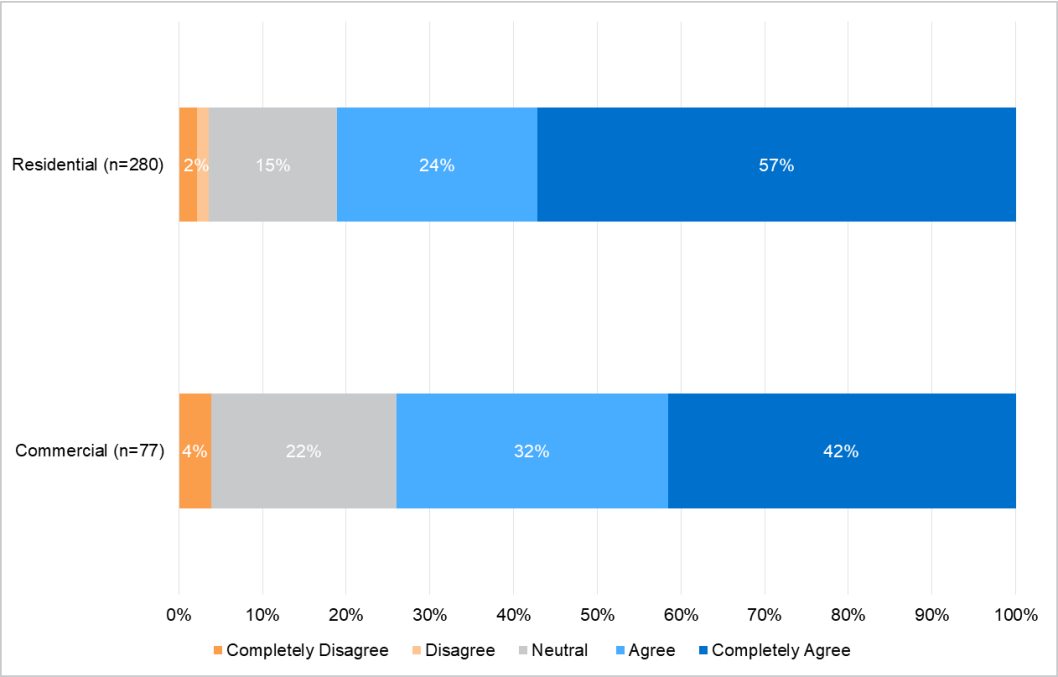
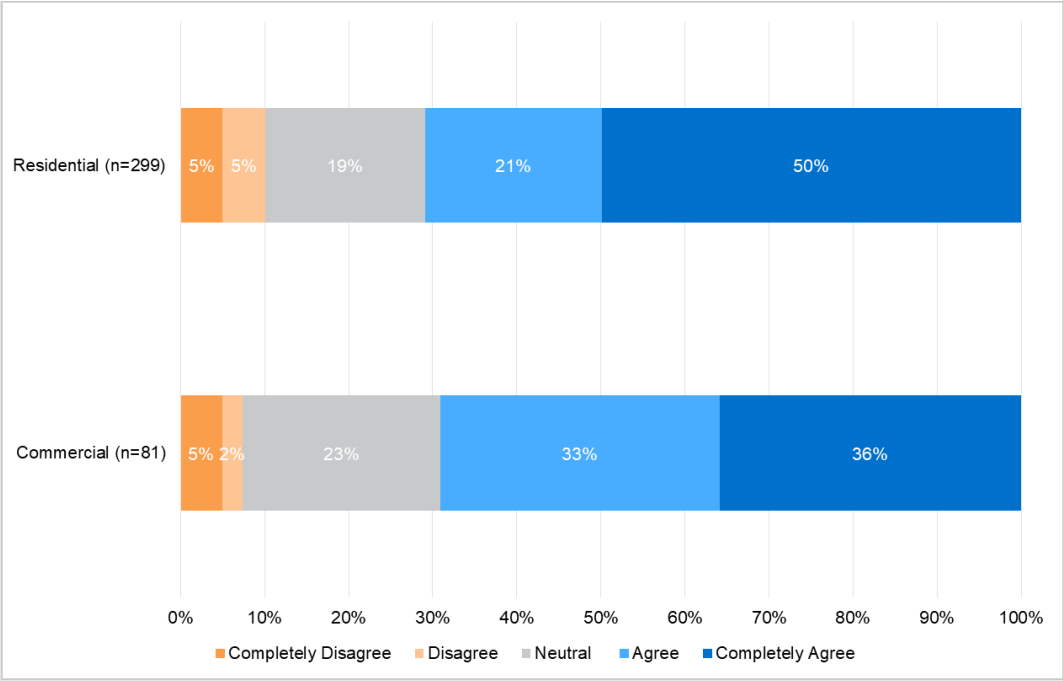


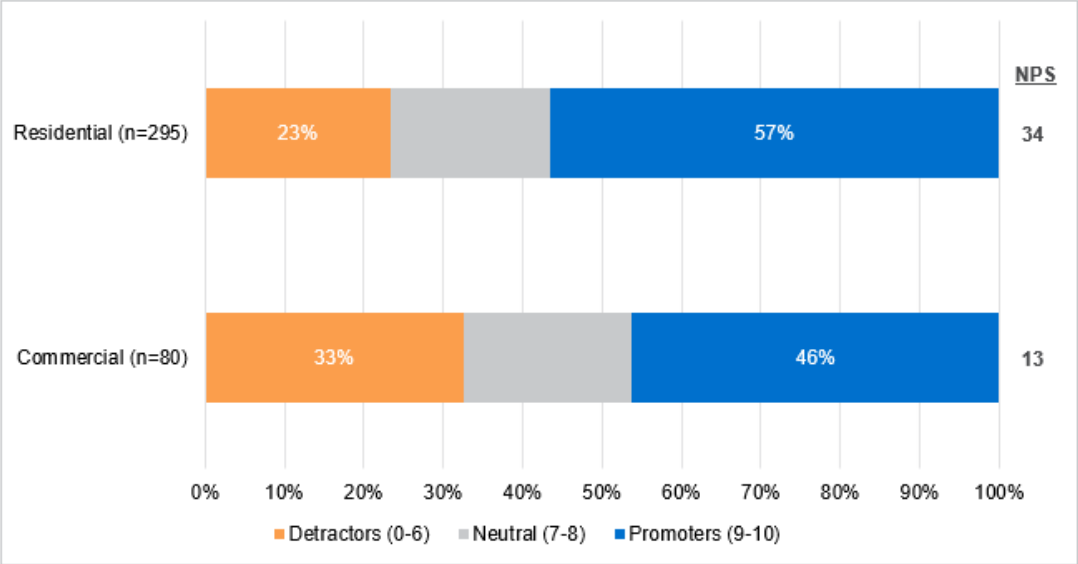
Figure 3-9 summarizes the distribution of responses to the statement, "SDG&E keeps me informed about how the program works." The results can be used to judge the effectiveness of communication and marketing efforts by SDG&E to keep customers up to date with program details. About 71% of the residential and 69% of commercial customers responded they "Agree" or "Completely Agree" with the statement. Only 10% of residential and 7% of commercial respondents said they "Disagree" or "Completely Disagree." These findings show only a small number of participants feel they are not kept informed about the program.

Figure 3-9: "SDG&E keeps me informed about how the program works"



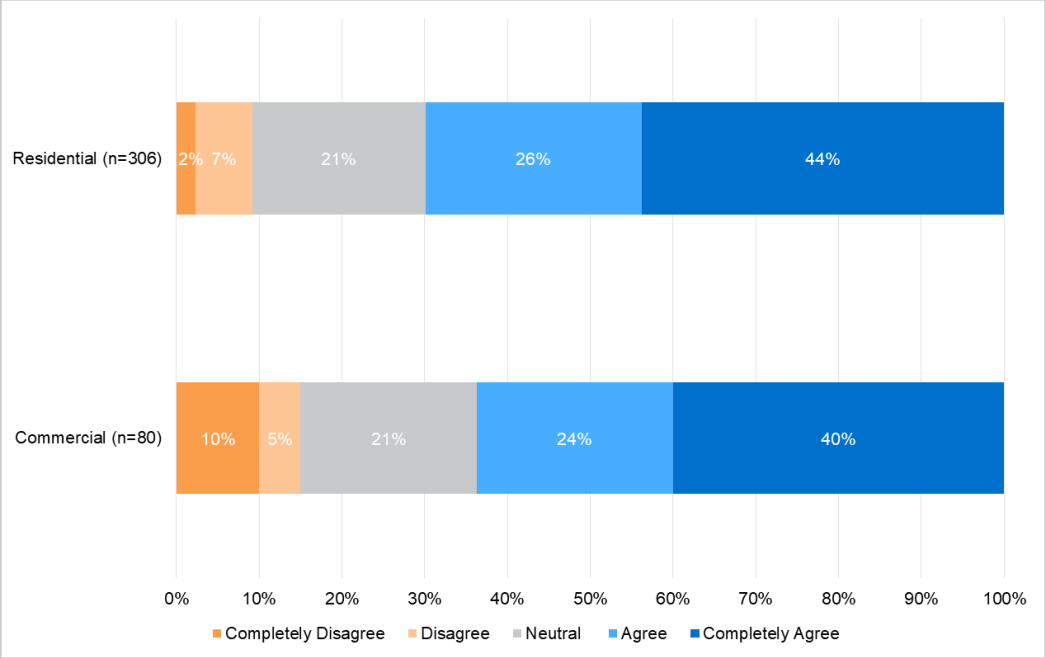
Respondents were asked if they would recommend the AC Saver Day Of program to friends or family (or associates for commercial respondents) on a scale from 0 to 10. This is a commonly asked question on marketing surveys and can be used to gauge overall perception of the program. A well-known methodology for evaluating this type of question uses the Net Promoter Score, or NPS. To calculate the NPS, the percentage of respondents who mark their likelihood of recommendation as a 9 or 10 is subtracted by the percentage who put 0 to 6. The idea behind this methodology is those customers who put 7 or 8 are likely indifferent about the program, but those on either end of the spectrum have strong feelings they would share with others. Generally, a NPS below 0 means the program needs improvement, above 0 is good and greater than 30 is considered to be excellent. Figure 3-10 shows the likelihood residential and commercial participants would recommend the program. The NPS is 34 for residential customers and 14 for commercial customers. The high NPS score for residential customers shows that participants generally view the program favorably. Commercial participants have a less positive view of the program, but they still have a positive NPS score.

Figure 3-10: "I would recommend the AC Saver program to friends or family (associates)"



Since the AC Saver Day Of program is designed to directly control participants AC units, customers do not have to actively take any action on event days. But respondents were asked if their normal routines were affected in order to see if enrollment in the program changed their behavior. In total, 70% of residential and 64% of commercial respondents put either "Agree" or "Completely Agree" when asked if their typical routines remain unchanged. Meaning, the majority of participants did not change their normal behavior on event days. But commercial respondents had a large portion of respondents on the other end of the distribution. About 15%, selected "Disagree" or "Completely Disagree." The results of this question are displayed in Figure 3-11.

Figure 3-11: "My typical routines are not affected on event days"



Respondents that put "Disagree" or "Completely Disagree" were asked how their routines changed. The residential responses were binned into common themes and are shown in Table 3-2. A customer's comment could be binned into more than one category if it touched on multiple themes. The majority of respondents commented about how the temperature in their home increased. Some comments centered on people working from home because of COVID. For example, "Now that my husband and I both work from home we need the AC on during the day during hot days."

Table 3-2: "How were your typical routines affected on event days?"

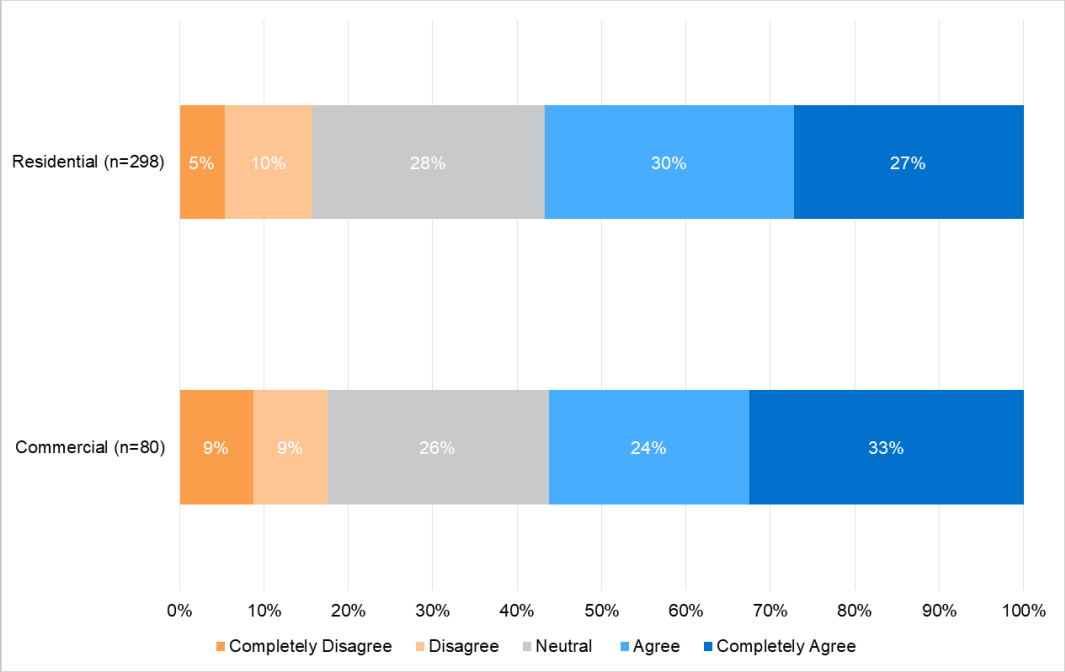
Residential Responses	# of Responses	% of Responses
House became uncomfortable	16	52%
Left house	4	13%
Change cooking schedule	4	13%
Changed appliance use	3	10%
Pre-cooled house	2	6%
Used fans	2	6%
Total comments	**29**	

There were too few commercial responses to bin into common themes, but the majority of comments centered on businesses becoming uncomfortably hot. There were multiple comments indicating normal business operations were affected on event days. For example, "Elevated

temperatures in the office adversely affect productivity. People may go home early because they struggle to get their work done." However, this has not translated to dissatisfaction with the program, as evidenced in the responses to the previous questions.

Finally, Figure 3-12 shows the distribution of customers who thought their homes or businesses remained at a comfortable temperature on event days. This question had by far the lowest top-two box score for residential customers of any question in this section, with 27% of residential customers saying they "Completely Agreed." The top-two box score was 33% for commercial customers. This result is not completely unexpected, since customers are having the AC units turned off on hot days. It is possible that customers are willing to be uncomfortable during event hours in exchange for the program bill credits. Furthermore, the high levels of overall program satisfaction in Figure show customers are generally pleased with the program despite the increased temperatures in their homes or businesses.

Figure 3-12: "The temperature in my home/business remains comfortable on event days"



3.3.4 Current Thermostat Setup

This section provides data about how many AC Saver Day Of customers already have a smart thermostat. Since this is a requirement for joining the AC Saver Thermostat program, these questions can help determine how many customers could make a smooth transition between programs. Respondents were first asked if they had Wi-Fi in their homes, which is necessary for operating a smart thermostat. A total 98% of residential and 96% of commercial respondents said they had Wi-Fi.

Next, customers were asked about their current thermostat configuration. Figure 3-13 displays the number of AC Saver Day Of respondents who already have a smart thermostat installed in

their homes. About 21% of residential customers and 13% of commercial customers have a smart thermostat.

Figure 3-13: Customers who already have a Smart Thermostat

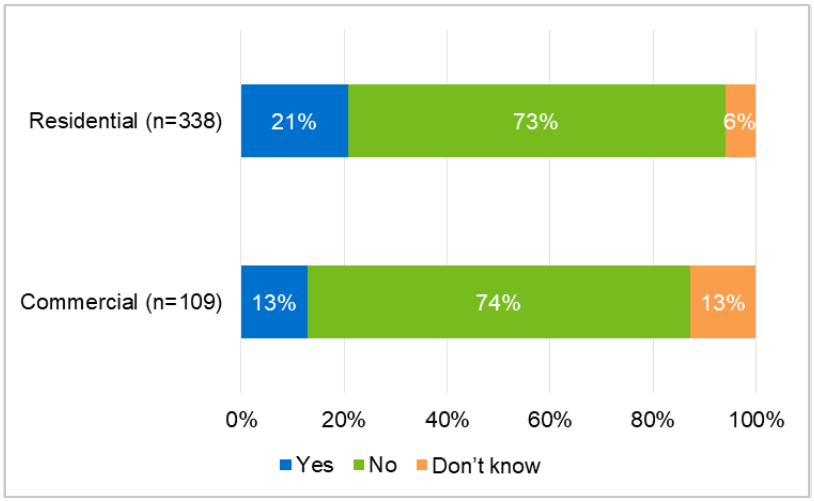
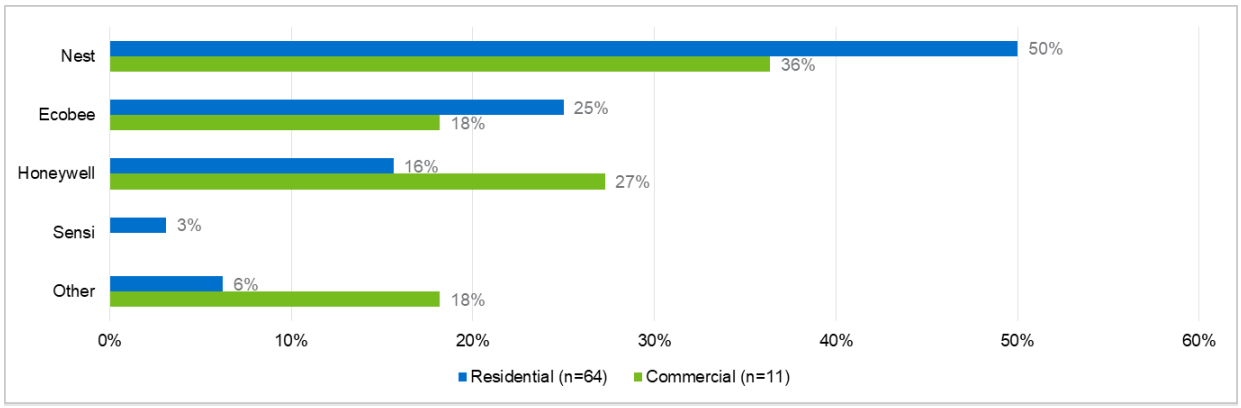


Figure 3-14 displays the percentage of each smart thermostat manufacturer for residential and commercial respondents. Approximately 50% of residential and 36% of commercial respondents with an existing smart thermostat have a Nest device. Ecobee and Honeywell are the second and third most common manufacturer for residential customers with about 25% and 16%, respectively. Out of the customers who already have a smart thermostat, 90% have one that is approved for the AC Saver Thermostat Program. These customers would have the easiest transition from AC Saver Day Of because they already have a program-approved smart thermostat installed. Lastly, the most common "Other" smart thermostat manufacturer was Venstar. Of the four residential customers that responded "Other," three of them had a Venstar thermostat. Meanwhile, one of two commercial customers had a Venstar thermostat.

Figure 3-14: Smart Thermostat Manufacturers



3.3.5 Interest in Moving Programs

The Gabor-Granger pricing methodology was used to gauge customer interest in moving to the AC Saver Thermostat Program. This approach asked respondents if they would be willing to

sign up for the Thermostat Program at varying incentive levels. Respondents were randomly shown a one-time incentive level between $50 and $125 and a recurring yearly incentive of either $20 or $40 (commercial customers were only shown $20). The possible one-time incentive levels were $50, $65, $80, $95, $110, and $125. Respondents were asked if they would be willing to join the Thermostat Program at one of these incentive levels. If the respondents answered “no”, then they were shown the next higher one-time incentive level, while the recurring incentive level remained constant. If respondents answered “yes”, then they were shown the next lower one-time incentive. Respondents continued to answer “yes” or “no” until they reached one of the incentive bounds ($50 or $125) or they gave a response different than their previous one (e.g., “yes” then “no”, or “no” then “yes”).

For example, a respondent could be asked if they would be willing to join the program for one-time incentive of $95 and a recurring incentive of $20. If they responded “no”, then they would be asked if they would be willing to join for a one-time incentive of $110 and a recurring incentive of $20. If the responded “yes”, then $110 was recorded as the level at which they are willing to join.

Figure 3-15 shows the percent of residential customers who responded they would be willing to enroll in the AC Saver Thermostat Program at a given incentive level. The percentage of customers willing to join the program increases at a relatively linear rate as the one-time incentive level increases. Approximately one-third of respondents said they were willing to join at the lowest one-time incentive level of $50. At the highest one-time incentive level of $125, over two-thirds of the residential respondents indicated they were willing to join the Thermostat Program.

There was an approximately 50/50 split between customers who were asked questions with the $20 and $40 recurring incentive level. About 30% of customers at the $20 recurring incentive level and 28% of customers at the $40 recurring incentive level said they would join the program for a one-time incentive level of $50. The $20 and $40 recurring incentive levels have similar levels of willingness to enroll up to the $95 one-time incentive level. At this point, the $40 recurring incentive has a higher percentage of customers who would be willing to enroll, although the difference in enrollment percentage between $20 and $40 is not statistically significant. There could be a couple of reasons why the $20 and $40 incentive levels were generally the same at lower levels of the one-time incentive level. First, it could be that the $20 difference in incentive level was not enough to motivate customers to join. Second, it is possible that customers focused more on the one-time incentive level when making their decision to enroll since that was an immediate payment that was meant to help cover the cost of a smart thermostat, which generally cost $100 or more.

Figure 3-15: Customers Willing to Enroll in AC Saver Thermostat (Residential)

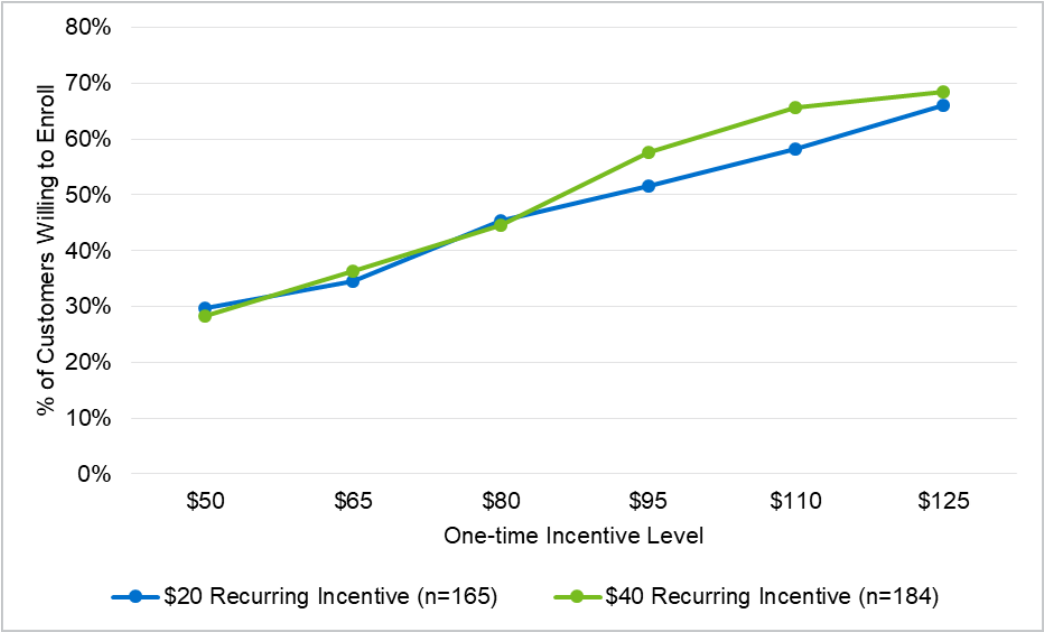
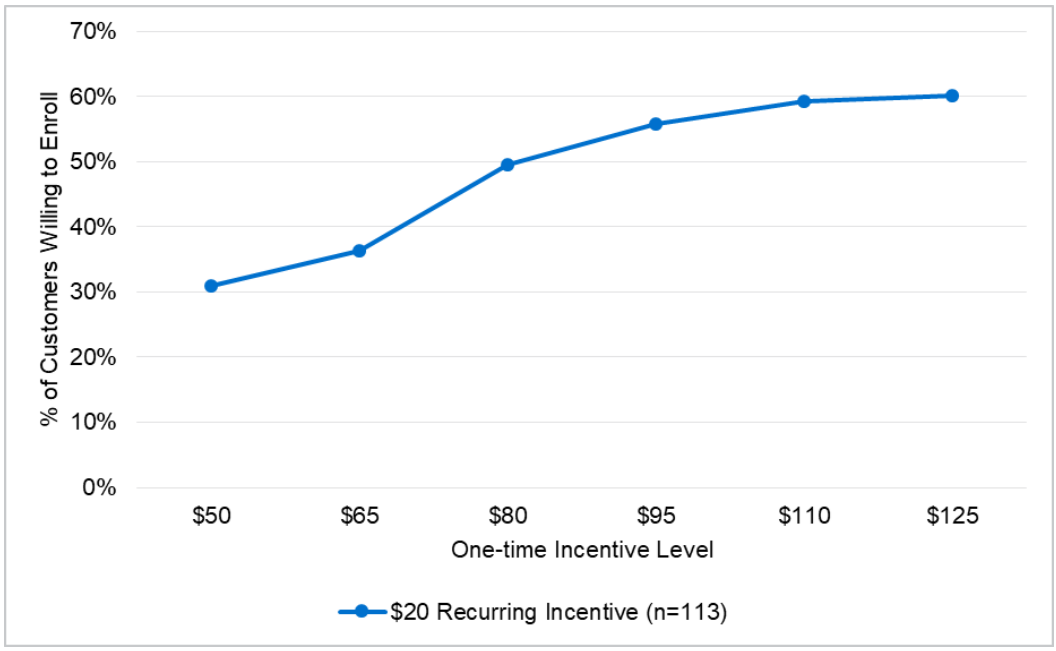


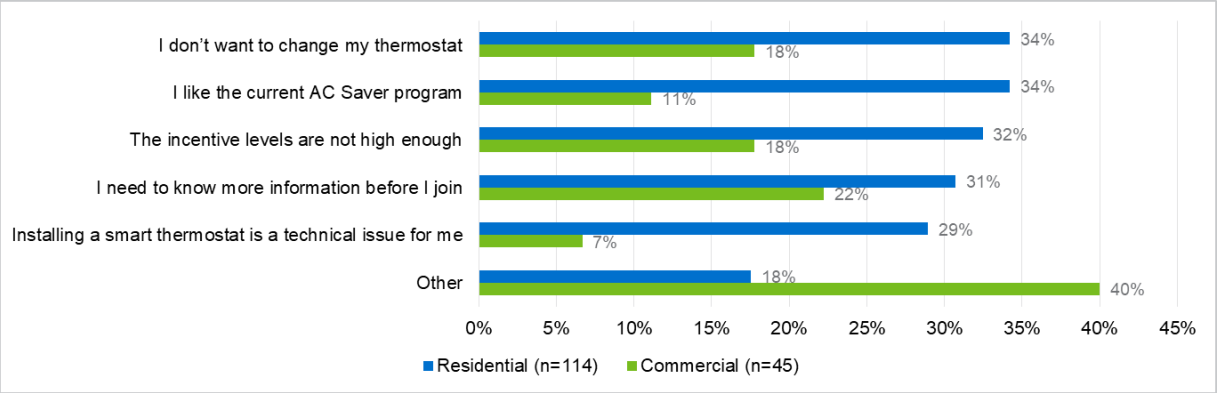
Figure 3-16 shows the percent of commercial customers who would be willing to join the program at different one-time incentive levels. Unlike residential customers, commercial respondents were only shown a $20 recurring incentive on the survey. About 31% of respondents said they would join the program at the $50 one-time incentive level. There is a noticeable increase in customers willing to join at the $80 incentive level. The percentage of customers willing to join plateaus at the high levels of one-time incentive. Approximately 60% of commercial customers indicated they would join at the $125 level.

Figure 3-16: Customers Willing to Enroll in AC Saver Thermostat (Commercial)



In total, 33% of residential and 40% of commercial respondents indicated that they would not join the program at the highest one-time incentive of $125. These respondents were asked an additional question about why they would not be interested in joining AC Saver Thermostat. The results are shown in Figure 3-17. Residential respondents cited not wanting to change their thermostat and liking the current AC Saver program as their top reasons for not wanting to join. Commercial respondents generally wanted to know more information before joining. Respondents were able to select more than one answer for this question.

Figure 3-17: Reasons for Not Wanting to Join the AC Saver Thermostat Program



Those respondents that selected "Other" were able to provide an open response. The responses were binned and are displayed in Table 3-3 and Table 3-4. Some residential respondents expressed that renting would prevent them joining the program because they would have to get the permission of the landlord to change the thermostat. Additionally, they might not receive the incentive if the utility bill is not under their name. Other respondents indicated they did not want to give up control of their thermostat. These customers may not have realized they can opt-out of events, so this is a point that can be emphasized when marketing to new customers. Finally, some customers had privacy or security concerns with having a thermostat connected to Wi-Fi, controlled by a third party.

Table 3-3: "Why wouldn't you be interested in joining the smart thermostat program?" (Residential)

Residential Responses	# of Responses	% of Responses
I am renting or selling	5	33%
Don't want to give up control of thermostat	5	33%
Privacy or security concerns	4	27%
Other	1	7%
Total comments	**15**	

Table 3-4: "Why wouldn't you be interested in joining the smart thermostat program?" (Commercial)

Commercial Responses	# of Responses	% of Responses
Don't want to give up control of thermostat	9	53%
I don't own the business	5	29%
Privacy or security concerns	1	6%
Too hot in business	1	6%
Like current program	1	6%
Total	**17**	

Respondents who selected "I need to know more information before I join" in Figure 3-17 were asked to write what information they would need. The primary piece of information residential respondents had questions about was regarding privacy or security concerns with having a smart thermostat. For example, one respondent said, "How is communication with a smart device secured by SDG&E? What security measures are being taken to ensure hackers do not access the devices and control the thermostat?" In future communication with customers, SDG&E can explain the relationship and responsibilities between the smart thermostat manufacturers and the utility regarding security. Additionally, SDG&E can increase education around understanding the functionality of a smart thermostat and how it differs from a normal thermostat. One respondent wrote, "How would the smart thermostat benefit me besides the monetary rewards?" The results for residential customers are shown in Table 3-5. The commercial comments were too few to bin but had similar responses to residential customers.

Table 3-5: "What additional information would you like to know about the smart thermostat program?"

Residential Responses	# of Responses	% of Responses
Privacy or security concerns	8	30%
Cost of thermostat or installation	4	15%
Don't understand how a smart thermostat works	4	15%
SDG&E's control of thermostat outside event	3	11%
Number of event days	2	7%
Incentive level	2	7%
Temperature setback level	2	7%
Effect on bill	1	4%
Wi-Fi stability	1	4%
Total comments	**25**	

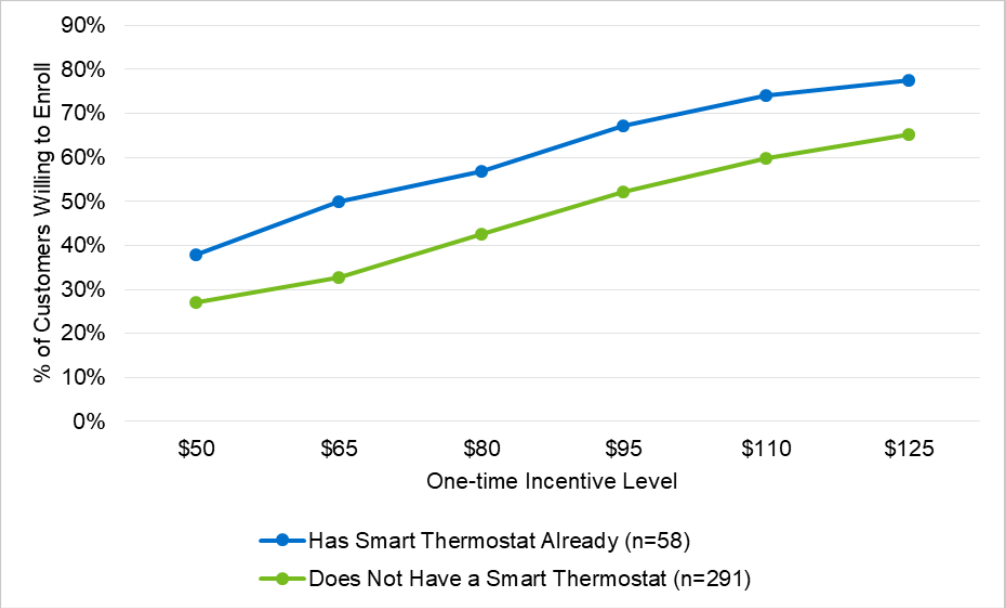
Another finding of note revolves around the bill credits respondents received in 2020 for being enrolled in AC Saver Day Of. Respondents who said they would join the smart thermostat program at the $50 one-time incentive level and those who said they would not join the program

at $125 had similar bill credits on average in 2020. For example, residential customers at the $40 recurring incentive level who would join the progam at a one-time incentive of $50 had an average bill credit of $81.90, whereas those who would not join at $125 had an average bill credit of $79.41. These results were similar for residential customers shown the $20 recurring incentive level and commercial customers. None of the comparisons were statistically significant.

The results of the Gabor-Granger methodology were also analyzed seperately for customers who already have a smart thermostat installed. Figure 3-18 presents the results for residential customers with and without a smart thermostat. Not suprisingly, customers who currently have a smart thermostat are more likely to enroll at every incentive level compared to those customers who do not have a smart thermostat. At each of the six incentive levels, the difference in enrollment between the two groups is statistically significant at the 90% confidence level.

A total of 22% of customers with a smart thermostat said they would not enroll at the $125 incentive level versus 35% of customers without a smart thermostat. Customers who already have a smart thermostat face the least number of barriers when switching to the AC Saver Thermostat Program. These participants should be the top prorioty when recruiting customers to switch programs.

Figure 3-18: Smart Thermostat Customers Willing to Enroll in AC Saver Thermostat (Residential)



Only nine of the commercial segment respondents who answered questions using the Gabor-Granger methodology reported having a smart thermostat. Eight of the nine respondents said they would join the program for the $95 one-time incentive or less. The last respondent indicated they would not join the program.

Finally, all customers were asked if they had any additional thoughts or concerns about participating in the AC Saver Thermostat Program. The residential results were binned for common themes and are shown in Table 3-6. The most common concern revolved around the cost of a smart thermostat and installation. Many customers did not have solid grasp about the money or effort required to change thermostats. Futhermore, some customers thought switching thermostats would not be worth the hassle. For example, one responsdent noted, “I would have to buy a new thermostat and pay someone to install it. The one time incentive you’re offering would not cover the cost. Plus it's not worth it to me to be hot for only $20.00.”

The biggest barrier in switching programs will be getting customers to buy and install a new thermostat. When marketing to new customers, SDG&E could provide the estimated cost to buy and install a smart thermostat compared to the current incentive levels for participating in the program. Being upfront about the costs associated with a smart thermostat allows customers to make an informed decision about switching programs. Additionally, it shows customers that in the long run the cost of a smart thermostat will be recouped over time with the recurring incentive in addition to non-event-related energy savings.

One respondent had a series of excellent questions that can all be clarified when recruiting customers to the program, “Would we need to hire an electrician to install? What happens if the Wi-Fi goes out? Can you manually use the smart thermostat?” These questions point to the lack of understanding the average customer has about smart thermostats. Generally, customers will be wary about adapting to a new technology that is unfamilar to them. Hence, the level of education around smart thermostats needed to convince customers to switch programs will be high. Basic points about smart thermostat usage and functionality should be included when marketing to new customers.

Another common point of concern was the control SDG&E has over a customer’s thermostat. Some questions were general in nature. For example, “What control does SDG&E have over my settings?” Other participants did not like the idea of giving up control of their thermostat to an outside body. One respondent said, “I feel like SDG&E may be able to override my choices, which I don't love. It seems a little like an invasion of privacy.” Another wrote, “I won't give an outside company access to my thermostat, end of story.” These customers will be very unlikely to switch programs, even with high incentive levels. But some of these concerns could be mitigated through initial marketing materials that explain the role SDG&E plays in the program implementation.

Table 3-6: "What additional thoughts or concerns would you have about participating in the smart thermostat program?" (Residential)

Residential Responses	# of Responses	% of Responses
Cost of thermostat or install	32	29%
SDG&E's control of thermostat outside event	16	15%
Incentive level should be more	13	12%
Privacy or security concerns	12	11%
Need more info	6	5%
How a smart thermostat works	6	5%
Wi-Fi stability	4	4%
Program is a good idea	3	3%
Want notifications	3	3%
Want to be able to opt-out	3	3%
Too technical to understand	2	2%
Do I get the ACSDO incentive also?	2	2%
Don't use AC very often	2	2%
Keep current program	2	2%
Effect on bill	1	1%
Number of event days	1	1%
Temperature setback	1	1%
Renting home	1	1%
Total comments	**98**	

Table 3-7 presents the additional thoughts or concerns from commercial customers. The top two concerns for commercial respondents centered around the temperature in their business and the cost related to buying and installing a smart thermostat. Overall, commercial participants were more concerned about their building getting uncomfortable than residential participants because they have to worry about employees or customers getting overheated. One respondent said, "If there is too much complaining from employees about the heat we need to be able to make adjustments." Another responded, "I'm concerned it will get too hot in my business and make it uncomfortable for customers to shop." When recruiting commercial customers, SDG&E can highlight the opt-out feature already build into the program design and the setback level being relatively small.

Table 3-7: "What additional thoughts or concerns would you have about participating in the smart thermostat program?" (Commercial)

Commercial Responses	# of Responses	% of Responses
Concerns about business getting hot	7	26%
Cost of thermostat or install	7	26%
Need more info	4	15%
Don't want to give up control of thermostat	3	11%
Want to be able to opt-out	2	7%
Program is a good idea	1	4%
Privacy or security	1	4%
How a smart thermostat works	1	4%
Renting business	1	4%
Total	**26**	

When the time comes for customers to change programs, the number of customers who actually make the switch will likely be lower than the percentages shown in Figure 3-15 and Figure 3-16. This is especially true for customers who do not already own a smart thermostat, since the barriers to entering the program are higher. Many customers might not think it is worth the effort to buy and install their own smart thermostats, even if they are interested in the program.

Interestingly, the percentage of respondents who said they would be willing to sign up for the smart thermostat program at the lowest one-time incentive level ($50) was about 30% of all AC Saver Day Of participants, regardless of customer class and recurring incentive. This group of people is likely more motivated to switch programs, since they would potentially do it for the lowest incentive. Additionally, this group of people might be intrigued by new technologies like smart thermostats, or want to be involved in energy saving programs. Convincing this type of customer who is highly motivated to switch programs will be key to increasing program enrollment.

3.4 AC Saver Day Of Conclusions and Recommendations

Conclusion 1

Generally, participants in AC Saver Day Of are happy with the program. About 80% of residential and 76% of commercial customers are either "Satisfied" or "Very Satisfied" with the program. The few customers that were unsatisfied pointed to low incentive levels as their reasoning. On average, the difference in bill credits received by customers who were "Very Unsatisfied" and the rest of the customers was statistically significant.

- ***Recommendation 1***
  The high levels of satisfaction show that large-scale changes to the program are unnecessary. Additionally, since the program may be in a transitional state, changes may provide limited value. Lastly, although participants on the low end on the range of bill credits may be unsatisfied, they can still provide useful load reductions and should remain on the program.

Conclusion 2

One of the largest barriers for customers switching to the Day Ahead program is the purchase and installation of a smart thermostat. Numerous respondents noted that they were hesitant about the Day Ahead program because they did not know the cost or how to connect a smart thermostat. Additionally, respondents were unsure about SDG&E's control of the thermostat outside of event hours and voiced concerns about privacy.

- ***Recommendation 2a***
  Include free installation of the smart thermostat as part of the initial enrollment process. This would encourage more customers to switch programs, especially those who would have technical difficulties with the installation process.

- ***Recommendation 2b***
  Make a concerted effort to educate customers about how a smart thermostat works, the control SDG&E has over the thermostat, and how customers' privacy is protected. This will help answer some of the most common concerns customers expressed about the Day Ahead program.

Conclusion 3

Customers who already have a smart thermostat are more likely to join the Day Ahead program. In total, 78% of respondents who already have a smart thermostat and 65% of respondents without a smart thermostat said they would switch programs at the $125 one-time incentive level. Customers with a smart thermostat already understand how it functions and do not have to spend the initial one-time incentive on the purchase of a new thermostat.

- ***Recommendation 3***
  Concentrate recruitment efforts on those customers who already have a smart thermostat when asking customers to switch programs. These customers will be more likely to switch and require less education about how a smart thermostat operates.

4 AC Saver Day Ahead

The following sections include a brief description of the AC Saver Ahead program and process evaluation goals, the results from both the participant and non-participant surveys, and conclusions.

4.1 AC Saver Day Ahead Program Overview

AC Saver Day Ahead, also known as the AC Saver Thermostat Program, offers residential and commercial customers a two-tiered incentive for allowing SDG&E to remotely adjust their thermostat settings when demand response is needed. Customers participate using thermostats they directly purchase and install. An initial incentive of $50 is provided upon registration for each of up to two thermostats. An additional incentive of $20 is paid at the end of each program year if the thermostats stay connected to Wi-Fi and the participant is enrolled through the end of October. The thermostats are adjusted between 12 PM and 9 PM for no more than four hours at a time. Participants can opt-out of the adjustment on any given day.

SDG&E program staff had a couple overarching evaluation goals for the AC Saver Day Ahead program. First, they wanted to know how to improve the program and the customer experience. Topics of interest included event notifications, the number of events, payment method for participation, and incentive levels. Second, program staff hoped to find out how many non-participants, customers with air conditioners who are not currently enrolled, would be interested in joining. The two goals were researched using two different surveys: a participant survey and a non-participant survey.

The participant survey was given to customers enrolled in the Day Ahead program. Presently, participants have a mix of different smart thermostat manufacturers, including Nest, Ecobee and Honeywell. Additionally, there is a subsection of customers that received a free smart thermostat when the program was first launching that has slightly different functionality. The participant survey primarily aimed to answer research questions about a customer's experience, but it also helped to see if different smart thermostats could change customers' perception of the program.

The non-participant survey was given to customers who had previously received a rebate for purchasing a smart thermostat or customers who had similar electric usage to participants in AC Saver Day Of. Rebate customers received a rebate for their smart thermostats because they were enrolled in a separate energy saving program named the Plug Load and Appliance program. As previously mentioned in Section 3.1, SDG&E is looking to switch as many customers as possible to the Day Ahead program. However, the Day Ahead program is also expanding to customers who are currently not enrolled in a demand response program. SDG&E noted they were hoping to add as many as 8,000 new customers to the Day Ahead program. As

such, a key research question addressed in the non-participant survey was the incentive level that customers would be willing to join the program.

4.2 AC Saver Day Ahead Participant Survey Overview

The AC Saver Day Ahead participant survey had the following survey objectives:

- **Program Participation Awareness and Motivation:** Are customers aware of their participation in the program? What motivated customers to participate in the AC Saver Day Ahead program?
- **Event Notifications:** Do customers receive event notifications? If so, were customers satisfied with the event notifications they received and what is their preferred method of notification?
- **Satisfaction with AC Saver Day Ahead:** Are participants satisfied with AC Saver Day Ahead? What aspects of the program do participants like and dislike?
- **Event Opt-Outs:** Do customers opt-out of events? If so, why do they opt-out and how often?
- **Current Thermostat Usage:** How do customers use and interact with their smart thermostats?
- **Incentive Level:** Are customers satisfied with the current AC Saver Day Ahead incentive levels?

The AC Saver Day Ahead participant survey was administered via the web and was incentivized to encourage participation. A random sample of 1,400 participants out of approximately 10,000 enrolled customers was drawn to receive the survey. In total, 195 responses were received, which is well above the minimum quota of 140 responses. Participants were eligible to receive the survey if they had experienced at least one event day in 2020, were not enrolled in AC Saver Day Of, had valid contact information, and they did not have a “do not contact” flag.

Table 4-1 shows an overview for the AC Saver Day Ahead participant survey.

Table 4-1: AC Saver Day Ahead Participant Survey Summary

Survey Start	Survey End	Days in Field	Incentive	Responses	Response Rate
8/16/2021	8/23/2021	8	$15	195	14%

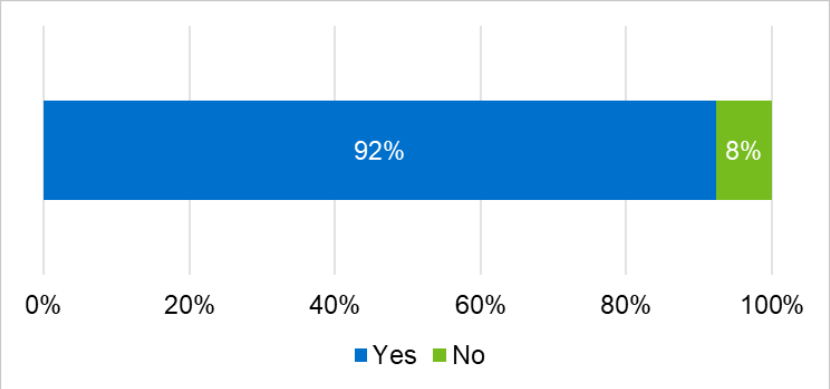
4.3 AC Saver Day Ahead Participant Survey Findings

The following sections summarize the survey findings for each of the research questions. The number of respondents who answered each question is displayed as “n” in each table and figure title.

4.3.1 Program Participation Awareness and Motivation

The first series of questions in the survey was used to gauge if respondents knew they were enrolled in the program. As shown in Figure 4-1, the vast majority of respondents (92%) were aware that their household was participating in AC Saver Day Ahead. The large number of respondents that are aware of their participation is a strong indication that SDG&E is keeping customers informed of their enrollment.

Figure 4-1: "Are you aware of your participation in AC Saver Day Ahead?" (n=195)



The AC Saver Day Ahead program is known by various names to different customer segments. The name that customers associate with the program can change based on their smart thermostat manufacturer. Customers with a Nest thermostat often know the program as "Rush Hour Rewards", while those with a Ecobee might know the program as "Community Energy Savings," or "eco+." Meanwhile, the name listed on SDG&E's website is "AC Saver Thermostat Program."

Figure 4-2 shows the name that respondents most associate with the program. The most common name selected was "Rush Hour Rewards" followed by "AC Saver Thermostat," "eco+," and "Community Energy Savings." Of the respondents who selected "Rush Hour Rewards," 96% reported having a Nest thermostat, which is the most popular thermostat in AC Saver Day Ahead. About 55% of respondents who put "eco+" and 78% who said "Community Energy Savings" reported having an Ecobee thermostat. The remaining respondents who put "eco+" or "Community Energy Savings" reported having a Nest thermostat, which is an interesting finding since Nest customers do not receive marketing materials with these program names.

Figure 4-2: "Which name do you most associate with the program?" (n=180)

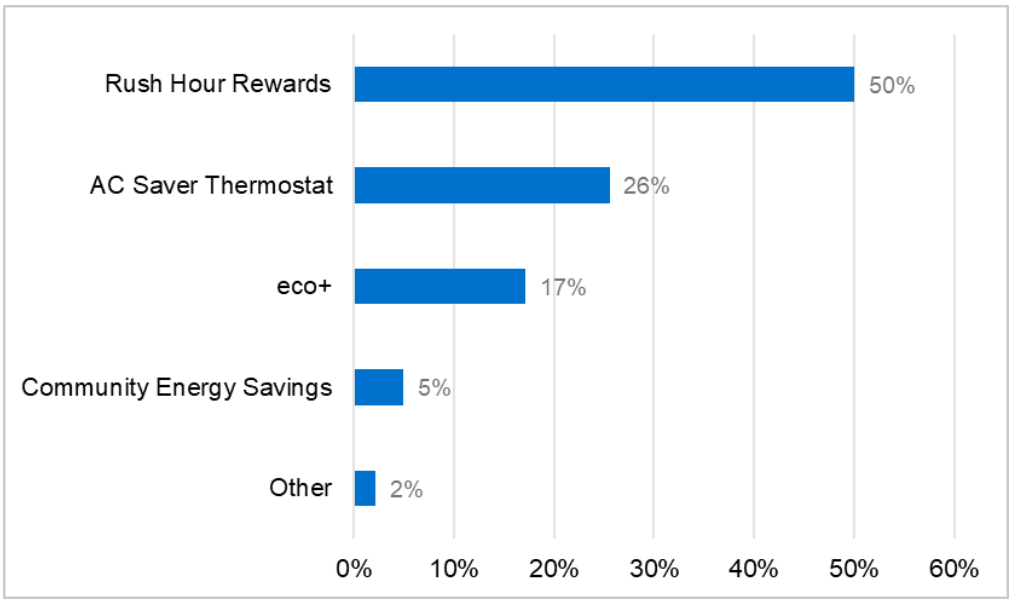
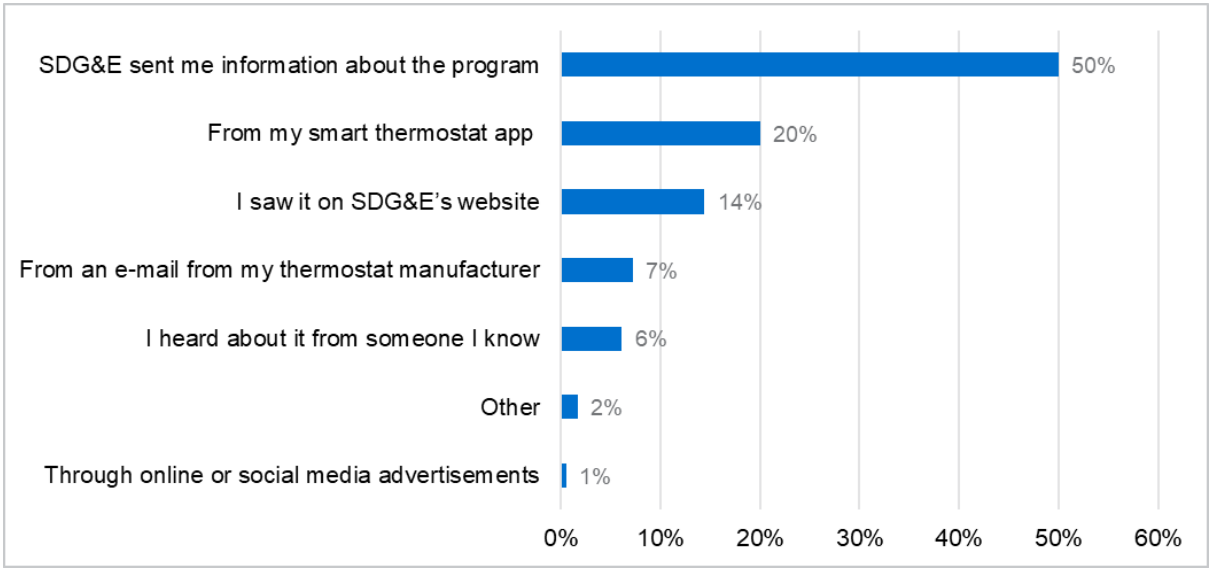


Figure 4-3 shows how respondents first heard about AC Saver Day Ahead. Half of the respondents learned about the program directly from SDG&E, while 20% of customers heard about it from their smart thermostat manufacturer's app. When trying to recruit new customers into the program, SDG&E can continue to leverage smart thermostat manufacturers to assist with marketing efforts. Prominent placement on the SDG&E website can also lead to increased enrollments.

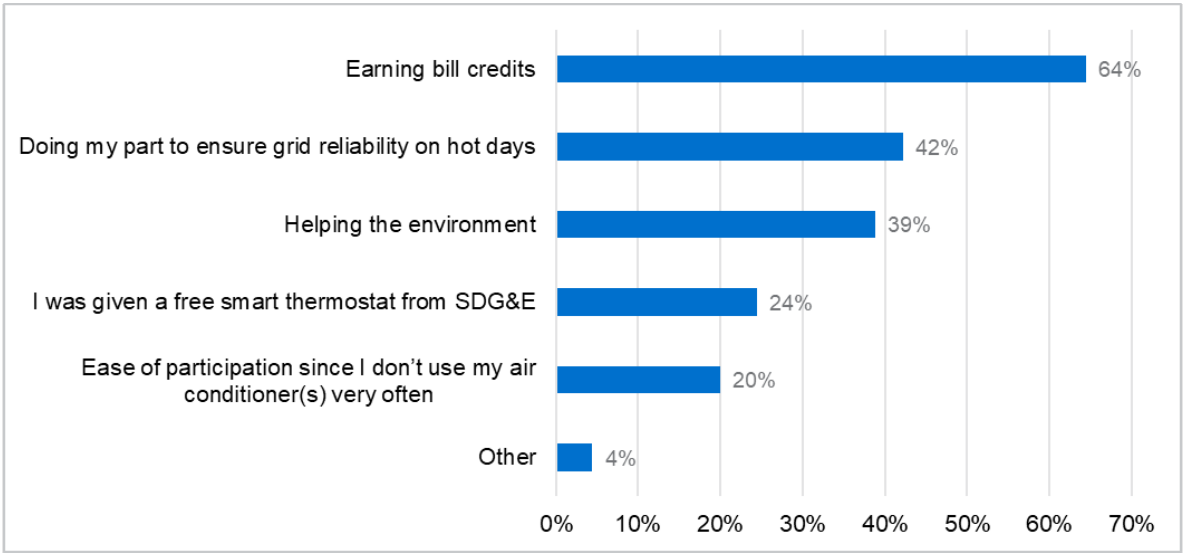
Figure 4-3: "How did you first hear about the program?" (n=180)



In general, customers were motivated to enroll in AC Saver Day Ahead to earn bill credits, with 64% of respondents indicating this encouraged them to join. A large percentage of respondents (54%) said they joined for non-monetary reasons like ensuring grid reliability or helping the

environment. This provides evidence that customers are aware their participation can provide positive externalities to society, and they see other benefits of the program besides money. Figure 4-4 displays the results for participant motivation. Respondents were allowed to select more than one answer to this question.

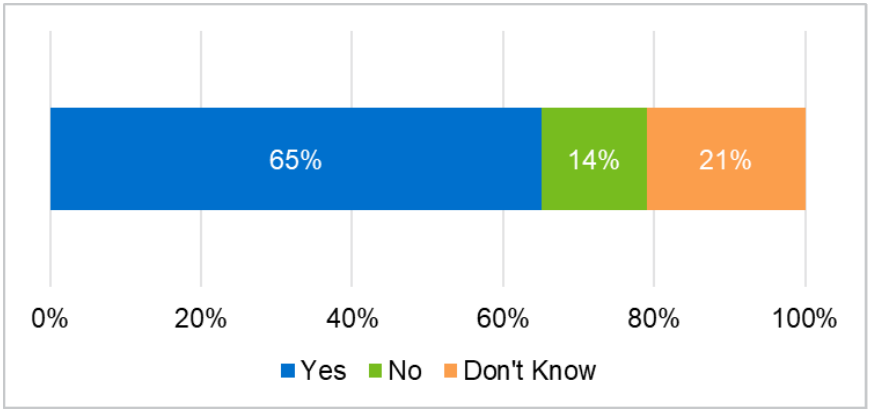
Figure 4-4: Motivation for Participating in AC Saver Ahead (n=180)



4.3.2 Event Notifications

The type of event notification sent to customers enrolled in AC Saver Day Ahead depends on their smart thermostat manufacturer. Customers with a Nest thermostat do not receive a notification, but they can determine if an event is occurring by looking at their thermostat. Ecobee customers receive an email before an event takes place. Figure 4-5 displays the percentage of customers that recalled receiving an event notification. About two-thirds of respondents indicated they have received a notification, while 14% said they had not received one and 21% of respondents said they did not know if they received a notification.

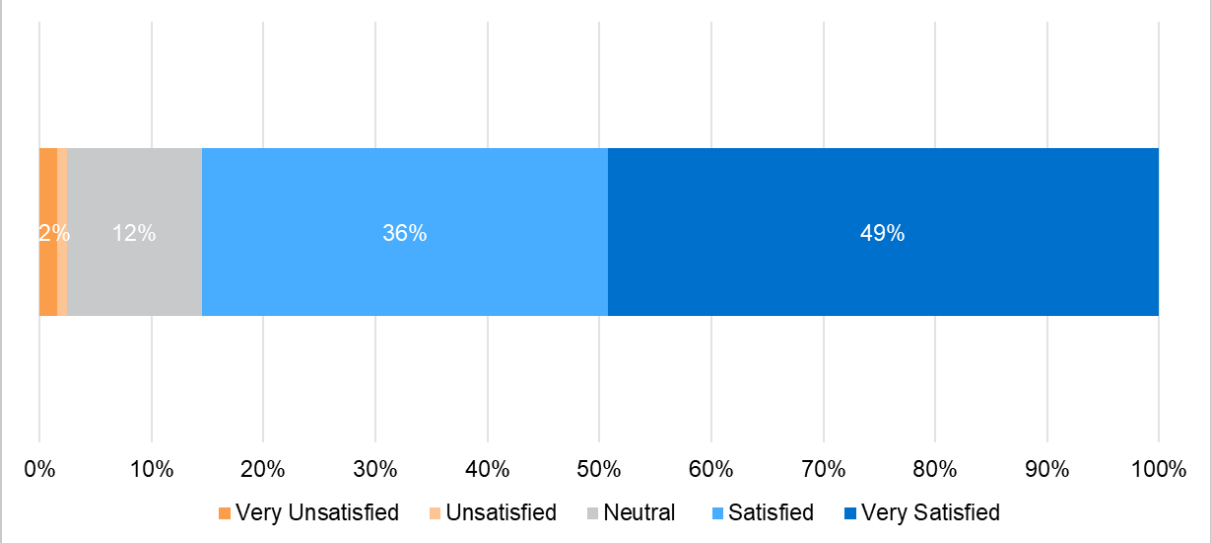
Figure 4-5: Respondents Who Recall Receiving an Event Notification (n=195)



Customers who said they received a notification were asked about their satisfaction with the timing of it. Approximately 75% of respondents indicated they were either "Very Satisfied" or

"Satisfied" with the event notification timeliness. Only about 3% of respondents put "Very Unsatisfied" or "Unsatisfied." These percentages suggest that those customers who got a notification were happy with how much advance notification they received. Figure 4-6 presents the entire distribution of satisfaction scores.

Figure 4-6: Satisfaction of Event Notification Timeliness (n=124)



Respondents who said they had never received an event notification were asked if they would like to get one in the future. About 62% of these customers indicated they would like to receive advance notification of events. The results are shown in Figure 4-7.

Figure 4-7: "Would you like to receive notifications in the future?" (n=68)

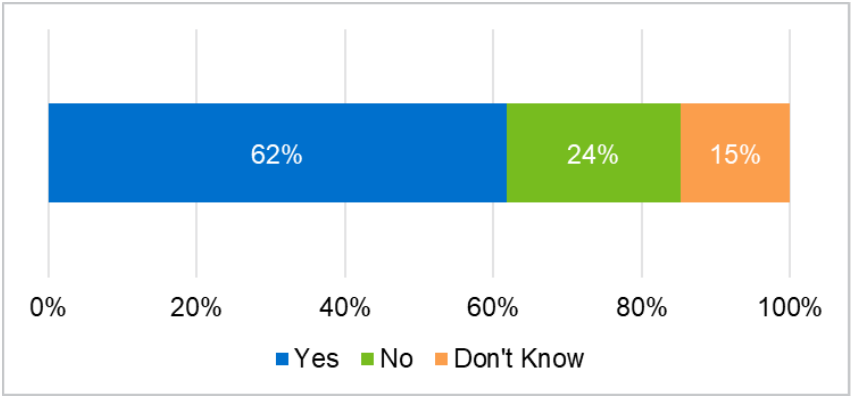
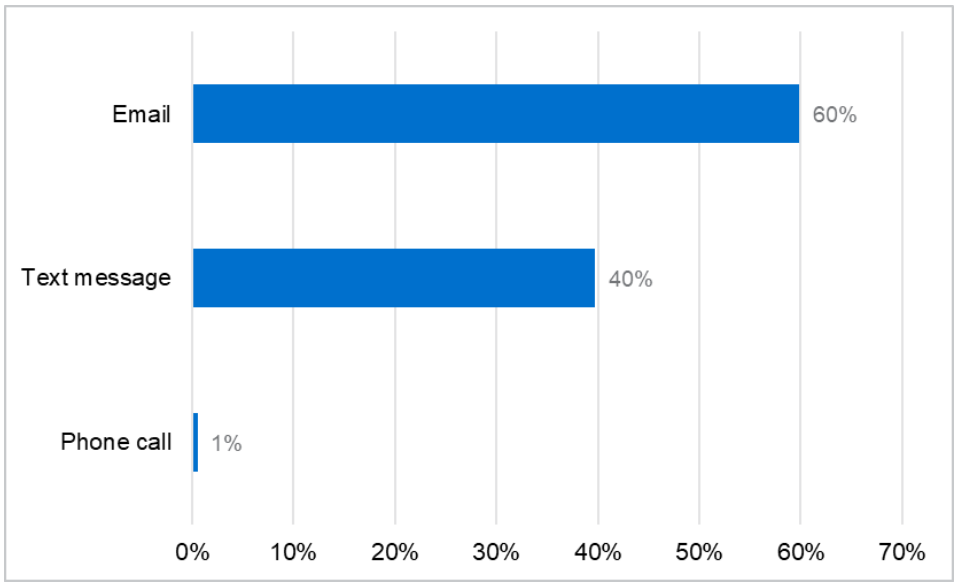


Figure 4-8 presents how respondents would like to receive the event notifications. Generally, customers prefer either email or text notification. About 60% of respondents would like an email and 40% prefer a text message.

Figure 4-8: Preferred Communication Channel for Event Notifications (n=179)



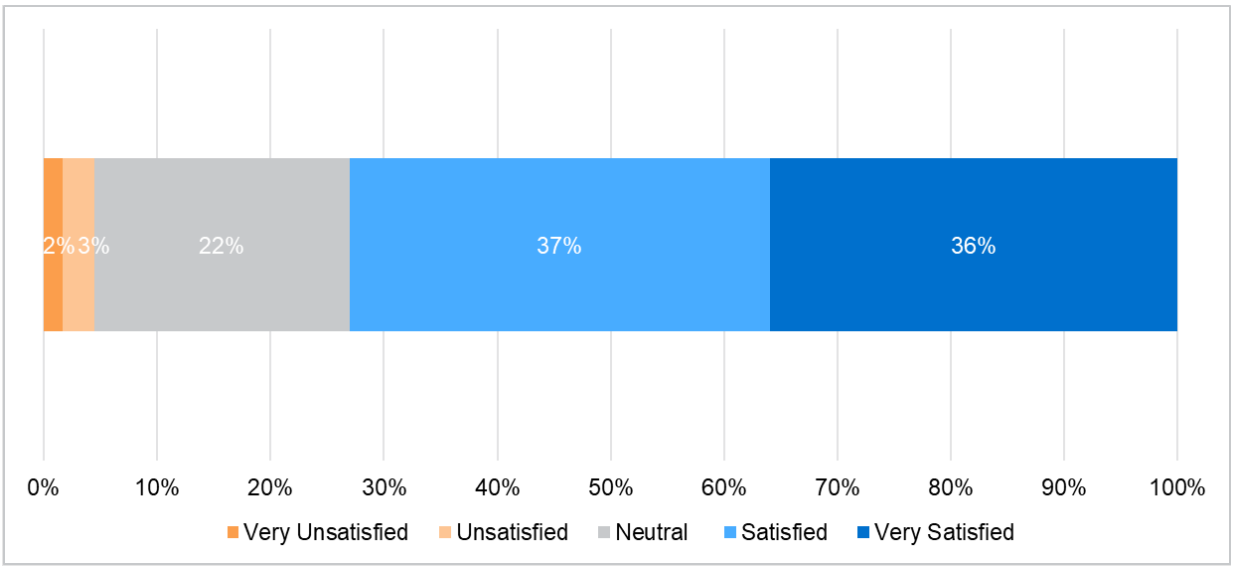
In the future, SDG&E could consider standardizing the notification process by working with the various thermostat manufacturers. This would ensure that all customers enrolled in the program have similar experiences. Additionally, it would allow SDG&E to produce one set of marketing materials explaining the notification process for all customers.

4.3.3 Satisfaction with AC Saver Day Ahead

Respondents were asked to rate their overall satisfaction with the AC Saver Day Ahead program. Approximately 73% of respondents said they were “Very Satisfied” or “Satisfied” with the program. The overall distribution of satisfaction scores is displayed in Figure 4-9.

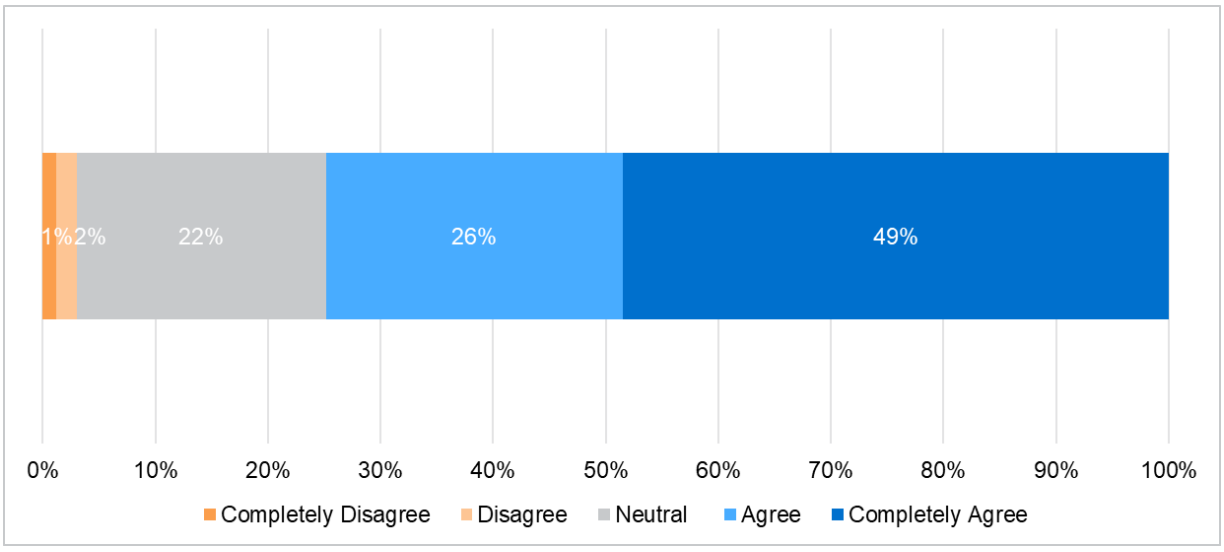
Only a small percentage of respondents (5%) indicated they were “Unsatisfied” or “Very Unsatisfied” with the program. These customers were given the chance to explain why they were unsatisfied. There were not enough responses to bin into common themes, but customers were generally not happy with how hot their homes became during events. One customer said, “During the day I keep my AC set to 80 degrees. The program does not appear to take set point into consideration and simply raises the thermostat up a fixed number of degrees.” The customer went on to say they often adjust their thermostat during events because it becomes hot in their home. In the future, SDG&E could consider raising customers’ thermostats by varying amounts based on the current set point. Customers with a low set point could have their thermostat raised more degrees than those with a high set point. Alternatively, the program could set all participating thermostats at a specific set point during events.

Figure 4-9: AC Saver Day Ahead Program Satisfaction (n=178)



Respondents were next asked a series of questions about how much they agreed with a set of statements about AC Saver Day Ahead. The first question asked was if the current number of event days was reasonable. Figure 4-10 shows the distribution of responses for this question. About 75% of respondents "Completely Agree" or "Agree" that the current number of event days is reasonable. Only 3% of respondents marked "Completely Disagree" or "Disagree" when asked if the number of event days is reasonable. The high scores for this question should be interpreted as most customers having no issue with the number of event days.

Figure 4-10: "The number of event days is reasonable" (n=167)



Next, the survey asked respondents if they were kept informed about how AC Saver Day Ahead functions. As shown in Figure 4-11, two-thirds of customers marked "Completely Agree" or "Agree" when asked if SDG&E keeps them informed about how the program works. Overall, the scores for this question are high, but one-third of respondents selected "Neutral" or lower.

SDG&E should ensure customers are receiving information about the program at least once a year and any additional communication from the thermostat manufacturers in consistent with SDG&E's messaging.

Figure 4-11: "SDG&E keeps me informed about how the program works" (n=173)

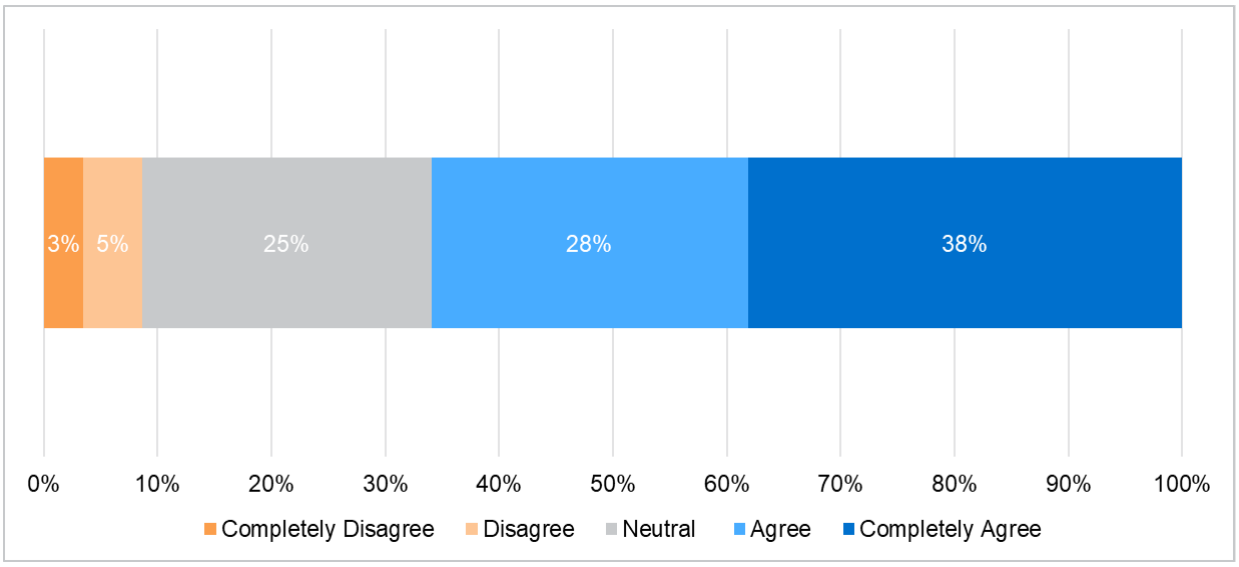
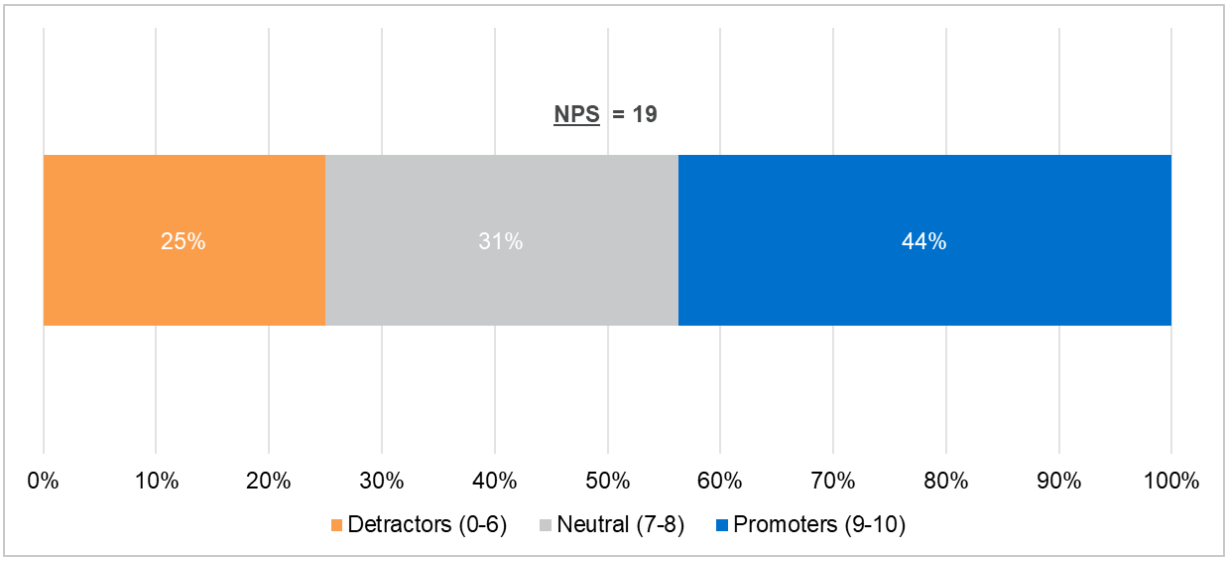


Figure shows how likely respondents would be to recommend the program to friends or family. This question is displayed using The Net Promoter Score (NPS), which is a common metric used in marketing surveys. Overall, 44% of respondents would strongly recommend the program, while 25% of respondents would likely not recommend it. The NPS is 19, which is a relatively good score and shows participants generally view the program in positive light. See Figure 4-12 for more details about Net Promoter Scores.

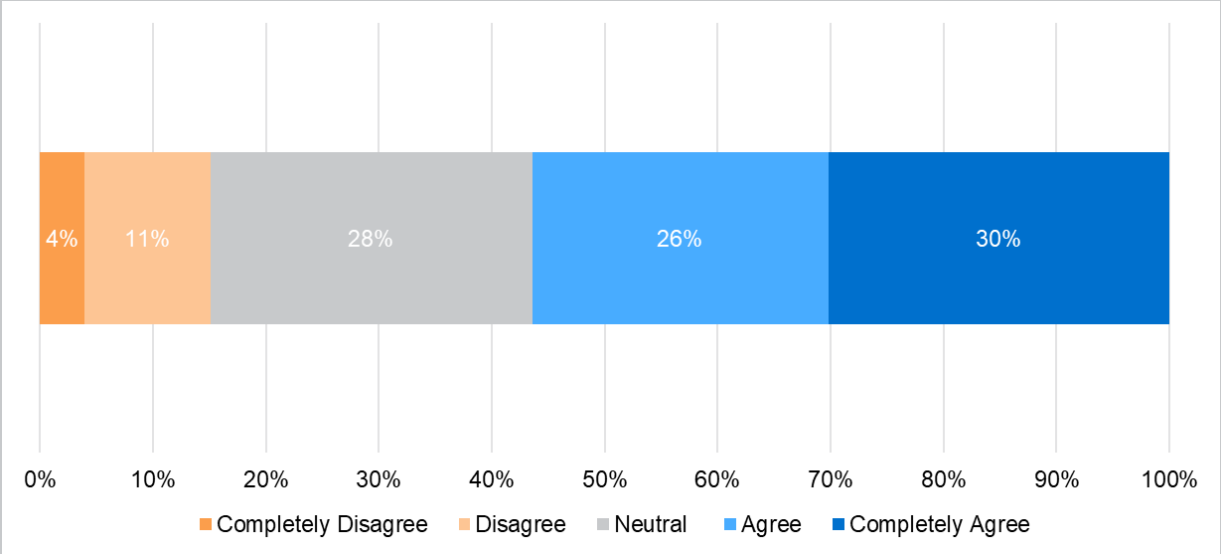
Figure 4-12: "I would recommend AC Saver Thermostat to friends or family" (n=176)



The AC Saver Day Ahead program is designed to automatically control the set point on customers' smart thermostats, so participants do not have to take any direct action on event days. Nevertheless, respondents were asked if they changed their behavior to see if the program had any unintended consequences to customers' daily activities. Additionally, the question was used to gauge if program participation encouraged people to take other energy saving actions, even though they would not receive a financial award.

For most respondents, participation in the program did not have a significant impact on their routines during event days. Approximately 56% of respondents said they "Completely Agree" or "Agree" that their routines were not affected. Figure 4-13 displays the full distribution of scores.

Figure 4-13: "My typical routines are not affected on AC Thermostat days" (n=179)



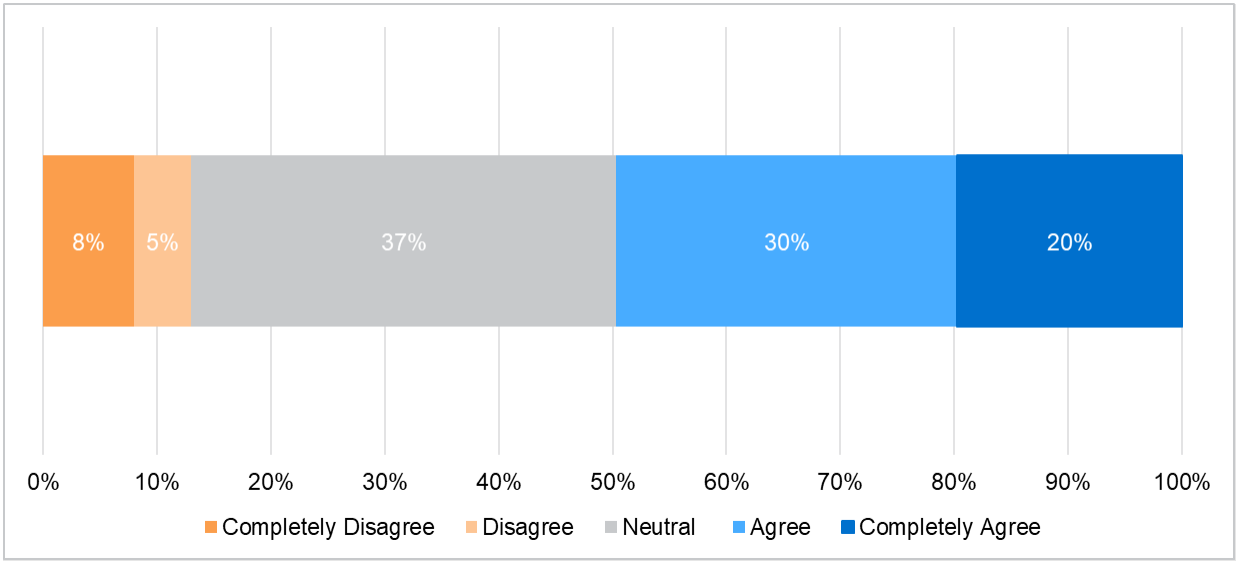
If respondents put "Completely Disagree" or "Disagree" they were asked an additional question about how their routines were affected on event days. The responses were binned for common themes and are shown in Table 4-2. The majority of comments centered around respondents feeling uncomfortable in their homes because of the increased temperatures on event days. A smaller percentage of respondents indicated they changed their behavior by adjusting appliance use or leaving the house. One respondent noted, "I focused more on moving laundry and dishes to other hours and let house temperatures be higher than normal." While the number of participants that revealed they changed their behavior is small, enrollment in the program does seem to make some people more aware of their energy usage in general.

Table 4-2: "How were your typical routines affected on AC Thermostat days?"

Response	# of Responses	% of Responses
House became uncomfortable	13	52%
Changed appliance use	6	24%
Left house	3	12%
Pre-cooled house	2	8%
Changed cooking schedule	1	4%
Total comments	**22**	

Finally, respondents were asked if their home remained comfortable on event days. This question had the lowest percentage of respondents who "Completely Agree" (20%) with the statement provided. From the distribution of scores shown in Figure 4-14, it is clear there is a large portion of participants that feel their home becomes uncomfortably warm on event days.

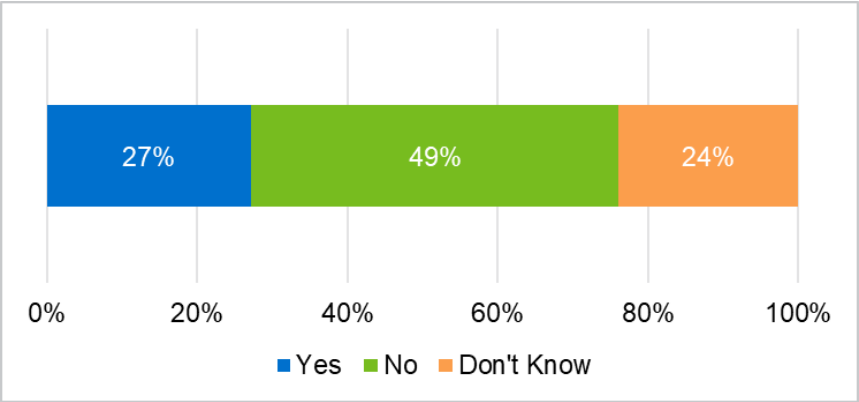
Figure 4-14: "The temperature in my home remains comfortable on AC Thermostat days" (n=177)



4.3.4 Event Opt-Outs

Customers enrolled in AC Saver Day Ahead are allowed to opt-out of individual event days. In general, participants can opt-out of an event by simply turning back their thermostat to its original set point. As shown in Figure 4-15, about 27% of participants indicated they have opted of an event in the past year.

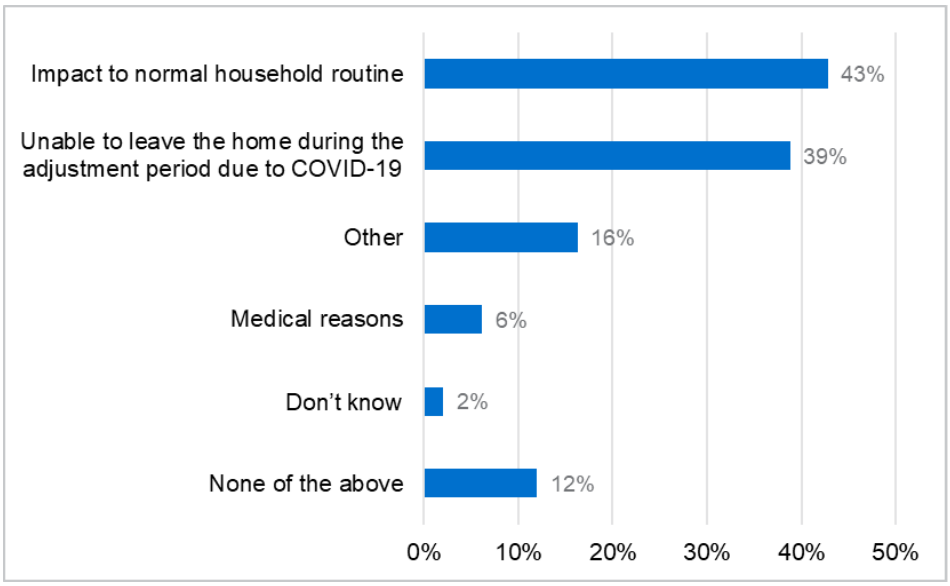
Figure 4-15: "Have you opted-out of an event in the past 12 months?" (n=180)



Some participants in the AC Saver Day Ahead program received a free smart thermostat when they enrolled. About 27% of survey respondents got a free thermostat, with 89% of those respondents indicating Ecobee was their manufacturer. Customers with a free thermostat must take a couple additional steps to opt out of events. Namely, they have walk through multiple screens on their thermostat and press "OK" to change the set point back to its starting value. Even though it is slightly harder for customers with a free thermostat to opt-out, there was not a statistically significant difference between opt-out rates for customers with and without free thermostats. Generally, customers with and without free thermostats did not respond to questions differently throughout the survey.

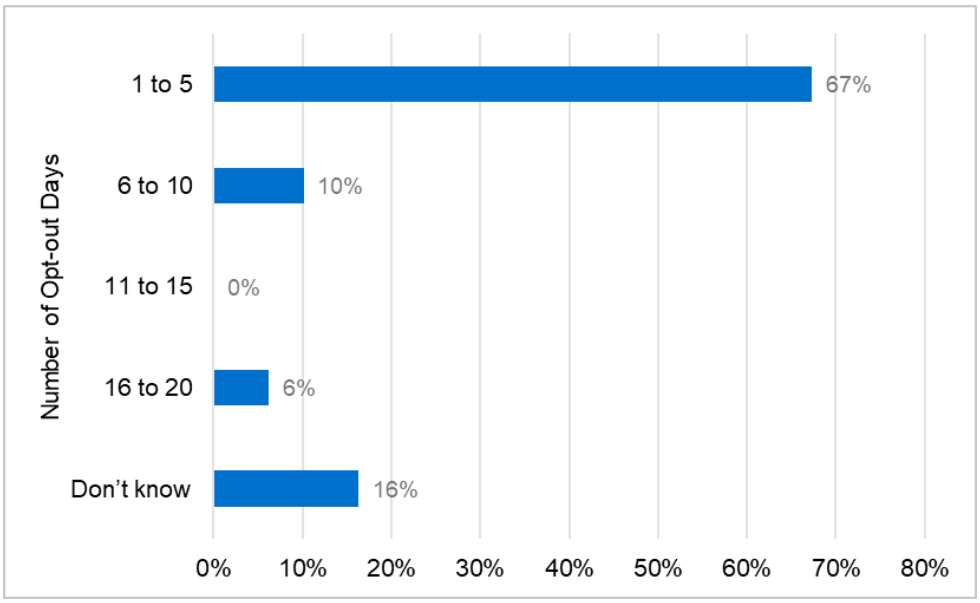
Customers who opted-out of at least one event were asked a series of follow up questions. Eighty-four percent of respondents felt their home was uncomfortable temperature when they opted out. Respondents were then asked if any of the reasons displayed in Figure 4-16 also contributed to their decision to opt-out. The most cited reason was "Impact to normal household routine" (43%) followed by "Unable to leave home because of COVID" (39%). Those respondents that selected "Other" were given the chance to write in a reason. The responses were too few to bin, but the most common response was about occupant and animal safety.

Figure 4-16: Factors Contributing to Event Opt-Outs (n=49)



Lastly, customers were asked how many events they have opted-out of during the past year. About 67% of respondents indicated they opted-out of one to five events, while 16% said they didn't know. The large portion of respondents that opted-out of five events or less is a good indication that most program participants are not frequently overriding the event signal.

Figure 4-17: Number of Opt-Out Days (n=49)

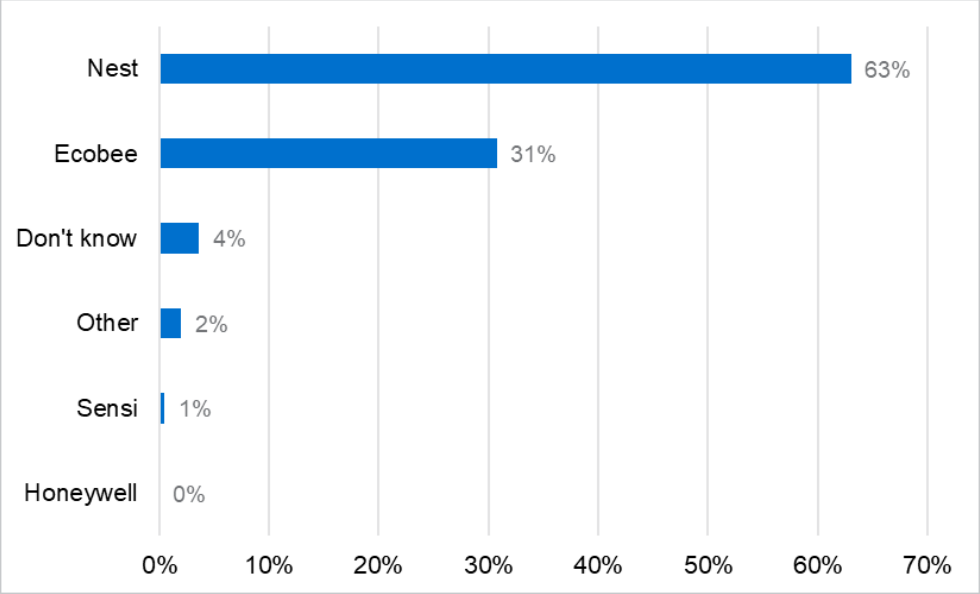


4.3.5 Current Thermostat Usage

Participants in AC Saver Day Ahead must have an approved smart thermostat to join the program. Currently, customers must have a thermostat manufactured by Nest, Ecobee or Honeywell. Figure 4-18 shows the distribution of thermostats for the survey respondents. The vast majority of respondents have a Nest or Ecobee thermostat, with 63% and 31%,

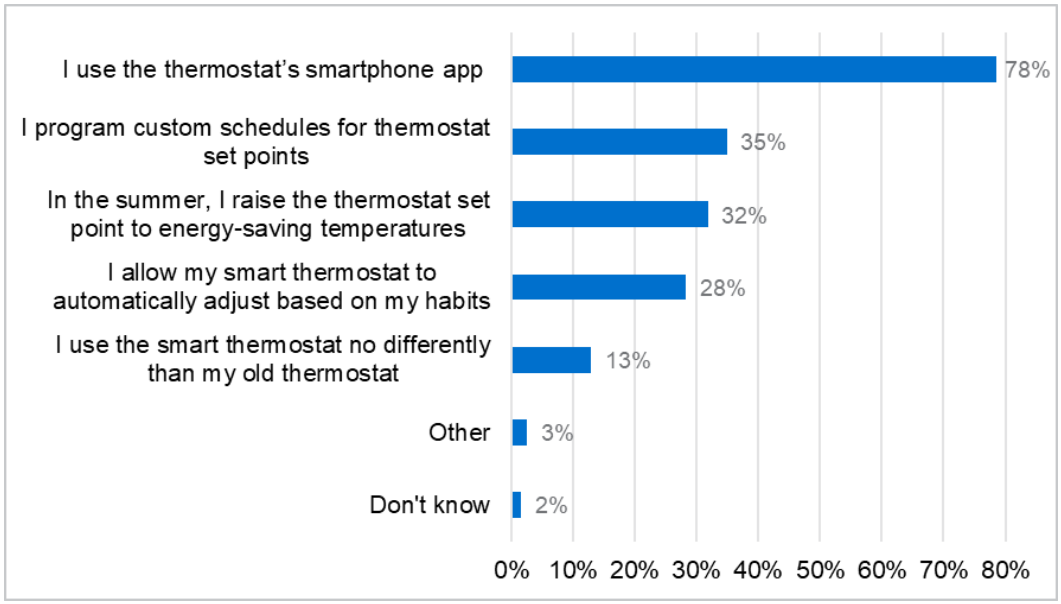
respectively. Honeywell has only a small number of thermostats included in the program. Accordingly, no one selected Honeywell as their thermostat manufacturer, but one respondent indicated they had one in the “Other” category.

Figure 4-18: Smart Thermostat Manufacturers (n=195)



To gain a greater understanding of how respondents interact with their smart thermostat, they were asked to select the features they use. A large percentage of respondents, 78%, use the app of their smart thermostat manufacturer. A smaller percentage of customers use more advanced features like programming custom set points or allowing the thermostat to automatically adjust based on their behavior. The full distribution of feature usage is shown in Figure 4-19.

Figure 4-19: Usage of Smart Thermostat Features (n=195)

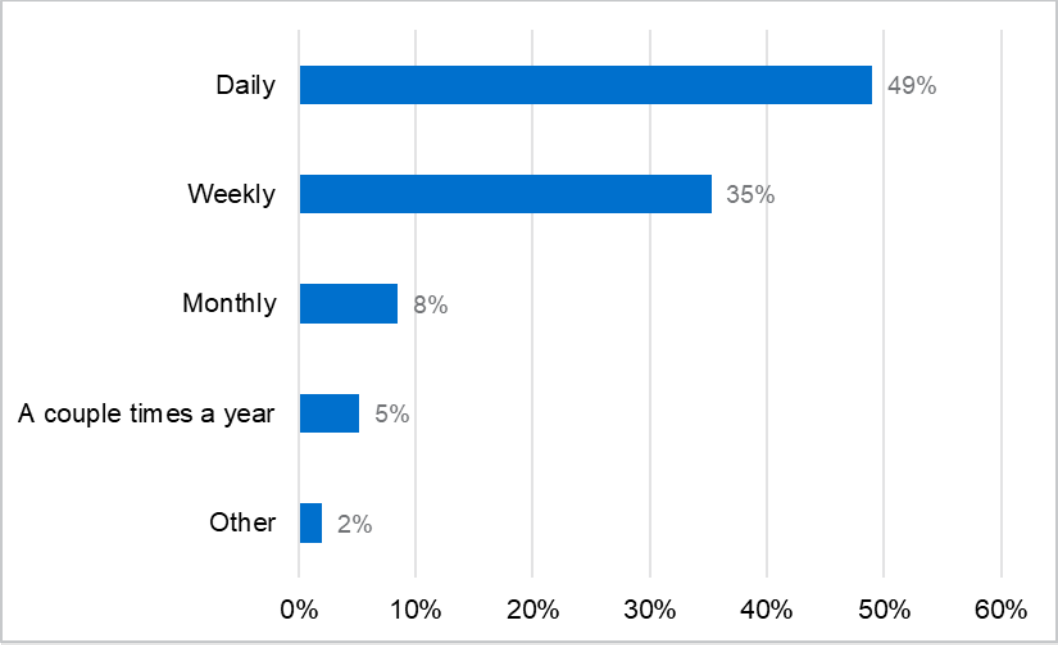


If a respondent said they used the app of their smart thermostat manufacturer they were asked a follow up question about how often they use it. Figure 4-20 shows that respondents who engage with the app do so frequently. In total, 84% of respondents said they used the app either daily or weekly.

This provides evidence for a couple big picture items for AC Saver Day Ahead. First, a large portion of respondents are customers who are engaged with their electric usage. In general, these customers are likely more aware of their usage than the average customer without a smart thermostat. This attribute might be a key demographic difference between the customers enrolled in AC Saver Day Ahead and those in AC Saver Day Of. When identifying new customers to join Day Ahead, it will be important to target people who want to be actively involved in monitoring their usage.

Second, the customers enrolled in AC Saver Day Ahead could be subject to different experiences with their smart thermostat based on the manufacturer. The apps of each manufacturer might engage customers differently or offer varying interactive features. While the mechanics of program implementation might be similar from SDG&E's perspective, the customer-facing experience will vary based on smart thermostat manufacturer. This is an important consideration to remember while communicating to customers.

Figure 4-20: Usage Frequency of Smart Thermostat App (n=153)

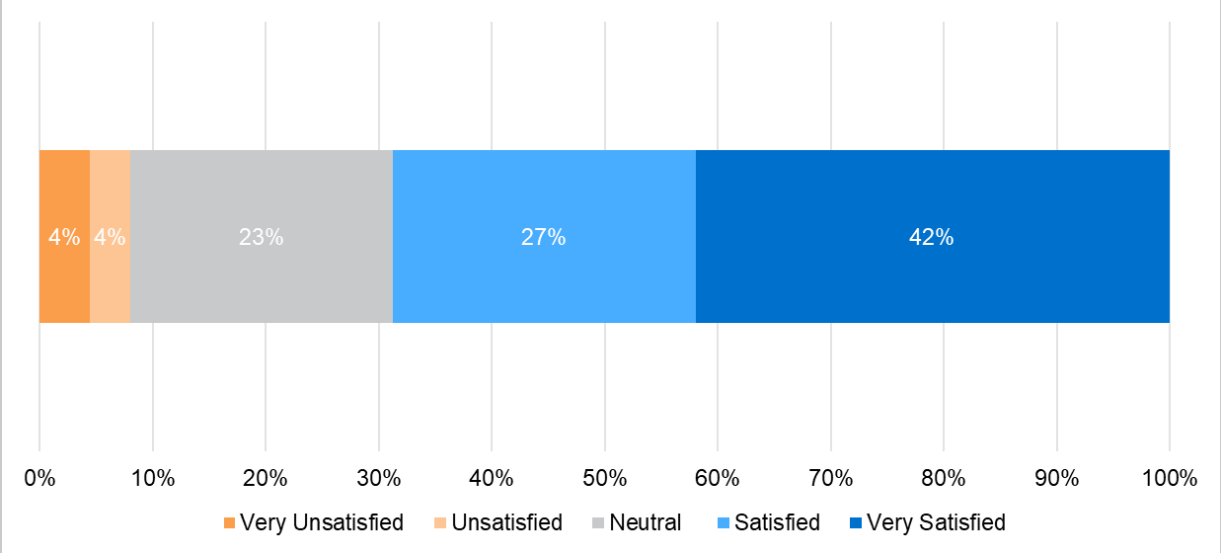


4.3.6 Incentive Level

Lastly, respondents were asked about their satisfaction with the incentives offered by AC Saver Day Ahead. Enrolled customers receive two different incentives: a one-time payment when they first join, which is meant to help offset the cost of the smart thermostat, and a recurring payment for each control season they remain on the program. Currently, customers receive a one-time payment of $50 and a recurring payment of $20.

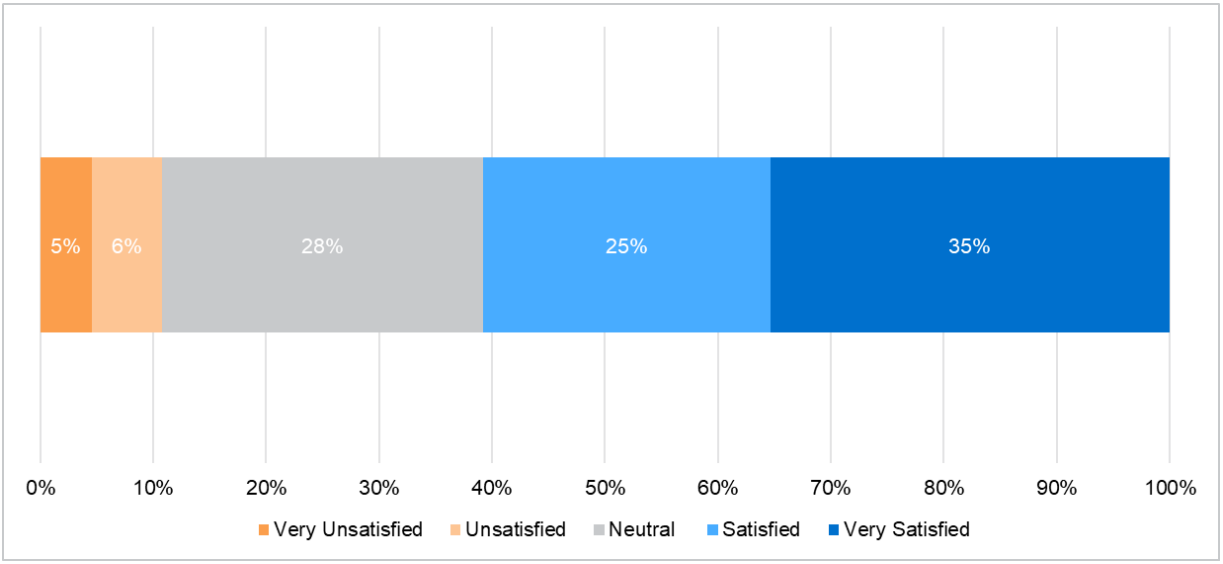
Figure 4-21 shows the satisfaction scores for the initial one-time enrollment payment. Over two-thirds of respondents said they were “Very Satisfied” or “Satisfied” with the initial payment. Customers who received a free smart thermostat were not included in this question.

Figure 4-21: Satisfaction with Initial Enrollment Payment (n=112)



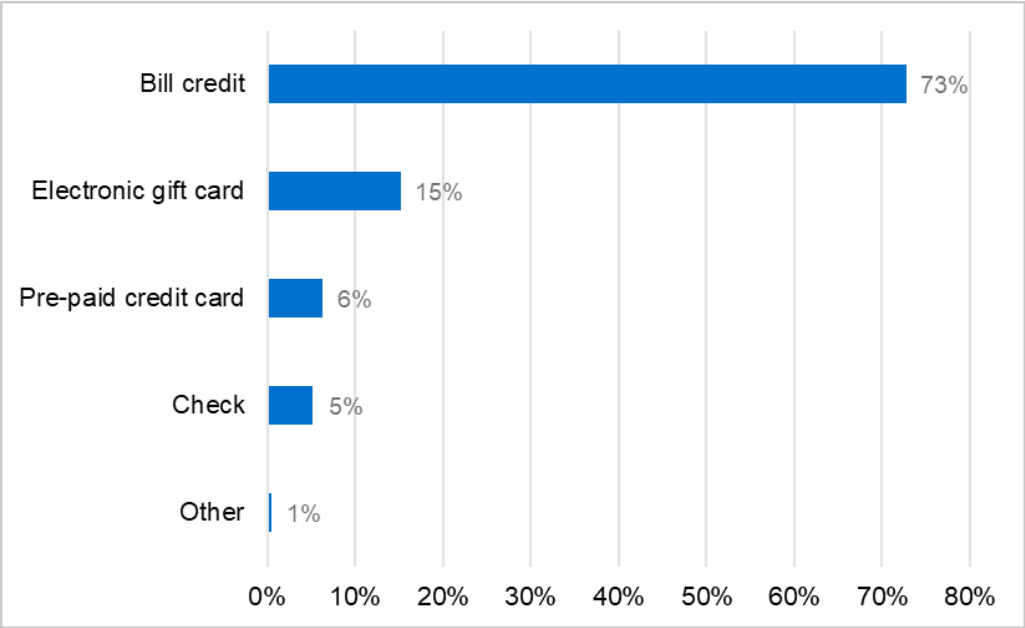
As shown in Figure 4-22, the distribution of respondents who are satisfied with the yearly participation payment is slightly lower than the one-time payment. About 60% of customers indicated they were either “Very Satisfied” or “Satisfied” with the recurring incentive. The lower scores could simply stem from the yearly payment being lower than the one-time payment.

Figure 4-22: Satisfaction with the Yearly Participation Payment (n=178)



Finally, respondents were asked how they would like to receive their incentives for participating in the program. Most people (73%) indicated they would like to receive a bill credit. Figure 4-23 shows all of the options for payment methods presented in the survey.

Figure 4-23: Preferred Payment Method for Incentives (n=191)



4.4 AC Saver Day Ahead Non-Participant Survey Overview

The AC Saver Day Ahead non-participant survey had the following survey objectives:

- **Smart Thermostat Rebate Customers:** Are rebate customers aware the program exists? If so, how did they learn about the program and why didn't they sign up?
- **Current Thermostat Setup for Non-Rebate Customers:** Do customers have a smart thermostat? If so, which brand of smart thermostat do they have?
- **Interest in Joining AC Saver Day Ahead:** Are customers interested in joining the Day Ahead program? If not, why? At what incentive level would they join the program? What additional thoughts do customers have about the program?

The AC Saver Day Ahead non-participant survey sample included two different types of customers who are currently not enrolled AC Saver Day Ahead. The first was customers who received a rebate for a smart thermostat from their enrollment in the Plug Load and Appliance program and the second was customers who were in the matched control group for the PY 2020 AC Saver Day Of evaluation. The rebated customers were selected because their contact information was considered more accurate, and they were assumed to have both an existing smart thermostat and central AC unit. The control group customers were considered good candidates to receive the survey because their usage was already matched to customers who are known to have central AC. Throughout this report the respondents are referred to as rebate and non-rebate customers, respectively.

In total, a random sample of 2,800 participants was drawn to receive the survey. The sample was split evenly between rebate and non-rebate customers. There were 1,400 rebate customers randomly sampled from a population of 4,600 and the 1,400 non-rebate customers were pulled from a population of 10,000. Overall, 318 responses were received, which surpassed the minimum quota of 280 responses. Participants with a "do not contact" flag were removed from the sample. The survey was incentivized and administered via the web.

A much larger portion of rebate customers responded to the survey than non-rebate customers, even though there was an equal number of each in the sample. The exact reason for the unequal response rate is unknown, but there are a couple plausible explanations. First, non-rebate customers were asked at the start of the survey if they had an AC unit, since this is a requirement to participant in AC Saver Day Ahead. There were 44 customers who indicated they did not have an AC. These customers exited the survey without answering any more questions and were not included in the final results. Second, it is possible that rebate customers, who already have a smart thermostat, are more technologically savvy. These customers might monitor their email more closely and be more likely to answer a survey.

Table 4-3 shows an overview for the AC Saver Day Ahead non-participant survey.

Table 4-3: AC Saver Day Ahead Non-Participant Survey Summary

Customer Type	Survey Start	Survey End	Days in Field	Incentive	Responses	Response Rate
Rebate	8/17/2021	8/30/2021	14	$10	234	17%
Non-Rebate					84	6%

4.5 AC Saver Day Ahead Non-Participant Survey Findings

The following sections summarize the survey findings for each of the research questions. The number of respondents who answered each question is displayed as "n" in each table and figure title.

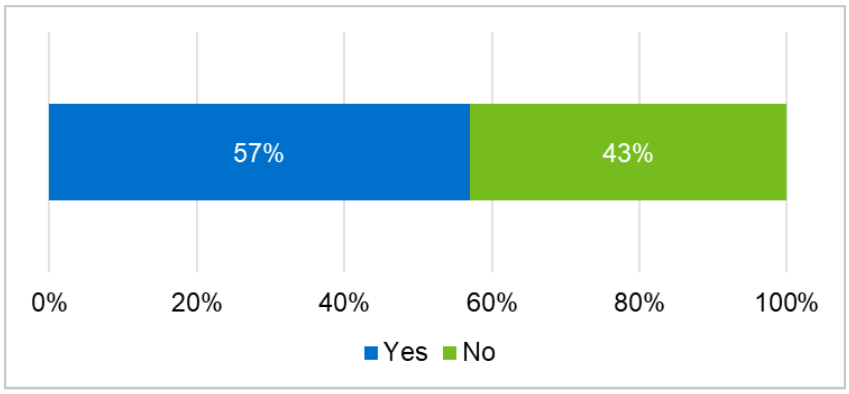
To participate in AC Saver Day Ahead customers must have an AC unit controlled by a smart thermostat. Before the launch of the survey, it was assumed that customers who received a rebate for a smart thermostat would also have an AC unit. However, there were 15 rebate customers who indicated on the survey they did not have an AC. Since this is a requirement to join the program, these customers' answers were removed from the figures and tables below. One possible explanation for this is they moved since receiving the rebate and their current home does not have a smart thermostat, as reported by several respondents.

4.5.1 Smart Thermostat Rebate Customers

Customers who received a rebate from SDG&E for purchasing their smart thermostat may or may not be aware of AC Saver Day Ahead. As displayed in Figure 4-24, the percentage of

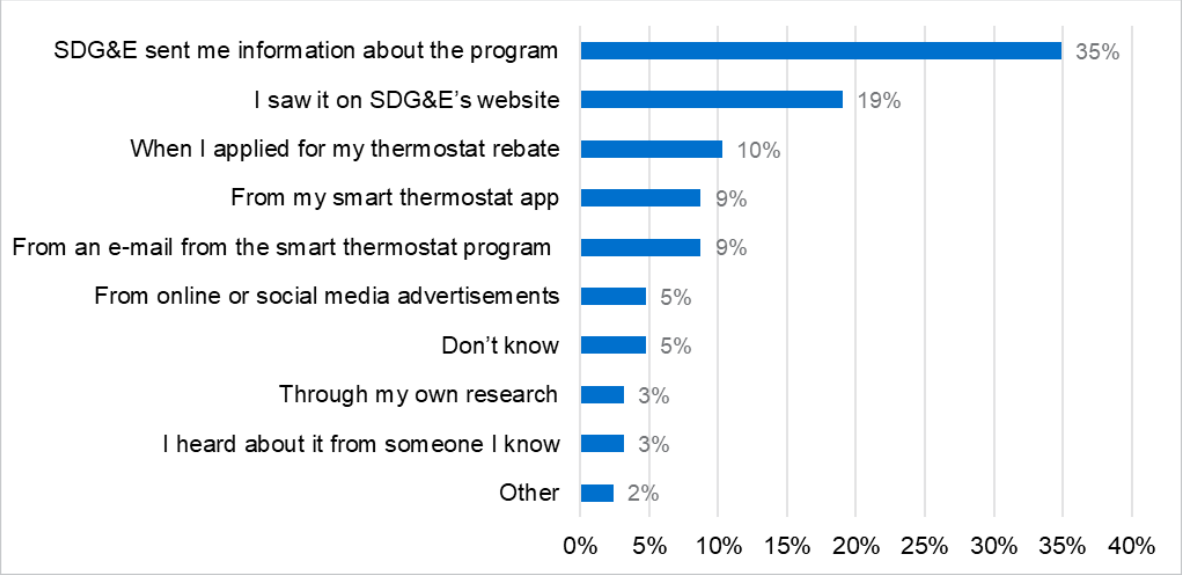
rebate customers who were aware of the program is 57%. It is likely a higher percentage of respondents received marketing materials regarding the program in the past but have since forgotten about it.

Figure 4-24: Rebate Customers Who Are Aware of AC Saver Day Ahead (n=219)



The respondents that were aware the program existed were asked a follow-up question about where they learned about it. Most respondents learned about the program from SDG&E, either by information sent directly to the respondent, via SDG&E's website, or when applying for their rebate. In total, 64% of respondents learned about the program from these three methods. Overall, a smaller portion of respondents (19%) learned about it from their smart thermostat app or an email from their manufacturer. Figure 4-25 presents the full distribution of responses.

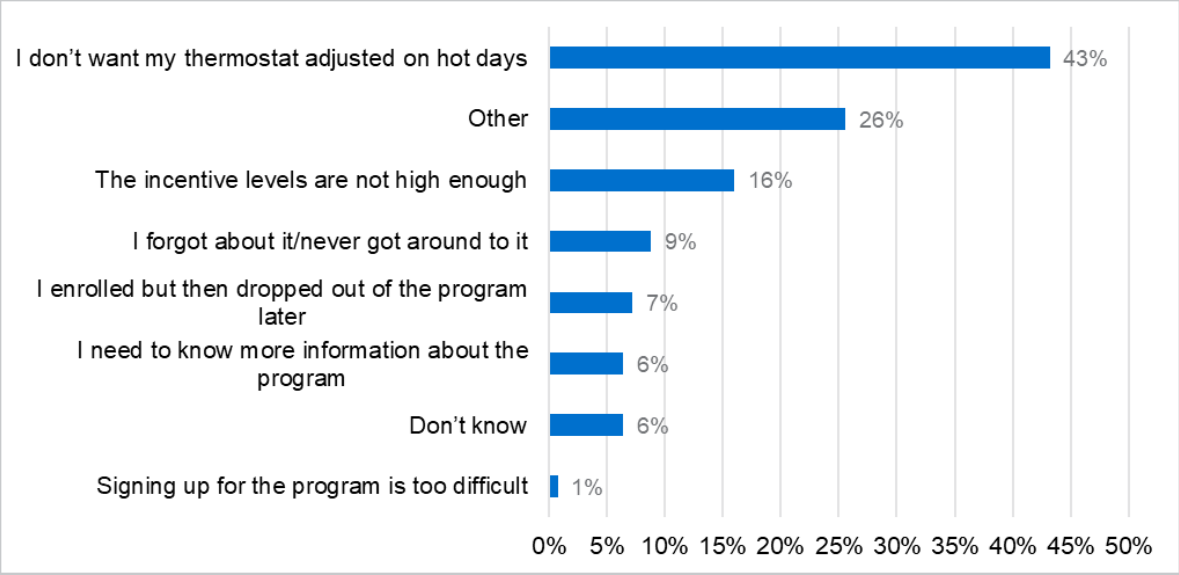
Figure 4-25: "How did you learn about the AC Saver Day Ahead program?" (n=126)



Respondents who were aware of the program were asked an additional question about why they haven't joined. As shown in Figure 4-26, 43% of respondents said they do not want their thermostat adjusted on hot days. This response was followed by "Other" (26%) or incentive levels being too low (16%). It is important to remember these responses are from customers

who could have joined the program but have not yet. They likely learned about the program from SDG&E or their smart thermostat manufacturer but were not convinced the program was worthwhile. As such, future marketing materials could include an explanation of how the temperature setback works during events and the non-monetary benefits of participation. The materials could emphasize the numerous benefits of participation and how the program does not greatly affect participants' daily lives.

Figure 4-26: "Why haven't you chosen to participate in the AC Saver Day Ahead program?" (n=125)



Respondents who selected "Other" in Figure 4-26 could write in their reasoning for not joining the program. The responses were binned for common themes, which are displayed in Table 4-4. There were eight respondents that indicated they had solar panels. Some of these respondents added they did not believe their home was eligible for the program because they have solar. Other customers with solar panels did not want to join because they are producing enough electricity to cover their AC usage. For example, one respondent said, "I have solar and I am massively over-generating even on hot days."

Another common response was from customers who thought they were already enrolled in the program. These customers could be confusing AC Saver Day Ahead with another program or could have been enrolled in the past. Lastly, the third most common response was from customers who said they do not use their AC often. Although these customers could still enroll in the program, they may not believe is worth the hassle of signing up or they might think the AC has to be running to receive the incentive.

Table 4-4: Other Reasons for Not Joining AC Saver Day Ahead

Response	# of Responses	% of Responses
Have solar panels	8	26%
Thought they were enrolled	8	26%
Don’t use AC often	7	23%
Not eligible	2	6%
Medical reasons	2	6%
Doesn't want SDG&E to manage usage	2	6%
Used to be enrolled	2	6%
Total comments	**29**	

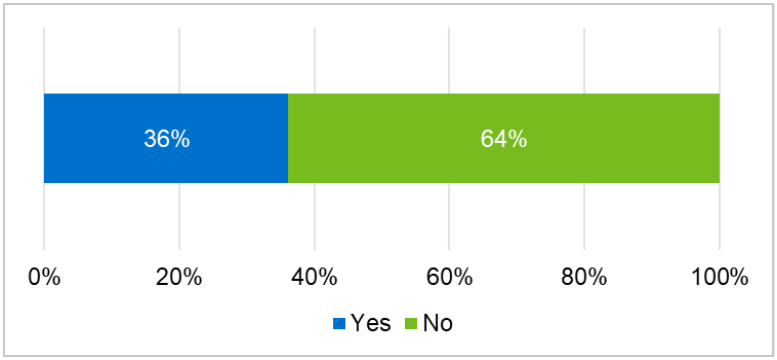
Finally, respondents who were enrolled in AC Saver Day Ahead but later dropped out were asked why they decided to leave the program. The responses were too few to bin, but in general respondents said it was for medical reasons or because their home became uncomfortably warm.

4.5.2 Current Thermostat Setup for Non-Rebate Customers

The non-rebate customers were asked a series of questions about their thermostats. Unlike the rebate customers, the type and manufacturer of the non-rebate customers’ thermostats was unknown. As a reminder, the non-rebate customers have similar usage to AC Saver Day Of participants, who are customers that have an AC unit. The responses in this report section for the non-rebate customers are representative of this type of customer and not the general population of SDG&E customers.

The first question asked respondents if they have a smart thermostat. As displayed in Figure 4-27, about one-third of respondents indicated they had one. The percentage of customers who have a smart thermostat is higher for this group of non-participants than AC Saver Day Of participants, which only had 21% of respondents indicating they had a smart thermostat.

Figure 4-27: “Do you have a Wi-Fi enabled thermostat?” (n=83)



Next, respondents were asked about the manufacturer of their smart thermostat. About 53% of respondents have a Nest thermostat. This was followed by Honeywell and “Don’t know”, which each represent 20% of respondents. The results are shown in Figure 4-28.

Figure 4-28: Smart Thermostat Manufacturers for Non-Rebate Customers (n=30)

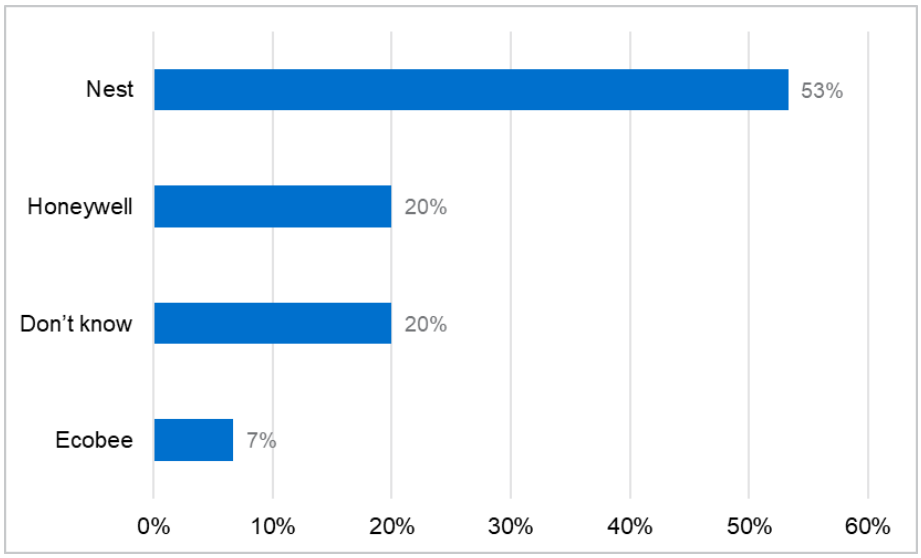
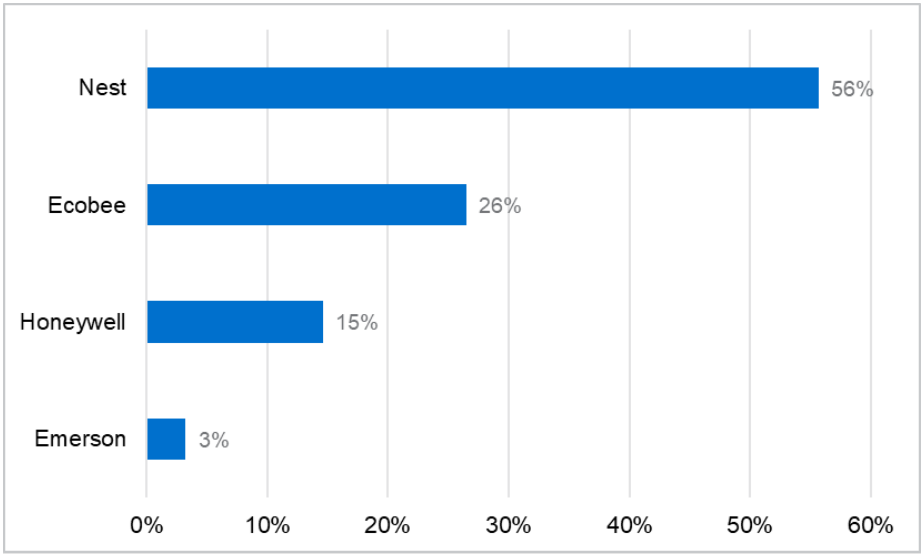


Figure 4-29 presents the percentage of each smart thermostat manufacturer for rebate customers. This data was not collected from the survey, but it was provided by SDG&E, based on the rebate applications. It is included here for completeness. Once again, the most popular thermostat was Nest, with 56% of respondents. This was followed by Ecobee (26%) and Honeywell (15%).

Figure 4-29: Smart Thermostat Manufacturers for Rebate Customers (n=219)

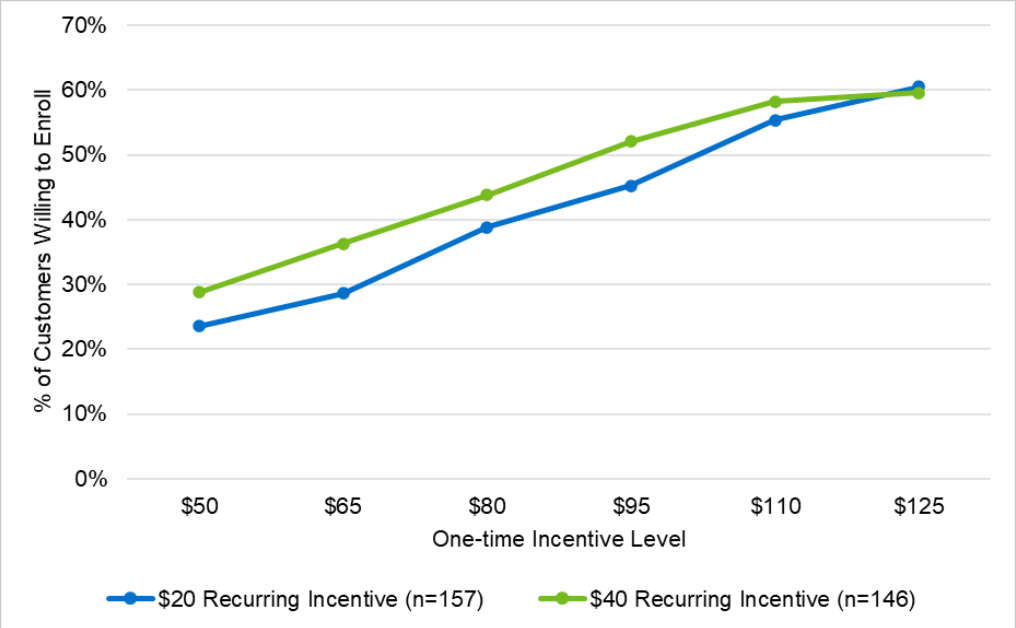


4.5.3 Interest in Joining AC Saver Day Ahead

As described in the AC Saver Day Of survey in Section 3.3.5, the Gabor-Granger pricing methodology was used to gauge respondents' interest in joining AC Saver Day Ahead. Approximately half the respondents were presented with a recurring incentive of $20, and the other half was shown a $40 recurring incentive. Respondents were shown varying one-time incentives of $50, $65, $80, $95, $100, or $125. The one-time incentive level at which respondents would join the program is show in Figure 4-30. The percentage of respondents willing to join the program increases as the one-time incentive level increases. There is generally a higher percentage of customers willing to join the program at the $40 recurring incentive, but the differences with the $20 incentive level are not statistically significant.

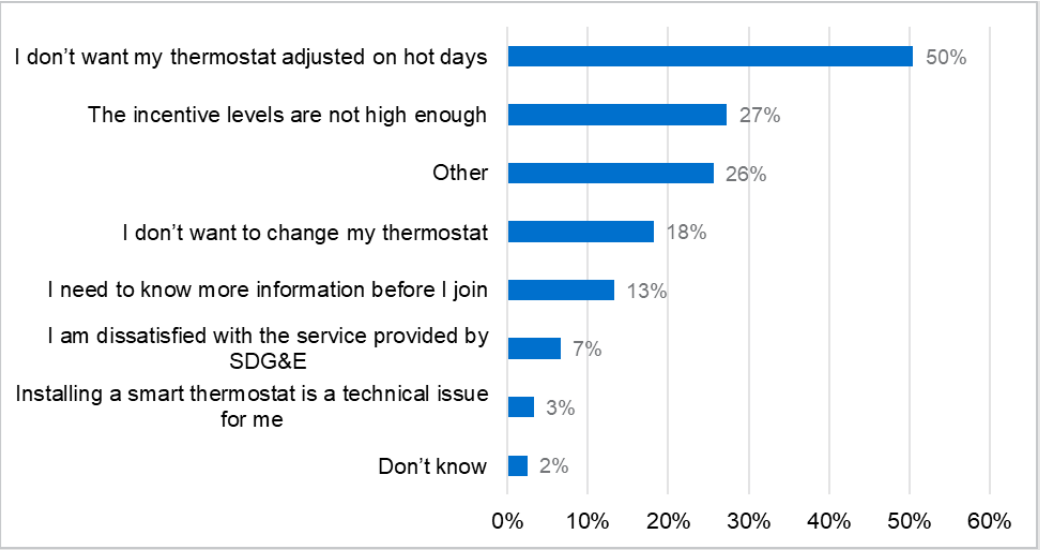
Approximately 29% of respondents said they would join the program at the lowest one-time incentive level of $50 and a $40 recurring incentive. The percentage of respondents who would join for a one-time incentive of $50 and a $20 recurring incentive level is slightly lower at 24%. Interestingly, the percentage of respondents who would join the program at the highest one-time incentive of $125 is almost the same for the $20 and $40 recurring incentive level, with 61% and 60%, respectively.

Figure 4-30: Customers Willing to Enroll in AC Saver Day Ahead



Respondents who said they would not join the program at the highest one-time level of $125 were asked a series of follow up questions about their reasoning. Overall, 40% of respondents would not join the program for any of the one-time incentive levels. Figure 4-31 displays the reasons respondents selected for not joining the program. The most common sentiment among respondents was they did not want their thermostats adjusted on hot days. This was followed by respondents indicating that the incentives were not high enough (27%) and "Other" (26%).

Figure 4-31: Reasons for Not Wanting to Join AC Saver Day Ahead (n=121)



The "Other" responses were binned into common themes and are displayed in Table 4-5. The two most common "Other" responses included customers who are currently renting and those that believed the incentive levels should be more. Some of the rental customers indicated they would join the program, but they do not have authority to change the thermostat in their home. Additionally, several respondents felt joining the program was unnecessary because they already adjust their thermostat on hot days. For example, one respondent said, "We already control our thermostat when not at home." Another said, "I already have a smart thermostat that has an Eco setting at what I believe is a relatively high temperature before the AC turns on."

Table 4-5: "Why wouldn't you be interested in joining the smart thermostat program?"

Response	# of Responses	% of Responses
Renting	6	21%
Incentive level should be more	6	21%
Already adjusting thermostat on hot days	5	18%
Don't want SDG&E to control thermostat	4	14%
Medical issues	2	7%
Have solar panels	2	7%
Don't use AC often	1	4%
Moved	1	4%
Don't want home to get warm	1	4%
Total comments	**27**	

Respondents who selected "I need to know more information before I join" in Figure were given an open-ended response to write in more detail. The results are summarized in Table 4-6. Some respondents were interested to know how many degrees the temperature setback would be, while others wanted to know program specific details. For example, one respondent wrote,

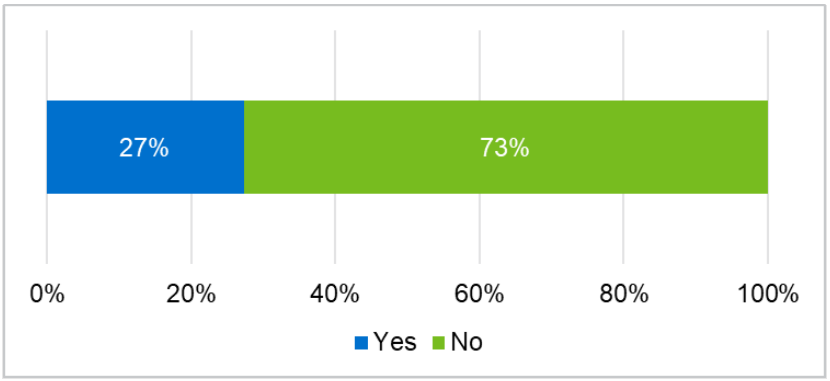
"How do I setup the thermostat, how do I leave program, and how many days per year has the program been enacted?"

Table 4-6: "What additional information would you like to know about AC Saver Day Ahead?"

Response	# of Responses	% of Responses
What is the temperature setting?	2	22%
Specific program details	2	22%
Want higher incentive	2	22%
How does SDG&E control the thermostat	1	11%
Can I opt-out?	1	11%
Do I have to pay for installation?	1	11%
Total comments	**9**	

Lastly, respondents who indicated they would not join the program were asked an additional question about if they would they join if events were called under certain circumstances, namely, if there was a high risk of rolling blackouts. About a quarter of these respondents said they would reconsider joining the program under this scenario. The results are shown in Figure 4-32.

Figure 4-32: "If SDG&E only adjusted the thermostat settings when there was a high risk of rolling black outs, would you then be interested in joining the program?" (n=121)

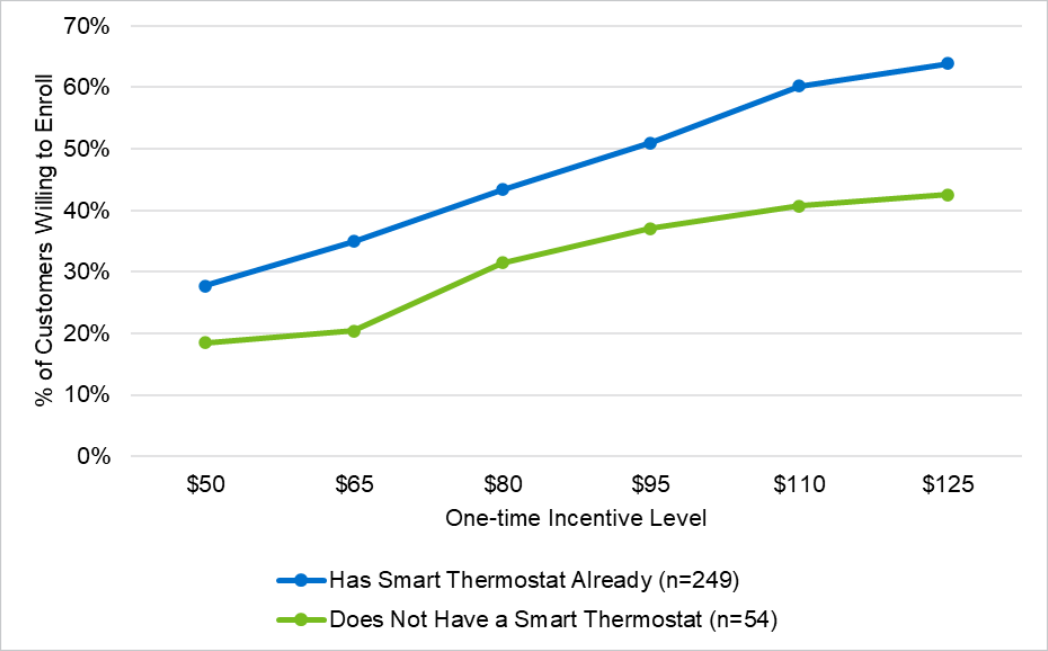


The results of the Gabor-Granger methodology were also analyzed for customers with and without smart thermostats regardless of recurring incentive level. As displayed in Figure 4-33, customers who already have a smart thermostat were more likely to say they would be willing to join the program at every one-time incentive level. At one-time incentive levels of $65, $95, $110, and $125, the difference in enrollment between the two groups is statistically significant at the 90% confidence level.

In total, 64% of customers with a smart thermostat said they would join the program at the $125 incentive level. Only 43% of customers without a smart thermostat said they would participate at the same level. Customers who already have an existing smart thermostat are ideal candidates

for AC Saver Day Ahead because they face lower barriers to entering the program. First, they do not need to purchase a new smart thermostat to participate in the program. Second, they likely feel comfortable with operating and using a smart thermostat. This is an advantage over the average customer, who might view a smart thermostat as a new, unnecessary technological device with a steep learning curve.

Figure 4-33: Smart Thermostat Customers Willing to Enroll in AC Saver Day Ahead



At the end of the survey, respondents were given the opportunity to write in any additional thoughts they had about AC Saver Day Ahead. While the most common response concerned respondents giving up control of their thermostat, there was a large percentage of respondents that liked the idea of the program. Furthermore, respondents had specific questions about the program regarding temperature setbacks and opting out. One respondent noted in reference to event opt-outs, “As long as it allows me to change the setting even after they’ve adjusted it, I would be fine with it.” Finally, there were a couple respondents who wanted to know if they could still enroll in the program if they were already participating in OhmConnect. The full distribution of responses is displayed in Table 4-7.

The description of AC Saver Day Ahead presented to respondents in the survey was specifically written for clarity and brevity. With this point in mind, some of the comments left in the survey indicate that respondents generally did not understand the program. For example, respondents who do not use their AC often or already adjust their thermostat on hot days believed the program was not suitable for them. While these customers might not be the ideal participant to reduce usage, they are still eligible to enroll in the program. When recruiting customers to join the program, this point can be emphasized in customer communications.

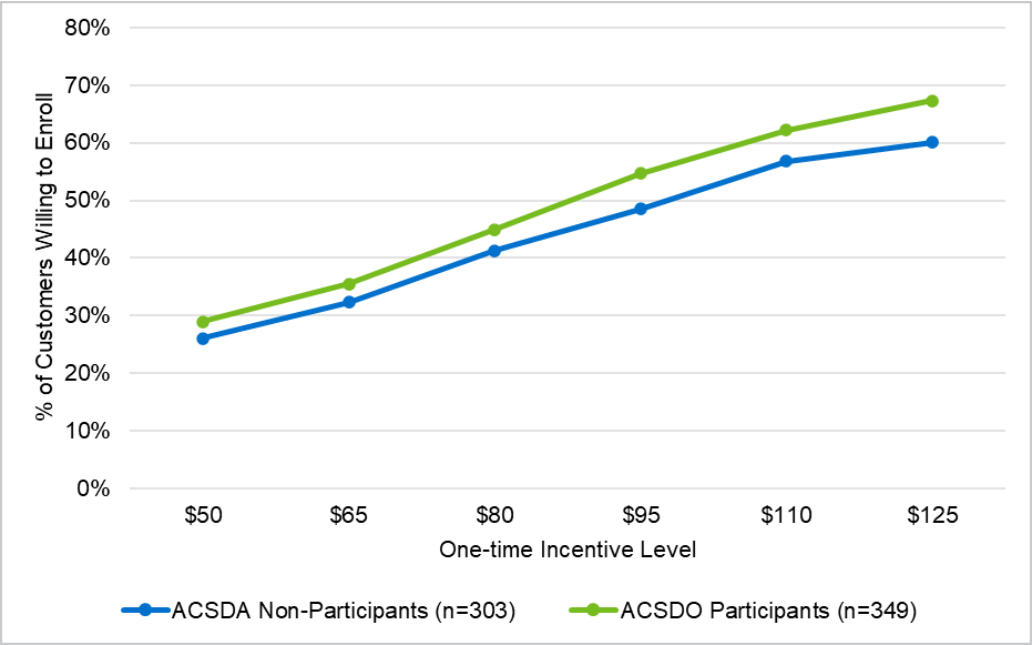
Table 4-7: "What additional thoughts or concerns do you have about participating in AC Saver Day Ahead?"

Response	# of Responses	% of Responses
Don't want to give up control of thermostat	16	13%
Like the idea of the program	15	12%
Have solar panels	10	8%
Don't want home to get warm	10	8%
How do opt-outs work?	9	7%
Would like to know more about the program	9	7%
Incentive level should be more	8	6%
Privacy or security concerns	6	5%
Cost of thermostat or installation	6	5%
Don't use AC often	6	5%
SDG&E's control of thermostat outside of event	5	4%
Medical issues	5	4%
How do notifications work?	4	3%
Does it work with OhmConnect?	4	3%
Temperature setback level	3	2%
Can I leave the program, if needed?	3	2%
Already keep thermostat at a high level	2	2%
Renting home	2	2%
I am already enrolled	1	1%
Total comments	**113**	

4.5.4 Comparison With AC Saver Day Of

The results from the Gabor-Granger methodology between non-participants in AC Saver Day Ahead and participants in AC Saver Day Of are displayed in Figure 4-34. Participants in the Day Of program are more likely to join Day Ahead than non-participants at every one-time incentive level. However, the only difference in enrollment between the two groups that is statistically significant with 90% confidence is at the $125 incentive level. Overall, 67% of AC Saver Day Of respondents and 60% of non-participant respondents would join Day Ahead at the $125 incentive. It is possible that Day Of participants, who are already familiar with how a demand response program works, are more willing to join Day Ahead because they have fewer unanswered questions. But since the only statistically significant difference in enrollment is at the $125 level, it would be beneficial for SDG&E to concentrate recruiting efforts to both groups of customers.

Figure 4-34: Comparison of Customers Willing to Enroll in AC Saver Day Ahead



4.6 AC Saver Day Ahead Conclusions and Recommendations

Conclusion 1

Participants were primarily motivated to enroll in AC Saver Day Ahead to earn bill credits, but a large portion of participants also cited non-monetary reasons. Approximately 64% of respondents indicated bill credits motivated them to participate, while 54% of respondents said they were interested in joining to help the environment or help grid reliability.

- ***Recommendation 1***
  Make the non-monetary benefits of program participation, like helping the environment or ensuring grid reliability, a point of emphasis when recruiting new customers. This will encourage customers to join the program, even if they believe the incentives are too low.

Conclusion 2

Customers will have slightly different experiences while enrolled in AC Saver Day Ahead based on their smart thermostat manufacturer. For example, Ecobee customers receive event notifications, while Nest customers do not receive one. Additionally, almost 80% of respondents said they frequently use the app of their smart thermostat manufacturer. Since each manufacturer has a different app with various features, the customer experience will vary based on manufacturer.

- ***Recommendation 2***
  As much as possible, ensure that customers are having similar experiences while enrolled in AC saver Day Ahead. This will make it easier for SDG&E to make program level changes instead of making program modifications based on manufacturer. It will also make it simpler to differentiate between customer dissatisfaction with AC Saver Day Ahead or the smart thermostat manufacturer.

Conclusion 3

The majority of customers do not opt-out on event days, and those that do opt-out only do so for a handful of events. About a quarter (27%) of respondents indicated they opted-out of an event in the past year. Of those customers, 67% said they only opted-out of one to five events.

- ***Recommendation 3***
  Continue to allow customers to opt-out of events The number one reason for dissatisfaction for current participants was their homes became uncomfortably warm on event days. Giving customers the freedom to opt-out of events provides reassurance that they will not be uncomfortable. Since the majority of participants are not frequently opting out of events, SDG&E does not have to be overly worried about customers abusing their ability to opt-out.

Conclusion 4

The most common reason cited by non-participants for not wanting to join the Day Ahead program was giving up control of their thermostat. Approximately, 50% of respondents who indicated they would not join the program at any incentive level mentioned they do not want to give up control of their thermostat.

- ***Recommendation 4***
  While some of these customers will likely never join the Day Ahead program, emphasizing certain aspects of the program during the recruitment process could help address the most common non-participant concerns. Program details like the opt-out process, the number of events, and the temperature setback level should be included in recruitment materials. These facts will help non-participants make an informed decision about joining the program.

Conclusion 5

Similar to the results in the AC Saver Day Of survey, non-participant respondents who already had a smart thermostat were more likely to indicate they wanted to join the Day Ahead program. About 64% of respondents with a smart thermostat and 43% of respondents without a smart thermostat said they would join the program at the $125 one-time incentive level.

- ***Recommendation 5***
  Concentrate marketing efforts to non-participants that already have a smart thermostat. These customers have fewer barriers to entering the program and already understand the functionality of a smart thermostat.

Conclusion 6

The optimal incentive level to get customers to join the Day Ahead program could be found with additional research. Currently, the curves shown in this report display the percentage of customers willing to join at each incentive level, but the revenue generated from each customer is not considered.

- ***Recommendation 6***

  Consider an additional study that integrates the revenue that customers bring to the program at each incentive level. This would allow the generation of a revenue curve along the same X-axis as presented above. Using this method, the ideal incentive level can be found that maximizes revenue and makes the program cost-effective.

5 Capacity Bidding Program

The following sections include a brief description of the Capacity Bidding Program and process evaluation goals, the results from both the aggregator interviews and non-participant survey, and conclusions.

5.1 Capacity Bidding Program Overview

The Capacity Bidding Program (CBP) is a demand response program that gives commercial and industrial customers the opportunity to earn incentive payments in exchange for reducing electric demand upon request from SDG&E. The CBP allows participants to nominate a demand reduction amount every month of the program season and receive payments for achieved reductions. The program runs from May through October and is managed by third party aggregators. There are two options for notification in the CBP: a day-ahead option where participants are notified by 3 PM the day before an event, and a day-of option where participants are notified two hours before an event. There are also two options for event time periods: 11 AM to 7 PM, and 1 PM to 9 PM. Customers and aggregators can nominate any combination of notification and time period for each month of the program season, each with its own associated incentive amount.

5.2 Capacity Bidding Program Interview Overview

The primary objective of the CBP interviews was to gather information from third-party aggregators, participating customers, and recently unenrolled customers about their experience that would help shape and improve the program. There are currently five active aggregators in the program and three that were active within the last three years. There are 17 customers currently enrolled in CBP through the various aggregators and 25 customers that unenrolled within the last three years. Given the limited number of customers, Nexant conducted in-depth interviews as the primary data collection method for CBP. The Nexant team, with support from SDG&E staff, attempted to contact currently enrolled and recently unenrolled customers via phone and email for approximately six weeks but was unable to schedule interviews with any customers. Despite these challenges, the Nexant team completed in-depth interviews with four third-party aggregators and collected valuable perspectives on a variety of topics impacting both the aggregators and their customers. The aggregator interviews were not incentivized and designed towards answering the following research topics and questions:

- **Program Participation:** What makes CBP a good fit for your business and your customers? What are the advantages and disadvantages of SDG&E's CBP compared to others?
- **Marketing and Recruitment:** What forms of marketing are most successful? Are there challenges recruiting customers? What makes a customer a good fit for the program?

- **Customer Enrollment:** Have there been any challenges with the customer enrollment process? How are monthly nominations established and submitted? What is the process to select the best CBP product offering for each customer?
- **Prohibited Resources:** How has the prohibition of backup generators impacted your business? Have you received feedback from your customers on this requirement?
- **Notifications:** How do you decide which notification option to choose for your customers? How are notifications received and relayed to customers? What about the notification system works well? Are there things that could be improved?
- **Event Dispatch Procedures:** How are customers' loads controlled? How do you work with customers without automated controls?
- **Customer Baseline:** What is your opinion of the 10-day average baseline used for settlement? Do you use the Day-Of Adjustment?
- **Payments and Penalties:** What is your opinion of the incentive structure and amounts? Are the penalty structure and amount fair?
- **Customer Incentives:** How are customer incentives structured? When are customer incentives paid out? Are customers satisfied with the incentives?
- **Customer Support and Satisfaction:** What additional support do you provide your customers? Are customers satisfied with the program?
- **Partnership with SDG&E:** How is your relationship with SDG&E? Have there been any challenges working with SDG&E? If so, how were they resolved?

Prior to interviewing the CBP aggregators, Nexant conducted interviews with key program stakeholders to obtain a clear understanding of the program's objectives, design, operations, and current thinking about the program going forward during the period 2023-2027. Our interviews included staff with responsibilities that cover program management and policy/regulatory management. This helped identify specific topics of interest that are unique to the CBP program and facilitated the conversations with the current and former CBP aggregators.

5.3 Capacity Bidding Program Interview Findings

The following sections summarize the findings for each of the research questions. The responses are taken from the four interviews conducted during this evaluation: three with active third-party aggregators and one with a recently active aggregator.

5.3.1 Business Characteristics

The first series of questions was used to gather information about the aggregators, their roles, and experience with CBP compared to other demand response programs. The representatives from the four aggregators interviewed as part of this evaluation were responsible for customer account management, customer recruitment, regulatory and government affairs, settlements and payments analysis, and general day-to-day operations to manage their participation in CBP. The companies interviewed have been participating in demand response programs for ten to twenty years, including CBP and the Base Interruptible Program (BIP) with the other California

Investor-Owned Utilities (IOUs), California's Demand Response Auction Mechanism (DRAM), and many other programs across the country. None of the representatives focused solely on demand response in SDG&E territory or the California markets, so they often compared their experience with CBP to other Independent Service Operator (ISO) and utility demand response programs in other national jurisdictions.

5.3.2 Program Participation

The four aggregators interviewed have been participating in SDG&E's CBP between four and fifteen years. Based on their experience, there are many reasons the program is a good fit for both the aggregators and their customers. The flexibility of monthly nominations is a notable highlight, as it allows customers to decide if they want to participate each month, take a break, or adjust their nomination level to meet their monthly operations. This prevents customers that might need to skip a month due to certain operational needs from getting penalized for under performance. The aggregators also praised the high incentive levels and familiarity with the program structure for larger customers that also participate in CBP managed by Pacific Gas & Electric (PG&E) and Southern California Edison (SCE). According to the aggregators, their customers are motivated not only by the financial incentives they receive for performance, but also their contribution to reducing the likelihood of rolling blackouts. For many larger entities, corporate citizenship, which is the recognition that they have social, cultural, and environmental responsibilities to the communities in which they operate, is the primary motivator to participate as they want to contribute, even if they can't nominate substantial load or be highly compensated. Many of these same customers participate in demand response programs as part of a larger set of corporate sustainability goals. The decision to join the program in SDG&E territory is often made simpler for these national chains that already have energy management systems (EMS) that facilitate their participation in demand response programs across the country.

Compared to DRAM and other demand response programs, the primary advantages of SDG&E's CBP are the higher incentive rate compared to other utility DR programs, the ability to adjust monthly nominations, not being a year-round program, event duration being limited to 4 hours, the two notification options (Day-Ahead and Day-Of), and the two program window options (11 AM to 7 PM and 1 PM to 9 PM).

The 11 AM to 7 PM option may be removed from the program in the near future, but two of the aggregators interviewed mentioned it provided a better option for customers that don't have load to curtail in the late evening. Without the 11 AM to 7 PM window option, a fraction of these businesses would likely unenroll. One of those two aggregators has only one customer enrolled which is currently on the 11 AM to 7 PM window. This customer recently lowered their nomination because they had been getting penalized in previous seasons for under performance, eliminating most of their incentive from participating. The aggregator wasn't sure if this customer would be willing to switch to the 1 to 9 PM window because their curtailment is done manually, so it was an advantage to keep this option.

The other aggregator that mentioned the 11 to 7 PM window being an advantage has a larger portfolio and was speaking in general that many customers do not have load to curtail after 7 PM. Most of their portfolio (by nominated capacity) is on the 1 to 9 PM window and the majority of those on the 11 to 7 PM window would be willing to move to the 1 to 9 PM window. They mentioned that there are businesses and sectors that can't participate in the late evening, so it's still an advantage of this program over others if maximizing enrollment is the primary goal.

The main disadvantages compared to other programs are the lack of an elect option like PG&E's CBP, which allows aggregators to select their own CAISO market bid price within specified operation hours, customer fatigue from the higher number of events (particularly consecutive event days), penalties for underperformance, and the 10-of-10 baseline calculation. These topics are discussed in greater detail in later sections.

5.3.3 Marketing and Recruitment

One of the aggregators only works with their existing customers as they are no longer selling their load curtailment platform to new customers. They are not actively recruiting but are working on a new product solution that will allow them to expand their portfolio soon. The other three aggregators are still accepting new customers into their portfolio, but all mentioned challenges with recruitment. In general, the aggregators' primary recruitment effort is to work with their existing portfolio of customers across the country to see if there are any additional facilities in SDG&E's service territory that want to participate. This effort is much easier, less expensive, and less time-consuming than developing and maintaining relationships with new, smaller customers.

Two of the aggregators discussed substantial marketing campaigns that were launched to recruit new customers, including targeted business development, advertising, hosting webinars, social media campaigns, and cold calling. However, both mentioned the San Diego market was especially difficult to recruit new customers compared to other areas of the country and their marketing efforts were mostly unsuccessful. One aggregator said there appears to be a knowledge gap between the national chains that want to participate in all available programs across the country and smaller customers that aren't aware of demand response at all. This knowledge gap makes recruiting new customers a significant challenge where the results are typically not worth the effort. None of the aggregators have dedicated sales teams for SDG&E territory, but some have sales representatives that focus on the California market. Another aggregator mentioned most customers they solicit shy away from participating in California demand response programs because events are called too frequently, they can't use backup generators, or they are too concerned about penalties wiping out their revenue.

The aggregators were asked to describe the qualities that make a customer a good fit for CBP. The characteristics identified were having significant, consistent load during the program operating hours with the ability and willingness to curtail load during events. One aggregator said the most important quality is their commitment to the program, regardless of the load reduction potential. Smaller customers that can curtail less load are better candidates than larger customers with higher load curtailment potential that might miss an event a few times per

season. One of the aggregators said they specifically recruit customers that are focused on corporate citizenship over financial gain, as that is a greater motivator to perform more consistently.

The aggregators also discussed characteristics of businesses that are not a good fit for CBP, as well as stories of customers that left the program for various reasons. There are specific market segments, particularly those that shut down at or before 5 PM, that are seen as poor fits for CBP because the event hours are too late and curtailable load is minimal. For other businesses, such as fitness centers or stores with a lot of traffic where exterior doors frequently open, increasing HVAC setpoints causes too much customer discomfort to participate in the program.

5.3.4 Customer Enrollment

The aggregators were asked to describe the steps of enrolling a new customer into CBP, including anything about the process with SDG&E that works well or needs improvement. Each of the aggregators follow similar steps, which include performing on-site assessments of potential customer's facilities to identify opportunities for load curtailment, making sure these load reductions are consistently available during program hours, and stepping through the rules for the program prior to signing anyone up. Once a customer is deemed a good fit for the program, the aggregators follow the standard procedures in place to enroll the customer. The aggregators said the add forms to enroll a new customer are straightforward and they haven't experienced any challenges, but there are more forms to complete compared to the other utilities, which makes the process more time consuming. One mentioned that the data authorization process required more extensive paperwork than PG&E and SCE's CBP.

All four aggregators mentioned challenges with the platform used to upload add forms, submit monthly nominations, and receive customer data. This was identified as the number one challenge for the program by all four aggregators. They all preferred the APX Market Suite platform that was previously used by SDG&E (and is still currently used by PG&E and SCE). Having one familiar system across all three IOUs made the process of entering monthly nominations much easier. Beyond the need to learn a second platform, the aggregators said the new platform is not user-friendly and has technical problems, including slow performance (especially the drop downs), login issues, and nomination values were sometimes lost or duplicated in the system and requiring reentry. One aggregator said they always download the reports to ensure nominations were uploaded correctly but have sometimes experienced issues that required SDG&E to send the reports manually. All four aggregators mentioned reaching out to SDG&E to report issues with the platform and were assured updates were coming to improve the system. One advantage identified over the previous APX platform is being able to enter the nominations in the system rather than uploading a CSV template, which introduced other errors not present in the new SDG&E platform.

The aggregators review previous performance and reevaluate nominations either once per season or monthly, depending on the variability of each customer's load and their level of engagement in the review process. If a customer has recently underperformed, the aggregator will reduce their nomination appropriately. Most aggregators meet with each customer during

the off season to make sure they are still a good fit for the program and discuss any adjustments that need to be made before the start of a new season.

All the aggregators said they have conversations with their customers to decide on which event window and notification option to select based on their operating schedule and load curtailment system. Some customers have the appropriate EMS or controls to participate in the Day-Of notification option but elect to participate in the Day-Ahead program because they want additional time to plan for the event. In general, customers stick with their initially selected product and do not switch in subsequent years.

5.3.5 Prohibited Resources

The aggregators said they haven't experienced significant challenges with the process to educate their customers and complete the prohibited resources attestation forms. One aggregator covered the topic in webinars to make sure customers were aware of the rule change. Most customers seem to be aware of the rule now because they have been participating for several years. One minor challenge identified was that not all customers have good records on their generating equipment, so tracking down and organizing the documentation required to fill in the attestation form can be time consuming.

The prohibited resources rule had an impact on customers' participation in the program, with two aggregators losing a significant portion of their portfolio when the rule first came into effect. One aggregator said the rule has impacted their recruitment efforts because backup generators were the only load some customers were comfortable providing on a consistent basis, even though the additional cost of fuel to operate the generators reduced their overall compensation. On the other hand, one of the aggregators said none of their customers had backup generators, so the rules never caused any issues.

5.3.6 Notifications

The aggregators described the process of receiving notifications from SDG&E and how those are communicated to their customers for dispatch. Of the four aggregators interviewed, one currently participates in the Day-Ahead option, one does not have any active customers but previously participated in the Day-Ahead, one participates in the Day-Of, and one participates in both. The decision on which notification option to choose is typically based on the customers' controls and how quickly they can plan and respond to events. Some of the larger national companies participate in programs across the country that provide much shorter notification than CBP, so they elect to join the Day-Of program to receive higher incentives. Other customers, even those with the controls to participate in the Day-Of program, choose to join the Day-Ahead option because they feel they will perform better with the additional time to prepare.

Receiving notifications was identified as one major area of concern with the program. This program year, one aggregator mentioned they were not receiving any phone call, text message, or email notifications as they had in the past and have been relying on SDG&E staff to email them about an upcoming event. They said they were assured by SDG&E staff that the issue with automatic email notifications was resolved but have not verified the fix because an event

has not been called yet. Another aggregator said this year they've been receiving emails for each individual customer alerting them of an upcoming event. For an aggregator with many customers in their portfolio, this results in hundreds of emails being delivered prior to each event. These email blasts have confused participating customers because often the person receiving communications from SDG&E is in accounts payable and not aware of their demand response participation. Further, they receive emails for all four products (notification and window) regardless of which they participate in, meaning they must spend additional time parsing the information to determine which notification and window has been called, and dispatch the appropriate customers.

Other than the issue surrounding alerts and emails, the aggregators spoke positively of event notifications. They all said they receive alerts earlier than required by the tariff, which allows them to give their customers ample notice to prepare for events. On average, the aggregators said they receive several hours' notice prior to Day-Of events and 24 hours' notice prior to Day-Ahead events. There is no difference in how aggregators handle alerts for the two different notification options, with each routing through their respective dispatch software in the same manner whether the customer has automated controls or not.

5.3.7 Event Dispatch Procedures

The aggregators work with customers that curtail load automatically through an EMS as well as manual controls. Each of the aggregators have their own dispatch software platform that receives notifications and automatically alerts customers of upcoming events through their preferred communication method (phone, text, email). Some of the aggregators develop connections to dispatch into customers' existing EMS, while others offer their own hardware and software to customize a cost-effective solution that works best for each individual customer. The aggregators provide customers with a curtailment plan, especially those that execute their load reduction manually, just in case the primary contact is not available on an event day. Sometimes the aggregators call new customers prior to an event to make sure they know what to do.

One challenge that was identified with dispatch is that some of the national customers are headquartered on the East Coast. Since the program has been dispatched later into the evening in recent years, signals have been sent to energy managers that have already left work for the day. This can result in customer locations being unprepared for events or curtailment protocols not being programmed into their EMS on time.

5.3.8 Customer Baseline

The aggregators discussed the 10-of-10 customer baseline calculation and Day-Of Adjustment used for CBP and whether this approach accurately portrayed their customers' performance. Two of the aggregators said this baseline approach accurately represented their customers' performance. One of these aggregators said they always use the Day-Of Adjustment because the loads curtailed include HVAC equipment, which the other said they never use it because the loads they control are not weather-dependent. Both aggregators said their customers have very consistent usage throughout the season.

On the other hand, two of the aggregators said the 10-of-10 baseline undervalued performance and discouraged some of their customers. These aggregators said many of their customers do not have consistent operations, so comparing load to their average over the previous two weeks does not represent their performance on event days. The aggregators feel these calculations and adjustments have a greater impact on overall performance and customer satisfaction than the payment structure and amounts. One aggregator said the 40% Day-Of Adjustment cap limits performance and is not enough during weather-sensitive events, wishing the program would offer an uncapped adjustment factor.

5.3.9 Payments and Non-Performance Penalties

The aggregators were asked to provide feedback on the incentive payment and penalty structures for CBP. They all believe the incentive structure and amounts are favorable, especially when compared to other programs. The high incentive levels were consistently cited as one of the primary advantages of SDG&E's program over others, both within California and throughout the country.

The concept of penalties, not specifically the CBP structure or amounts, were discussed at length during the interviews. While all four aggregators said they understand why penalties exist to ensure utilities receive the nominated capacity, three aggregators said penalties are a significant barrier to recruitment. Certain customers, such as public entities, that would be good candidates for the program will not enter a contract that has penalties. A couple of the aggregators said they have had to absorb penalties and remove them from certain customers' contracts to enroll them. The aggregators said they have had significantly better success recruiting customers into other programs that do not have penalties for underperformance. One aggregator had a different opinion, saying penalties don't impact recruitment if it's communicated up front and your main emphasis when selling the program is the impact to the environment and community rather than just financial incentive.

Apart from just the inclusion of penalties, the aggregators shared insights about the penalty amounts and how they've impacted customers. One aggregator described how underperformance in a select number of events would essentially wipe out all a customer's earnings for the season. This led them to remove most of the equipment from their curtailment plan and lower their nomination. This season with the lower nomination, they are performing better, but the total capacity being contributed to the program is significantly reduced. One aggregator suggested payments and penalties should be based on overall performance. They felt if a customer was able to deliver their nominated load for most events, the penalties shouldn't outweigh their earnings. There are no specific market sectors that have had consistent performance issues. All aggregators said that underperformance results in a review of the customer's nomination and sometimes an adjustment to their curtailment plan or communication strategy.

5.3.10 Customer Incentives

All the aggregators said they split their revenue with each customer based on their seasonal performance. This structure provides for transparency, ease of understanding, and a feeling that

success is shared. The amount of revenue split is negotiated with each individual customer contract. All the aggregators wait until the end of the season to pay customers once settlement is finalized and each customers' yearly performance data can be analyzed unless they agreed in the contract to pay customers on a monthly basis. Overall, aggregators reported customers are satisfied with the incentive structure and amounts, which the aggregators reported are higher than those offered by comparable programs in other utility service territories.

5.3.11 Customer Support and Satisfaction

The aggregators provide their customers with additional support throughout the program season and offseason, including communication about program changes and a review of curtailment plans and nomination amounts. They also work with each customer when there are issues with performance and work closely to ensure any issues are resolved quickly. Some aggregators provide additional data monitoring so customers can see their usage and performance in real-time during events to make sure they are meeting their load reductions. One of the aggregators completes scorecards each month for their customers so they can track their performance and make any necessary adjustments.

Overall, aggregators reported customers are satisfied with their experience as CBP participants. One common concern about the program was the high number of events called, particularly if events occur on consecutive days. Some customers, such as those with refrigeration processes, do not have the ability to participate in consecutive events because they need to use the day after an event to ramp their processes back up. The high number of events is seen as one of the primary reasons for customer withdrawal from the program. It also stifles the aggregators' ability to recruit new customers because many have already heard about the frequent events and are wary of joining. The only way aggregators can shield their customers from the frequency of events is if they have a portfolio large enough to not dispatch all customers for each event. The number of events would also be less of a concern if the penalties for underperformance were less severe. All the aggregators said that they have experienced more customer fatigue with the PG&E and SCE CBP, because those programs are typically called more often than in SDG&E. However, for large customers that participate in multiple CBPs, frequent events in one service territory can influence their opinion of the program in another service territory.

The aggregators provided other examples of challenges working with specific customers. One retailer, against the aggregator's advice, was so aggressive with reducing lighting levels that shoppers complained, causing them to withdraw from the program entirely. One aggregator mentioned a large customer left their portfolio to join DRAM because a competing demand response provider offered them higher incentive levels.

A couple aggregators mentioned that the rationale for dispatch is not always clear to the customers because the Locational Marginal Price (LMP) triggering an event does not always correlate to high temperatures in San Diego. This lack of connection to why events are being called leads to some customers feeling overused and undervalued. One of the aggregators spoke to their customers directly when they complained about events occurring during cooler

weather days and explained how LMPs worked. This seemed to clear up confusion and motivated that customer to remain in the program, so better education on event triggers could motivate certain customers to stay enrolled.

5.3.12 Partnership with SDG&E

All four aggregators interviewed spoke very highly of SDG&E and the program management staff. They appreciate the regular check-ins that give them an opportunity to discuss a wide range of topics, including day-to-day customer and data issues as well as longer term program changes. They said all their questions or concerns about the program receive timely, thorough responses. They each feel invested in the program and want to see it grow but struggle to recruit new customers. The only issue raised, as previously mentioned, was that the notification system and nomination platform need improvement.

5.3.13 Other Topics

The aggregators were asked to discuss any other opportunities to improve the program not covered in the interview. One aggregator said they would really like SDG&E to add batteries to the program or create a new battery program. They are working with a lot of customers in California that are interested in purchasing battery storage and having a program to bid those resources into would help offset the expense of the equipment. They said they would prefer a utility-run program over one administered by CAISO. Another aggregator said that SDG&E doesn't call test events for the program, which has pros and cons. They said test events would be a great way to make sure the notification system, which has had issues in the recent past, is working correctly. On the other hand, test events may cause more confusion among aggregators and customers if the issues with email notifications are not resolved first.

5.4 Capacity Bidding Program Non-Participant Survey Overview

The Capacity Bidding Program (CBP) non-participant survey had the following survey objectives:

- **CBP Awareness:** Are customers aware the program exists? If so, how did they learn about the program?
- **Interest in CBP and Barriers to Participation:** Are customers interested in joining the CBP? If not, why? What are potential barriers to participation?
- **Current Electrical Usage:** What event hours can loads be curtailed? How are loads controlled? How much notification time is needed to curtail? How many events per year are reasonable?
- **Base Interruptible Program (BIP) Awareness:** Are customers familiar with the BIP? If so, how did they hear about the BIP?
- **SDG&E Communications:** How do customers learn about energy saving programs? What communication channel do customers prefer to learn about programs?

- **Firmographics:** What are the characteristics of the customers surveyed?

SDG&E sent Nexant a random sample of 2,500 commercial customers who were not enrolled in the CBP. The set of customers was sampled by industry in proportion to the entire population of SDG&E commercial customers. Next, Nexant narrowed the sample list down by removing customers for the following reasons: zero electrical usage in the past 12 months, missing customer contact phone numbers, previous enrollment in CBP, and duplicate contact information. The final sample list contained 1,746 unique customers.

Since the survey contained specific questions regarding customers' electrical usage and decision-making regarding demand response participation, it was conducted entirely over the phone to ensure the correct person was answering the questions. Before the start of the survey, respondents were first screened to see if they were familiar with their facility's usage patterns and participation in SDG&E programs. In total, all 1,746 customers were called at least once, and 100 surveys were completed. The survey was incentivized with a $50 Amazon gift card to encourage participation.

Table 5-1 shows an overview for the CBP non-participant survey.

Table 5-1: CBP Non-Participant Survey Summary

Survey Start	Survey End	Days in Field	Incentive	Responses	Response Rate
9/7/2021	9/20/2021	14	$50	100	5.7%

Table 5-2 shows the number of completed surveys by commercial industry. "Retail Trade" was the most common industry with 21 completed surveys. This was followed by "Real Estate" and "Other" with 16 and 13 respondents, respectively.

Table 5-2: Respondents by Commercial Industry

Industry	Number of Completed Surveys
Accommodation and Food	6
Admin. & Waste Mgt	3
Agriculture	2
Construction	12
Educational Services	5
Finance & Insurance	2
Health Care and Social Asst.	6
Manufacturing	5
Other	13
Prof., Science, & Tech.	5
Public Admin.	2
Real Estate	16
Retail Trade	21
Utilities	1
Wholesale Trade	1
Total	**100**

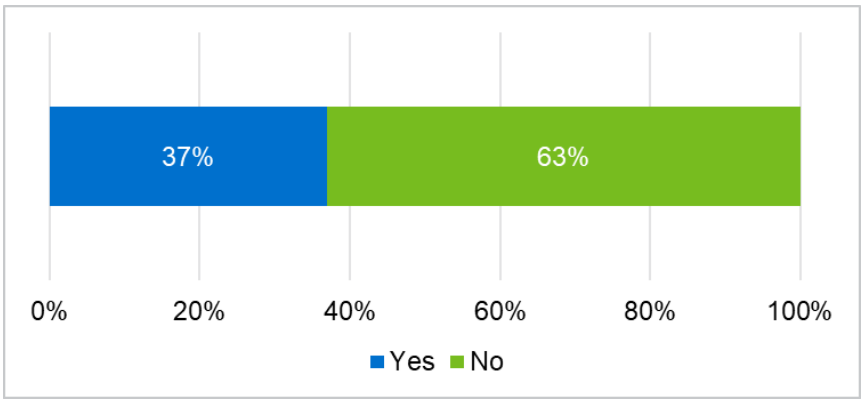
5.5 Capacity Bidding Program Non-Participant Survey Results

The following sections summarize the survey findings for each of the research questions. The number of respondents who answered each question is displayed as “n” in each table and figure title.

5.5.1 Capacity Bidding Program Awareness

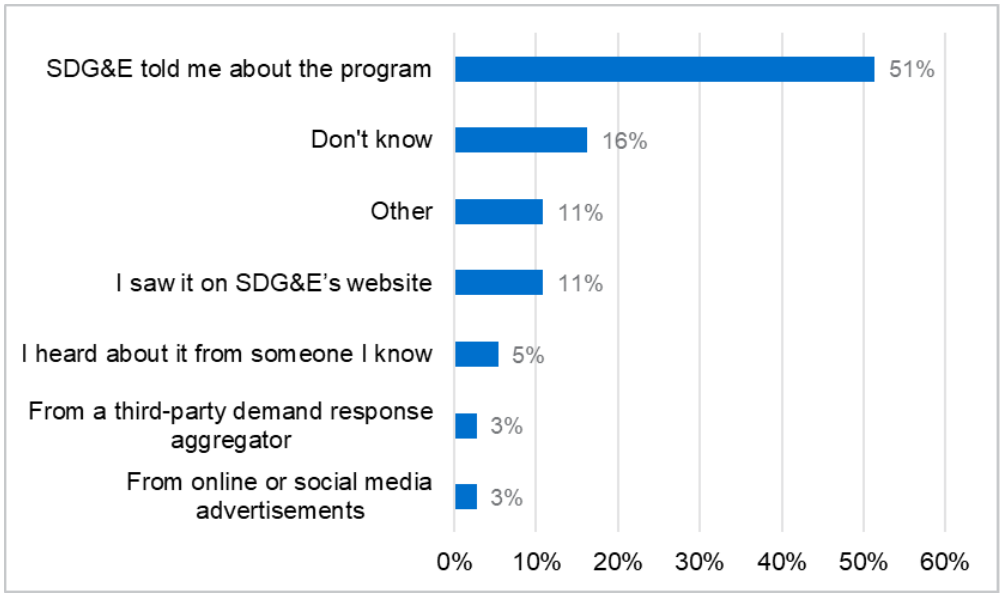
Respondents were first asked if they were aware of the CBP. As shown in Figure 5-1, 37% of respondents knew the CBP existed. This is an indication that marketing efforts by SDG&E have reached a portion of the commercial customer population, but there is still a significant segment that does not know about the program.

Figure 5-1: Customers Who Are Aware of the CBP (n=100)



Customers who responded "Yes" in Figure 5-1 were asked about how they learned about the CBP. The majority of respondents (51%) learned about the program directly from SDG&E. There was a smaller percentage of customers that heard about the program from SDG&E's website (11%) or a third-party aggregator (3%). The full distribution of responses is displayed in Figure 5-2.

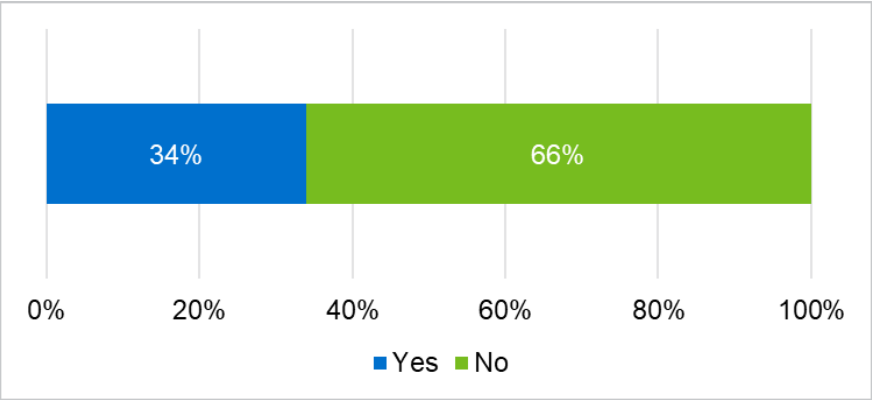
Figure 5-2: "How did you learn about the CBP?" (n=37)



5.5.2 Interest in the Capacity Bidding Program and Barriers to Participation

After respondents were given a short description of the program, they were asked if their facility would be interested in joining the CBP. About one-third (34%) of respondents said they would like to join the program. The results are shown in Figure 5-3.

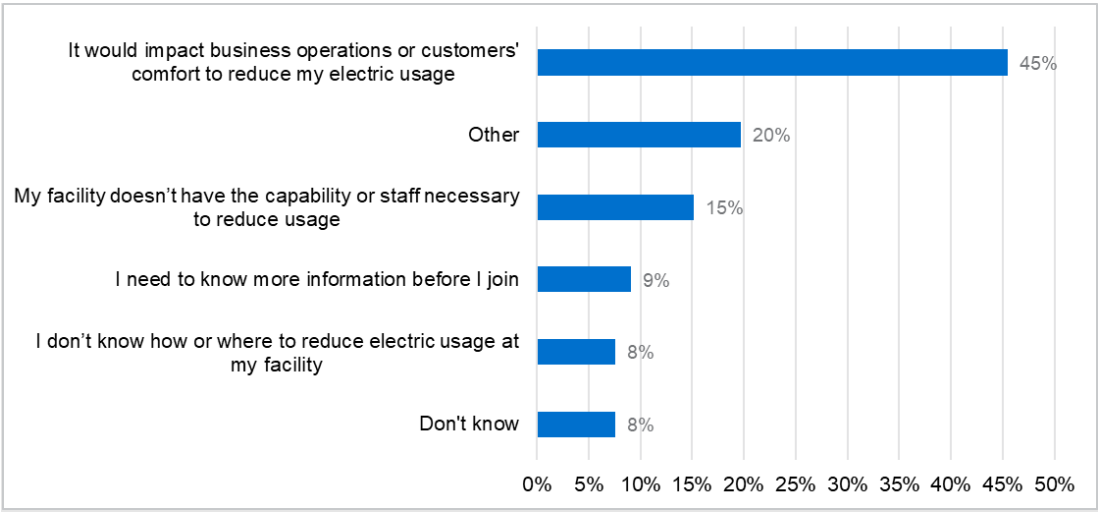
Figure 5-3: Interest in Joining the CBP (n=100)



Those customers who said "No" in Figure 5-3 were asked about why they would not be interested in joining the CBP. As displayed in Figure 5-4, 45% of respondents said it would impact their business operations or customers' comfort to reduce electric usage, and about 20% of respondents selected "Other."

Like the majority of open-ended questions in this survey, the "Other" responses were too few to bin into common themes, but there were a few reoccurring comments. Some respondents indicated that they already reduce usage. For example, "I already reduce my usage as much as I can, and I monitor the AC usage." It is possible this respondent does not understand how the program works and could use additional education about the incentives they can earn by reducing usage. Additionally, other respondents said they needed owner or corporate approval to reduce usage. This highlights both the importance and difficulty of contacting the relevant person when marketing the CBP.

Figure 5-4: "Why wouldn't you be interested in joining the CBP?" (n=66)



Respondents were asked a series of follow up questions based on their answer to Figure 5-4. First, respondents were asked how their business operations would specifically be impacted if they reduced their electric usage. The responses were binned and are shown in Table 5-3. Half

of the responses centered around the facility needing full electric capacity to operate. For example, “We are an agricultural business so we can’t stop watering during the middle of the day because it would damage trees.” Other respondents were concerned about the facility becoming too warm without air conditioning. One respondent said, “We have the AC running most of the time and I wouldn't want to not have that option.” While it might be possible to for some of these customers to reduce usage, they likely do not think it is worth the hassle to change their operations to receive the incentive.

Table 5-3: “What would be the impact to your business operations when reducing electric usage?”

Response	# of Responses	% of Responses
Need full electricity to operate	12	50%
Comfort reasons	6	25%
Shutting down would cause a financial loss	2	8%
Medical reasons	2	8%
Have nothing to turn off	1	4%
Don’t know how to turn off equipment	1	4%
Total comments	**22**	

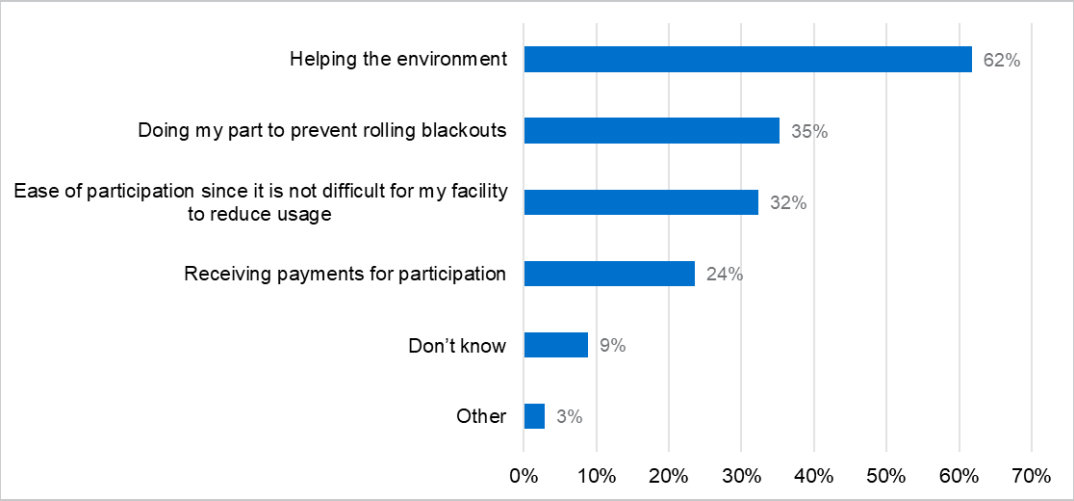
Second, customers who indicated they did not have the capability or the staff to reduce usage were asked what was preventing their facility from having that capability. Some respondents said the circumstances surrounding their production prevented them from reducing. One respondent said, “We make medicine, and it wouldn't be good for production. We have to maintain specific conditions, or the production could go bad.” Generally, customers in the medical industry are not good candidates for the CBP because of their need for consistent, predictable capacity.

Other respondents said they did not have staff available or were not operational during the event hours. For example, “No one is present at that time.” Customers who are not operational during CBP event hours are also not good candidates to join the program because they would not have a significant reduction in usage relative to their baseline.

Lastly, those respondents that put “I need to know more information before I join” in Figure 5-4 were asked what additional information they would need. Two respondents wanted to know specifically how much money they would save by enrolling in the program. Another respondent had a question about the event timing. They said, “Is there an option to narrow the event window?” Lastly, other respondents had general questions like, “What is it all about and how does it work?” These questions emphasize the relatively steep learning curve for onboarding new customers onto programs like the CBP. A future point of emphasis for SDG&E can be to create educational materials and real-life examples that help aggregators walk new customers through the potentially confusing aspects of the program.

Customers who said "Yes" in Figure 5-3 were asked what their motivation would be for joining the CBP. The top motivation for respondents was helping the environment (62%). This was followed by preventing blackouts (35%) and ease of participation (32%). Surprisingly, the fourth most common response was receiving payment for program participation (24%). If respondents are primarily motivated to join the program for non-monetary reasons, then SDG&E can highlight the other benefits to joining when reaching out to new customers. Additionally, marketing to companies who have stated environmental goals could be beneficial. The full results are shown in Figure 5-5.

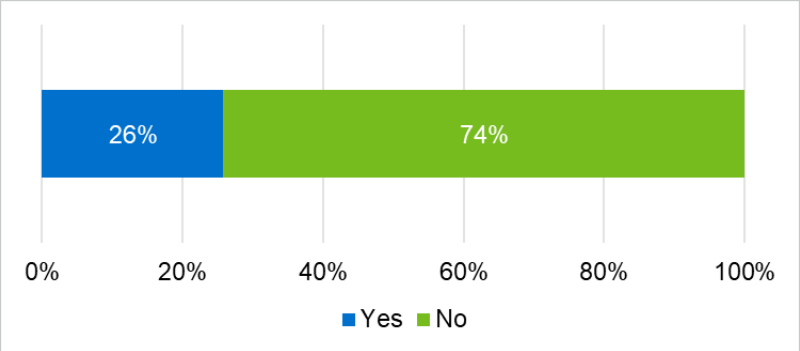
Figure 5-5: "If you were to join the Capacity Bidding Program, what would be your motivation?" (n=34)[1]



Customers who indicated they would be interested in joining the CBP were also asked if they foresaw any issues when reducing usage. As displayed in Figure 5-6, about a quarter (26%) of respondents said they did foresee issues. The concerns expressed by these customers were similar to those summarized in Table 5-3. Namely, customers conveyed that their business operations would be disrupted, or they would become uncomfortable with air conditioning. One respondent did note their facility would have difficulty "rescheduling production to off demand hours," which is a potential energy saving measure participants could implement. Notably, this was the only comment of this nature in the survey. Given the lack of similar comments, it is possible that respondents did not understand this a strategy program participants can employ.

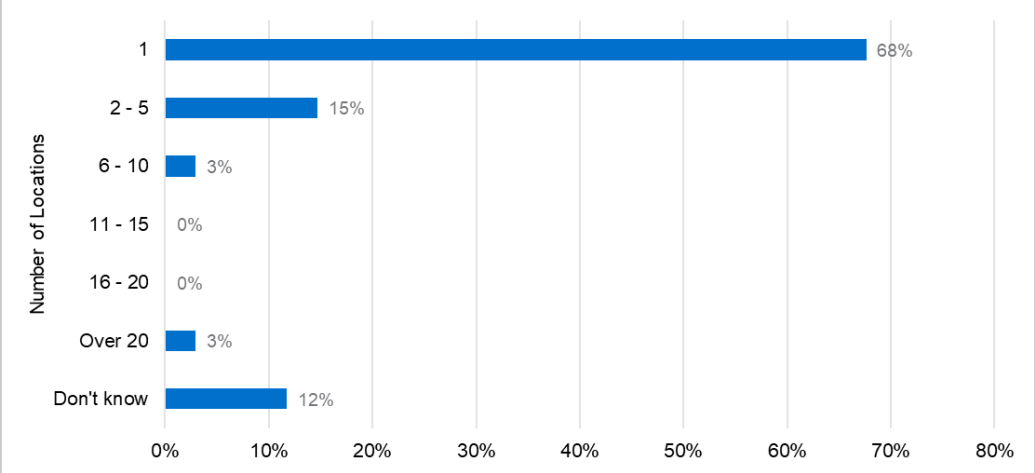
[1] Payment for participating in the program can vary based on aggregator contract, month, and program (Day Ahead or Day Of). As such, respondents were not told the payment they would receive for program participation while taking the survey.

Figure 5-6: "If you were to join the Capacity Bidding Program, do you foresee any issues to your business when reducing electrical usage?" (n=31)



Lastly, respondents were asked how many facilities in their business would potentially be interested in joining the CBP. About two-thirds (68%) of respondents indicated one location would be interested, while only 3% said over 20 locations. This provides evidence that the majority of respondents who were interested in the CBP were smaller, single location businesses.

Figure 5-7: Number of Locations or Facilities That Would Be Interested in Joining the CBP (n=34)



5.5.3 Current Electrical Usage

All respondents were asked a sequence of questions to gauge how they generally use electricity and if they would be good candidates for the CBP. First, respondents were asked which hours they would be able to reduce their electrical usage during the CBP event hour window of 1 PM to 9 PM. Less than 20% of respondents said they would be able to reduce loads at 1 PM or 2 PM, while over 45% of respondents indicated they could reduce at 9 PM. When marketing to new customers, SDG&E and the aggregators can point out that businesses do not need to reduce their usage during the entire 1 PM to 9 PM window, but only for a portion of it. It should also be noted that 40% of respondents said they did not know the hours they would be able to reduce usage. Figure 5-8 shows the percentage of respondents that indicated they would be able to reduce usage in each hour.

Figure 5-8: "From May through October, which hours between 1 PM and 9 PM are you able to reduce electrical usage at your facility?" (n=100)

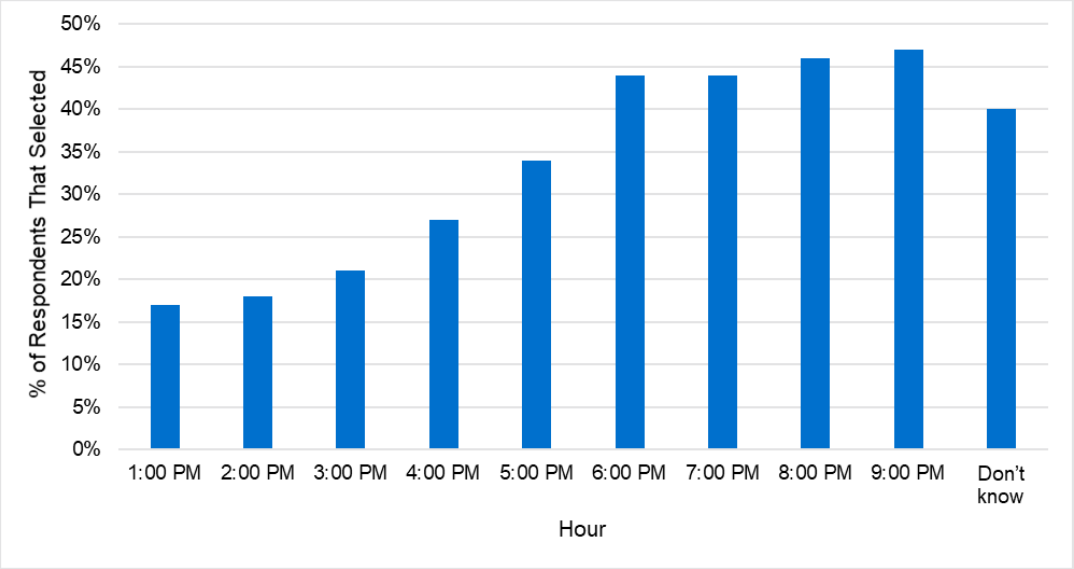


Figure 5-8 displays the same results as Figure 5-9, adjacent to the hours businesses indicated they are operational (the full distribution of operational hours is shown in Figure). At 1 PM, 89% of respondents said they were operational, but only 17% said they could reduce usage. On the other hand, at 9 PM, 7% of respondents are operational and 47% can reduce usage. Of the respondents that marked both the hours they are operational and the hours they can reduce in the survey, 50% had at least one overlapping hour between the two categories. In other words, 50% of respondents said they could reduce usage at least one hour during their operating period. Of those respondents, the average overlap between operation and reduction ability was three hours. This provides evidence that many respondents do not want to reduce usage while they are operational. It is possible the hours displayed in Figure 5-8 increase as the day goes on because respondents are indifferent to reducing usage when they are not operational. But these customers likely have little load to reduce after they are closed for the day.

Figure 5-9: Respondent Operating Hours Versus the Hours Respondents Can Reduce Load

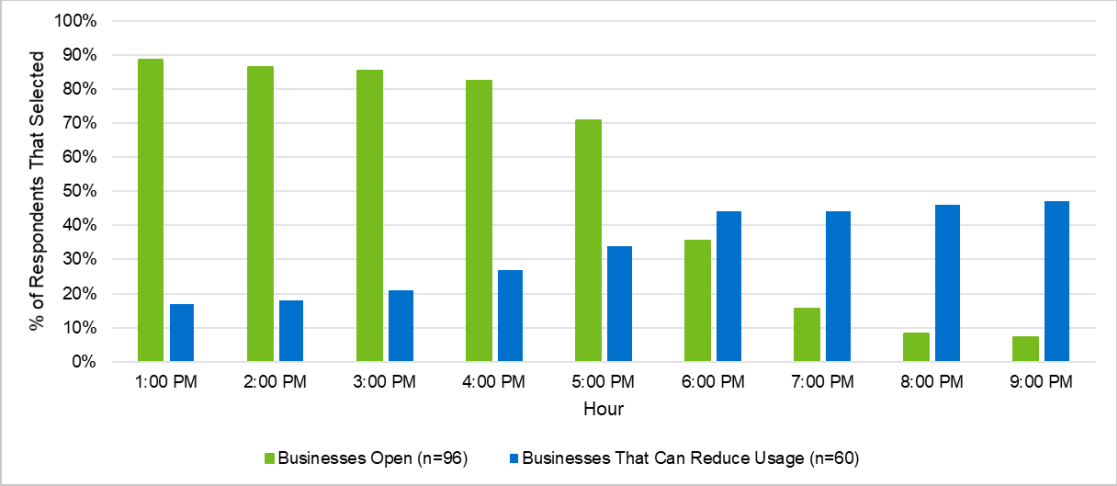


Figure 5-10 shows the percentage of respondents who are operational and can reduce usage each hour. About 22% of respondents indicated they were operational and could reduce at 4 PM, which is the largest percentage between 1 PM and 9 PM. The figure shows there is a very small percentage of respondents who could provide meaningful reduction between 7 PM and 9 PM.

Figure 5-10: Respondents That are Operational and Can Reduce Usage (n=96)

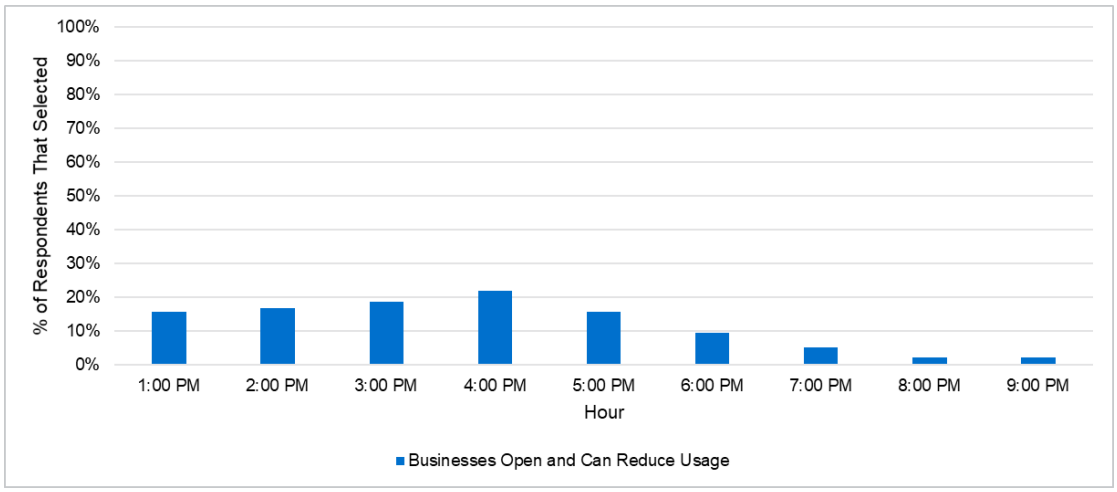
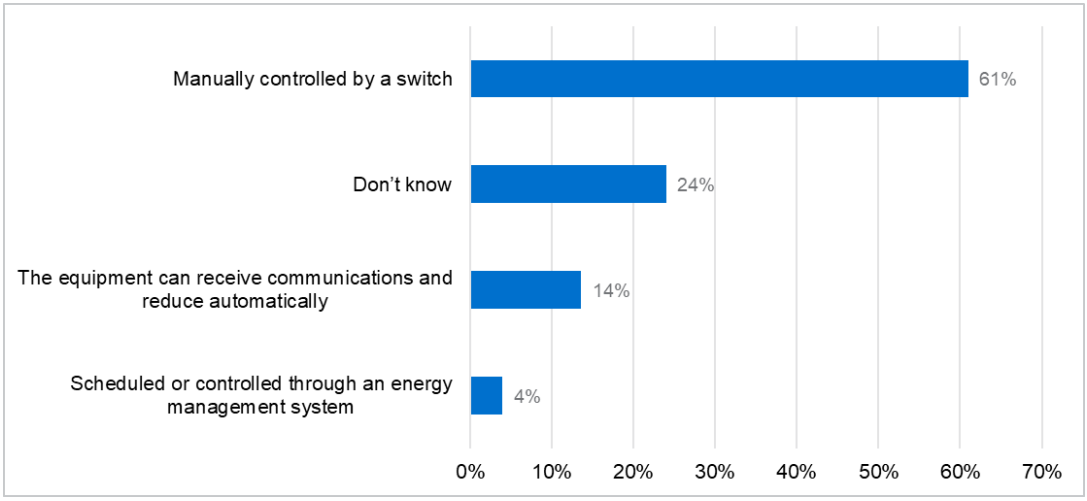


Figure 5-11 displays the how businesses would shut off or reduce their electrical load. About 61% of respondents would manually control their usage. In total, 18% of customers said they had equipment that could automatically reduce loads or had a controlled energy management system. Respondents were allowed to pick more than one answer for this question.

The large percentage of respondents who must manually control their usage might be an additional barrier to increasing CBP enrollment. It requires more effort and coordination for customers to manually reduce usage compared to those who have an automated or management system. It is possible that SDG&E could concentrate recruiting efforts on those

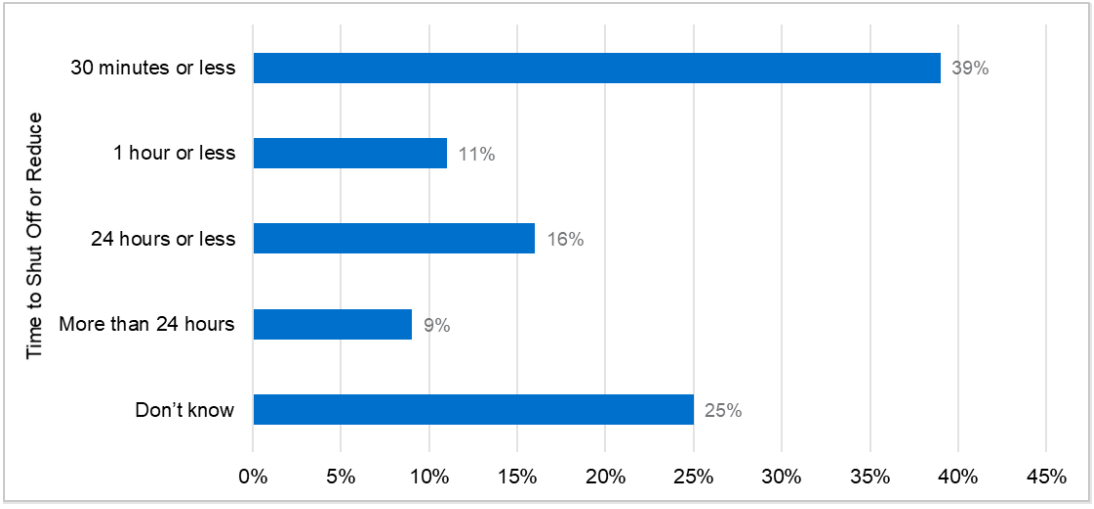
customers who have automated equipment that can reduce usage or customers who have an energy management system. Out of the 12 customers that said they can reduce load automatically and the four customers that have an energy management system, 50% indicated they would be interested in joining the CBP. The same metric is lower for respondents who would manually control their usage (35%).

Figure 5-11: "How would these electrical loads be shut off or reduced?" (n=100)



Next, respondents were asked how quickly they could reduce their electrical loads. A large portion (39%) said they could reduce in 30 minutes or less, while a smaller number (9%) indicated they would need more than 24 hours. Figure 5-12 provides evidence that the Day Of and Day Ahead options in the CBP are both necessary to accommodate different types of customers.

Figure 5-12: "Upon receiving notice, how quickly could you shut off or reduce these loads?" (n=100)

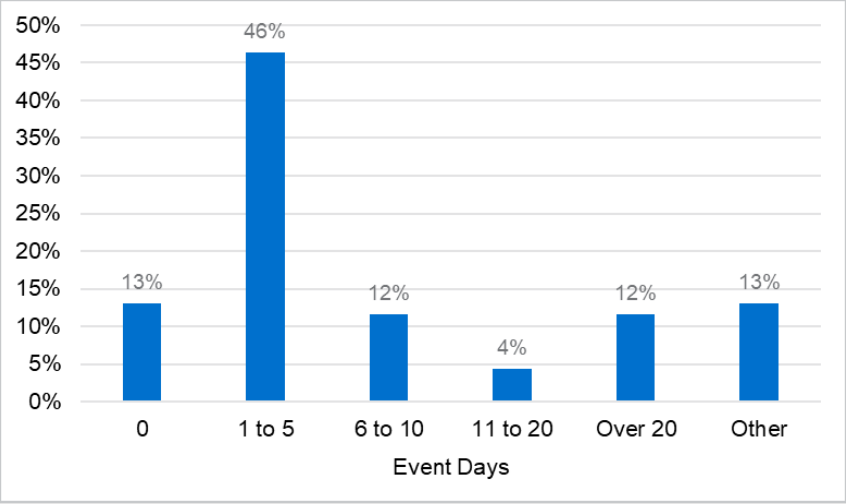


Finally, respondents were asked how many event days would be reasonable for the CBP. The responses were binned into groups and are shown in Figure 5-13. Almost half (46%) the

respondents said 1 to 5 events would be reasonable. About 13% of people responded to the question with “zero” or “none.”

Approximately 13% of respondents were put into the “Other” category. These responses included people who put “any number” or “300 events would be fine for the hours between 4 PM and 9 PM, but for the other hours I’d say zero events.” The second quote comes from a customer who is operational from 8 AM to 4 PM, so they are indifferent about events that take place after their business is closed. This customer’s thoughts about the number of events underscores a broad issue when recruiting new businesses on the CBP. Specifically, it is difficult to convince businesses to adjust their electrical usage if it affects their production or is an inconvenience to normal operations. This is especially true if customers are not motivated by monetary reasons, as shown in Figure 5-5.

Figure 5-13: “How many event days per year would be reasonable?” (n=69)

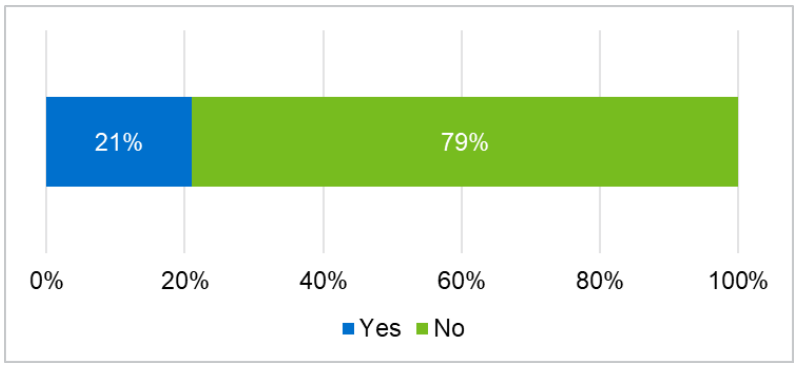


The survey responses show that finding suitable participants for the CBP can be problematic. Even at the beginning of the recruitment process finding the right company representative to speak with about joining the program can be difficult. Businesses enrolled in the program must be willing shift production or reduce usage, even if it inconvenient for them to do so. Those businesses that can use less electricity without losing production or revenue are good candidates to join the program. Additionally, businesses who are motivated to reduce usage for environmental reasons or don’t have to manually shut down equipment are candidates that should receive priority in recruitment.

5.5.4 Base Interruptible Program Awareness

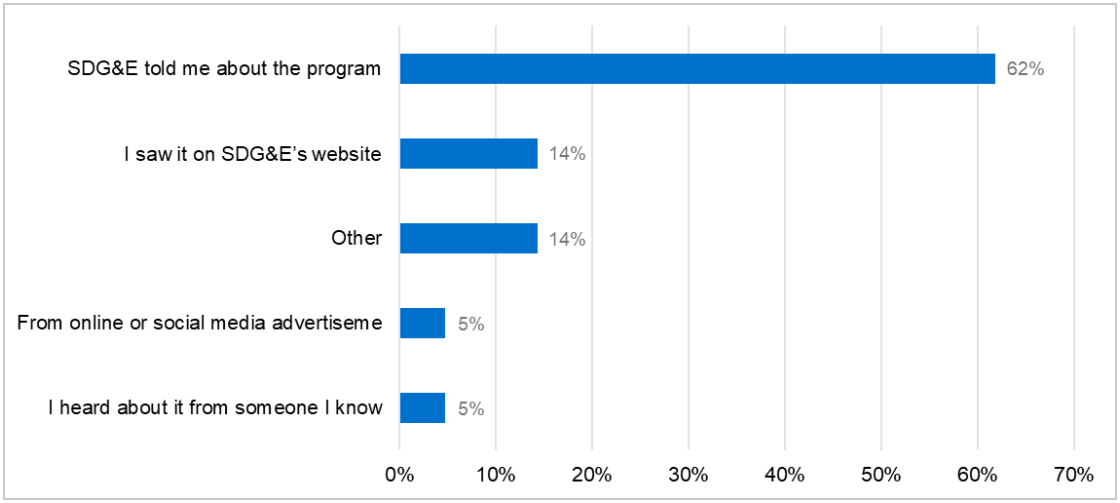
SDG&E program staff expressed interest in knowing how many commercial customers were aware of another commercial demand response program, the Base Interruptible Program (BIP). As shown in Figure 5-14, 21% of respondents were aware of the BIP. This is slightly lower than the 37% of respondents that were aware of the CBP.

Figure 5-14: "Are you aware of the Base Interruptible Program?" (n=100)



The customers that were aware of the BIP were asked how they learned about it. Approximately 62% of respondents heard about the program from SDG&E, while 14% saw on SDG&E's website. The full results are shown in Figure 5-15.

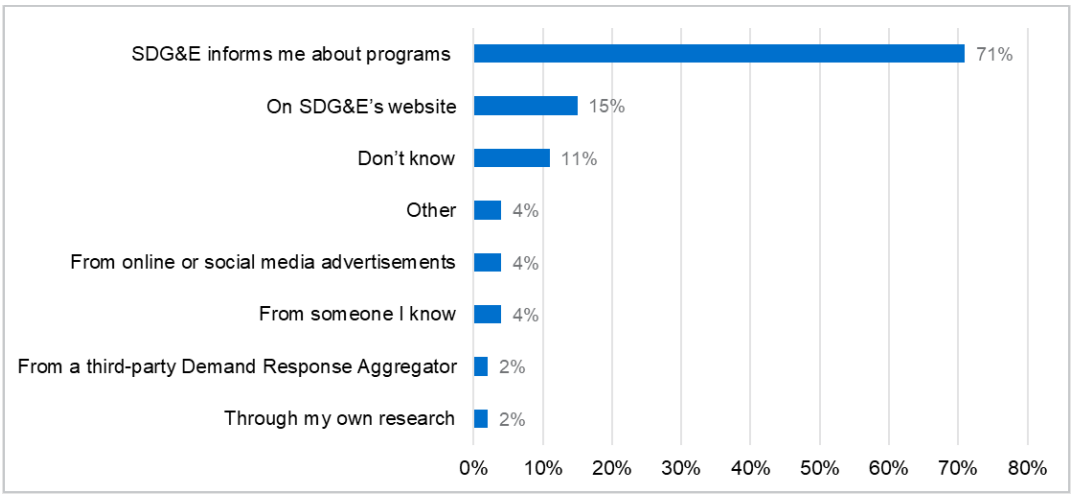
Figure 5-15: "How did you learn about the Base Interruptible Program?" (n=21)



5.5.5 SDG&E Communications

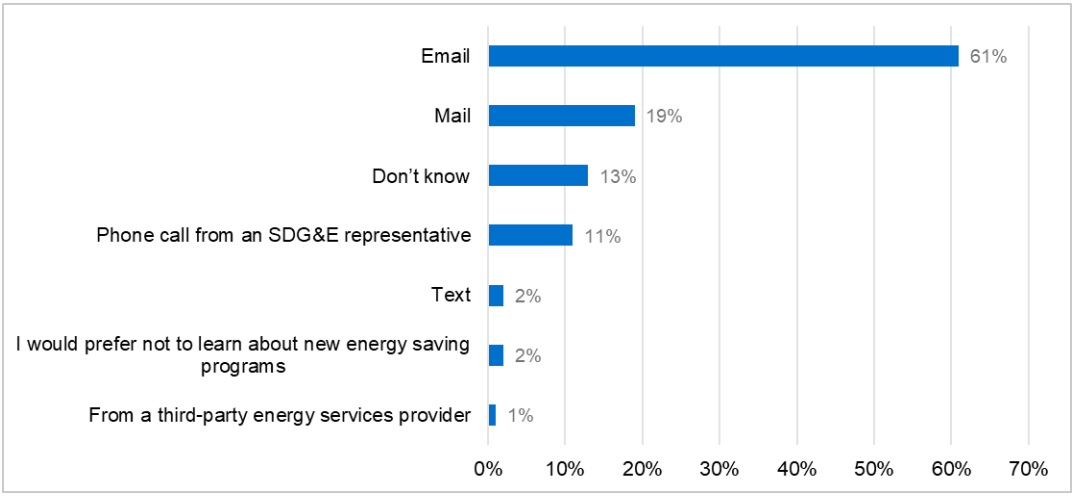
To understand how commercial customers usually learn about SDG&E program offerings, respondents were asked where they hear about programs. As displayed in Figure 5-16, the majority of customers hear about programs from SDG&E (71%) or from SDG&E's website (15%).

Figure 5-16: "How do you learn about energy savings programs offered by SDG&E?" (n=100)



Respondents were also asked about their preferred notification channel to learn about new energy saving programs offered by SDG&E. About 61% of respondents said they like to hear about new programs via email. This was followed by regular mail and "Don't know" with 19% and 13% of respondents, respectively. The full results are shown in Figure 5-17.

Figure 5-17: Preferred Communication Channel (n=100)



5.5.6 Firmographics

The last series of questions asked respondents about characteristics of their business. Figure shows the operational hours for respondents. As expected, about 80% of respondents are open during normal business hours, 9 AM to 5 PM. Additionally, about 10% respondents indicated they are open 24 hours a day.

Figure 5-18: "What hours of the day is your facility usually operational?" (n=96)

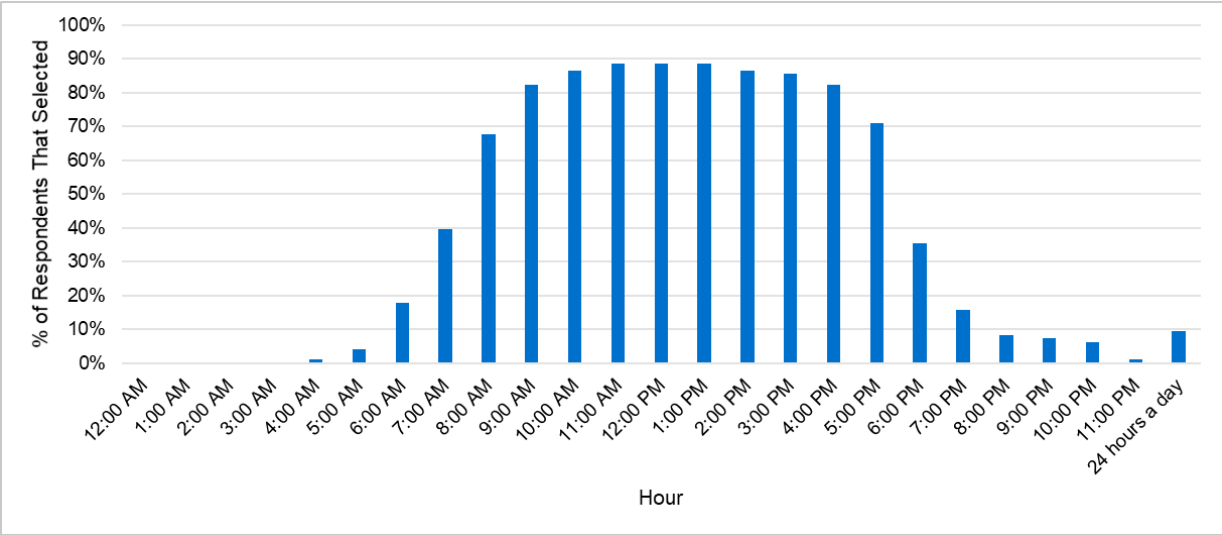


Figure shows the percentage of respondents that are open on the weekends. Approximately 44% of respondents do not operate on weekends, while the rest of the respondents operate at different capacities on the weekend.

Figure 5-19: "Does your business operate on weekends?" (n=100)

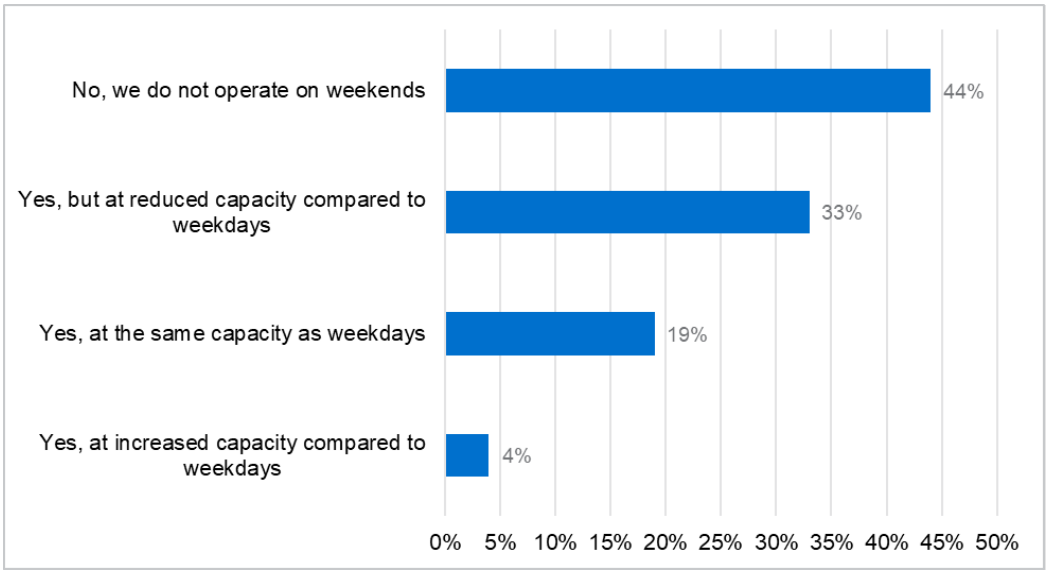


Figure 5-20 displays the percentage of respondents that own or lease their facilities. About 55% of respondents lease and 45% of respondents own their facilities.

Figure 5-20: "Does your business own or lease your facility?" (n=94)

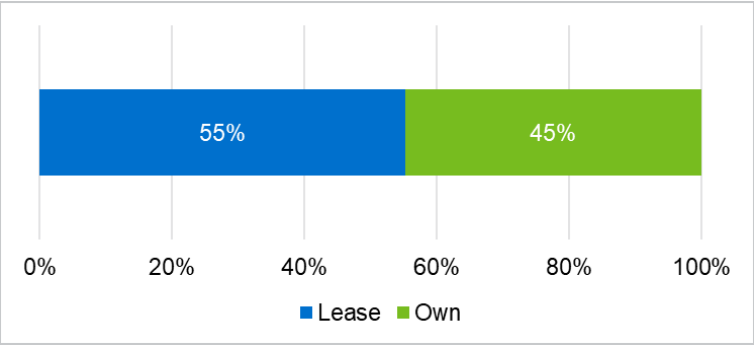
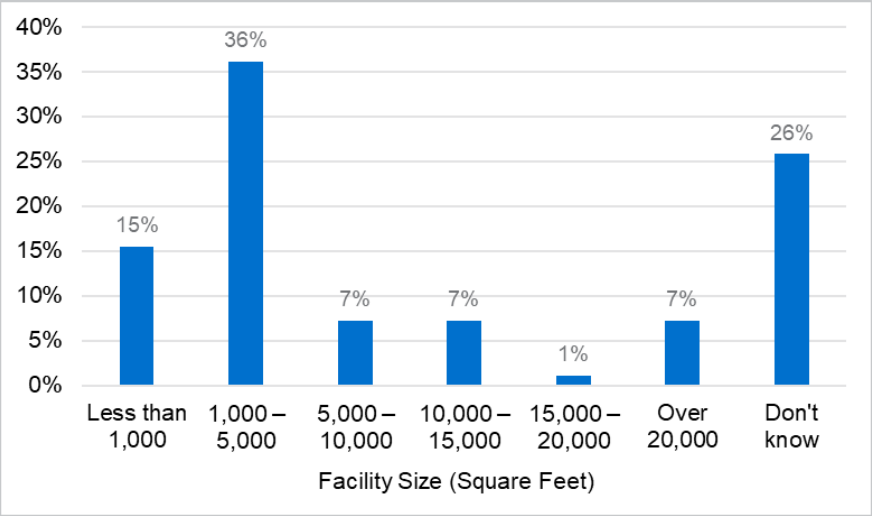


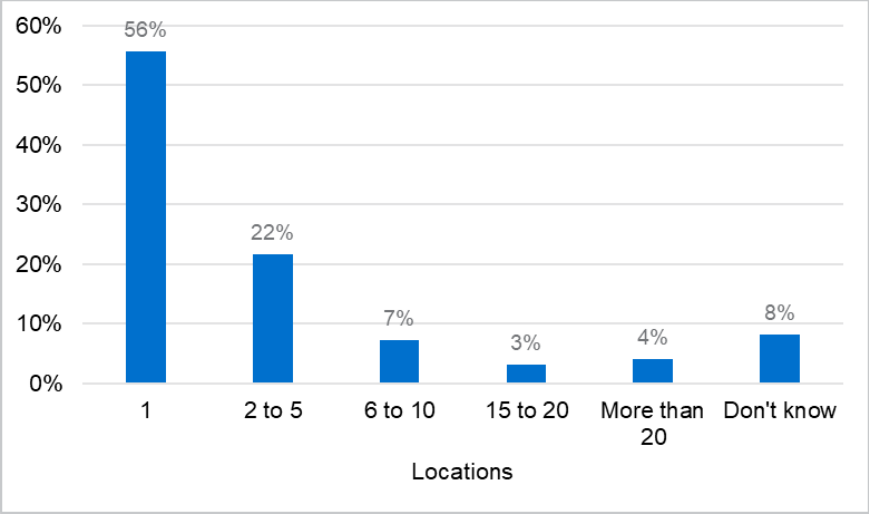
Figure 5-21 presents the square footage of respondents' facilities. Generally, facilities in the survey were on the smaller end of the spectrum. About 15% of respondents have a facility that occupies less than 1,000 square feet and 36% are between 1,000 and 5,000 square feet.

Figure 5-21: "Approximately how many square feet are heated or cooled in your facility?" (n=97)



Finally, Figure 5-22 shows how many locations each business has in SDG&E territory. Approximately 56% of respondents have one location and 22% have two to five locations.

Figure 5-22: "How many locations does your organization have in SDG&E territory?" (n=97)



5.6 Capacity Bidding Program Conclusions and Recommendations

Conclusion 1

Recruiting new customers into CBP is a significant challenge for aggregators. National chains are more likely than smaller business to want to participate in utility or ISO demand response programs, but most of those customers that want to participate are already doing so. Smaller businesses are typically less educated on how these programs work and the potential benefits of participation. Other customers that are familiar with CBP and other demand response programs in California have a general impression that events are called too frequently and penalties from underperformance outweigh financial incentives.

- ***Recommendation 1***
  Develop marketing and recruitment materials that help educate customers on the benefits of the program and address common concerns and frequently asked questions, such as frequency of events and event triggers.

Conclusion 2

Non-performance penalties are a barrier to program recruitment. Some customers that would otherwise be a great fit for the program (are operational and have sufficient load to shed during typical event hours, are motivated to participate, have sufficient controls, etc.) are simply unwilling to enter a contract that includes potential penalties.

- ***Recommendation 2***
  Consider program changes or adding an option that reduces or eliminates penalties, even if it would require lowering the incentive rates.

Conclusion 3

Customer fatigue is a barrier to program retention and recruitment. While the number of events is lower than in previous seasons, the frequency of events and potential for consecutive event days lowers performance and customer satisfaction with the program.

- ***Recommendation 3***
  Assess the CBP price triggers to determine if an increase could be justified to reduce customer fatigue.

Conclusion 4

The number one challenge identified by the aggregators affecting their participating in the program was the reliability and usability of the software platform used to upload add forms, submit monthly nominations, and receive customer data. Each aggregator said they were informed by SDG&E staff that technical issues were being addressed in future updates and they were optimistic the platform would improve over time.

- ***Recommendation 4***
  Continue regular communication with the aggregators and provide prompt technical fixes and usability improvements to the software platform. Get feedback from the aggregators on how best to support the platform.

Conclusion 5

One of the primary disadvantages of the current CBP is the lack of an elect option like PG&E's CBP offers, which allows aggregators to select their own CAISO market bid price within specified operation hours and submit hourly bids rather than only one daily bid. This option would give aggregators additional flexibility in their bids and could improve customer retention and participation, which align with SDG&E's primary goals for the program. This could prove a popular option with customers, as 99 percent of PG&E's CBP customers have chosen this option[2].

- ***Recommendation 5***
  Consider offering an elect option similar to PG&E's "CBP Elect".

Conclusion 6

Many CBP participants have inconsistent operations and load profiles, so calculating their performance on event days with a 10-of-10 baseline may undervalue their actual curtailment, even when using the weather adjustment.

- ***Recommendation 6***
  Assess the accuracy of other baseline calculation approaches, such as a 5-in-10 baseline with a weather adjustment, for CBP participants.

[2] Resolution E-5112. Southern California Edison Company Mid-Cycle Review Compliance Submittal for its 2018-2022 Demand Response funding Application pursuant to Decision 17-12-003. Page 6. 393334549.PDF (ca.gov)

Conclusion 7

Non-participants were more likely to cite reasons related to the environment and preventing blackouts than money as their motivation for participating in the CBP. In total, 89% of respondents said that helping the environment or preventing rolling blackouts would be their motivation for joining the program. Only 24% of non-participants said they would be motivated by receiving payments. This sentiment was echoed by the aggregators, with one saying they were more successful with recruiting customers that would stick with DR programs by focusing on benefits besides financial incentives.

- ***Recommendation 7***
  The non-monetary benefits of enrollment should be highlighted when recruiting customers. Often larger companies with have specific environmental goals or targets as a part of their mission statement. The CBP is a great way for these companies to fulfil these goals. Also, the company representative making the decision to enroll in energy saving programs usually will not receive financial rewards for program enrollment. Instead, the company's owner or board of representatives will see the benefits. This is another reason to stress the non-monetary benefits of the program during enrollment.

Conclusion 8

Finding customers that are a good fit for the CBP can be difficult. Of the respondents that said they would not be interested in joining, 45% indicated they did not want to reduce usage because of comfort reasons, or it would impact business operations. Additionally, many customers would only be willing to reduce usage after they close for the day. Less than 10% of respondents stated they were operational and could reduce usage from 6 PM to 9 PM.

- ***Recommendation 8a***
  Target customers who do not have to manually shut down equipment. Respondents that could reduce load automatically or had an energy management system were more likely to indicate they were interested in joining the CBP compared to respondents who have to manually adjust load. Implementing a CBP population survey or questionnaire might be useful to identify these customers.

- ***Recommendation 8b***
  Complete a simple load analysis to see which customers are operational after 5 PM. This will help narrow recruitment efforts and eliminate those customers that only are willing to reduce usage while non-operational.

6 Base Interruptible Program

The following sections include a brief description of the Base Interruptible Program and process evaluation goals, the results from both the participant and non-participant surveys, and conclusions.

6.1 Base Interruptible Program Overview

The Base Interruptible Program (BIP) offers a monthly bill credit to businesses that commit to reducing their electric demand by at least 15% of their monthly average peak, amounting to a minimum demand response of 100 kW, when called upon for program events. A customized load reduction plan is developed for each business, establishing a pre-determined level of consumption, known as the Firm Service Level (FSL). Any energy use above the Firm Service Level during BIP events is subject to an Excess Energy Usage Charge. Participants receive at least 20 minutes' notice of program events, which are called only during statewide and local emergency situations.

6.2 Base Interruptible Program Interviews Overview

The primary objective in Nexant's evaluation of the Base Interruptible Program was to gather information from customers that are either current participants or had recently unenrolled about their experience with the current program. There is currently only one customer enrolled in BIP and four customers that unenrolled after the conclusion of the 2020 summer season. Given the limited number of customers, Nexant conducted in-depth interviews as the primary data collection method for BIP. The participant interviews were designed towards answering the following research topics and questions:

- **Program Awareness:** How did they learn about the Base Interruptible Program?
- **Motivation for Participation:** What motivated customers to participate in BIP?
- **Program Application Process**: Are there ways to improve the program application process?
- **Load Reduction Plan:** How satisfied are customers with the process to develop a load reduction plan? Are load reduction plans revisited?
- **Firm Service Level:** How often do customers reevaluate and adjust their firm service level?
- **Prohibited Resources:** Do restrictions on the use of backup generators impact customers' ability to participate or experience with the program? How have they adapted to this limitation?
- **Event Notifications:** Are event notifications timely enough to enact the load reduction plan? Are customers satisfied with the event notifications they receive and what is their preferred method of notification?

- **Number of Events:** How do customers feel about the frequency of events?
- **Actions Taken to Reduce Usage:** What steps are taken to enact the load reduction plan? Which steps of the plan are manual or automated? Have there been challenges enacting the plan? How do customers ensure they meet their firm service level?
- **Effect on Business Operations:** How much do events impact normal business operations? Do events later in the day have a greater impact on operations? What actions are taken after an event to return to normal operations?
- **Incentive Level:** Are customers satisfied with the current BIP incentive level?
- **Penalties:** Do customers believe the current BIP penalties are fair?
- **Satisfaction with BIP:** Are participants satisfied with BIP? What aspects of the program do participants like and dislike?
- **Suggestions to Improve the Program:** Do customers have suggestions to improve the program?

The interviews with recently unenrolled customers covered the same topics as the participants, with additional focus on reasons that the businesses decided to leave the program. Customers were probed to uncover challenges faced, areas of dissatisfaction, and potential areas of improvement for the program.

Both currently enrolled customers and former participants were offered a $150 incentive for completing an interview lasting approximately one hour. Contacting customers to schedule interviews was a significant challenge, with only one currently enrolled customer and one former participant completing interviews.

Prior to interviewing the BIP participants and recently unenrolled non-participants, Nexant conducted interviews with key program stakeholders to obtain a clear understanding of the program's objectives, design, operations, and current thinking about the program going forward during the period 2023-2027. Our interviews included staff with responsibilities that cover program management and policy/regulatory management. This helped identify specific topics of interest that are unique to the BIP program and facilitated the conversations with the current and former BIP participants.

6.3 Base Interruptible Program Interview Findings

The following sections summarize the findings for each of the research questions. The responses are taken from the two interviews conducted during this evaluation: one with the only currently enrolled customer and one with a recently unenrolled customer. For the purposes of clarity and confidentiality, the currently enrolled customer will be referred to in this section as "Customer A" and the recently unenrolled customer will be referred to as "Customer B".

6.3.1 Business Characteristics

Customer A is directly enrolled in the program through SDG&E and is currently in their third season as a participant. This customer is in the construction industry and participates in other demand response programs across the country. Their normal business hours are Monday

through Friday from 6 AM until 4 PM. There is a second shift from 1 PM until 10 PM solely for equipment cleaning and repair which does not have significant energy use. Two representatives of this company were interviewed, one is the plant manager of the facility enrolled in BIP and is responsible for overseeing production operations, staff, and scheduling. He ensures the facility executes their load reduction plan when a BIP event is called. The other representative interviewed is the corporate energy manager that is responsible for making decisions regarding energy use and participation in utility programs.

Customer B is a grocery store with multiple locations in California. They were enrolled in BIP for seven years, but unenrolled three years ago. They are open from 8 AM to 9 PM seven days per week. The representative interviewed is the general manager for multiple stores and is responsible for all decisions and operations regarding energy and store equipment. He is also responsible for ensuring staff at each of store enacts their load reduction plan when a BIP event is called.

6.3.2 Program Awareness and Motivation

Customer A isn't aware of how they first learned about the program because they have been participating in demand response programs across the country for approximately twenty years. Most of their DR participation is managed by an aggregator that helps them make decisions on which programs to enroll and which program offerings to select. They actively seek utility programs, incentives, and time-of-use rates to reduce operating costs. They have specific, measurable environmental stewardship goals, which include targets for reducing energy and greenhouse gas emissions. They also take their role as a corporate citizen very seriously with a strong commitment to their local communities to support the electrical grid and reduce the likelihood of rolling brownouts or blackouts. They mentioned if they don't contribute by participating in demand response, there is a possibility that there will be rolling blackouts and they would be without power without an incentive, so they might as well contribute what they can to reduce the likelihood of that happening and earn incentives or reduce their bills at the same time.

Customer B said they were in contact with a third-party that recruited retailers to participate and enrolled multiple stores into BIP in all three IOU service territories. The primary motivation to join the program was the monthly bill credits because the price of electricity is steadily increasing, but the manager said he liked knowing they were doing the right thing to save energy when the grid was most stressed. They are no longer enrolled in the program because they were unable to train and keep knowledgeable staff to enact their load reduction plan during events. As events were called later in the evening when their trained staff were not on site, they missed their firm service level on multiple occasions. The issue was compounded as the number of events increased in recent years, which eventually led to their decision to leave the program.

6.3.3 Program Application Process

Customer A is enrolled in so many programs across the country that they do not remember the BIP application process specifically, so did not provide any feedback. Customer B said the third-

party helped them enroll into the program, so they didn't experience any issues or have any suggestions to improve the application process.

6.3.4 Load Reduction Plan and Firm Service Level

Customer A has many facilities across the country with similar operations, so developing a load reduction plan was straightforward. They did not remember the specific circumstances working with SDG&E to develop their load reduction plan, but it did not interrupt business operations, nor did they offer any suggestions to improve the process. Their load reduction plan is essentially the same steps they execute to shut down production each day, which consists of manually shutting down equipment in a specific sequence. Their firm load is typically established by reviewing historical hourly load profile data. They identify their baseload before the plant starts production, including lights, offices, etc. and compare that to their load when they're in full production. The difference is the load that can be reduced for demand response. The energy manager and plant managers review their load data once a year prior to the season to determine if they should adjust their firm service level up or down.

The load reduction plan for Customer B includes reducing lighting and refrigeration loads. While their lighting is all LED and is no longer a significant load, it is easy to shut off a portion of the lights with minimal impact to the customers. Most of their load reduction is accomplished by shutting off refrigerated cases. Some of their stores have automated controls to shut down refrigerated cases for demand response events, but the locations that were enrolled in SDG&E's BIP did not have those systems in place. Instead, the load reduction plan was enacted manually, which is why it required properly trained staff. On multiple occasions the manual shutdown and startup procedures were not carried out properly, which caused them to lose a significant amount of product in the refrigerated cases.

6.3.5 Prohibited Resources

Neither of the customers interviewed have backup generators installed at the locations participating in BIP, so the prohibited resource policy does not apply to them. Customer B has backup generators at other locations outside of SDG&E territory, but they do not operate them during DR events. Customer B said that not being able to rely on backup power during an event can be troublesome if it's during busy hours because certain functionality within the store must be shut down.

6.3.6 Event Notifications

The plant manager for Customer A said that 20-minute notifications are sometimes not enough time to properly execute their load reduction plan because it takes approximately 15 minutes to shut down production. They have had issues in the past receiving the notification because the plant manager is often not at his desk or checking email and will miss the notification. They recently enacted a policy with the other plant managers that if anyone sees the notification email that they call the other offices to ensure the plant managers are aware of the event. The plant manager said a 30-minute notification would probably give sufficient them time to shut down properly. He also mentioned a text message, rather than an email, would be received more quickly and provide more time to enact their load reduction plan. The energy manager said they

would like multiple people at each plant to receive an email, a text, and possibly even a phone call to alert them of an upcoming event. The text message would allow the plant manager, even if they're on vacation, to make sure the other staff on site enact their load reduction plan.

Customer A recently received a notification, but the event window started at 4 PM when production had already stopped for the day. In general, they pay attention to the weather and know events are more likely to happen during a heat wave, so they prepare for notifications at those times. They said they typically receive 4-6 events per year and don't feel like that is too many.

Customer B said they normally received 45 minutes to an hour notice prior to an event. With the proper staff on site, this was enough time to enact their load reduction plan. However, many times they did not have the right personnel at the store when an event was called, so they were unable to curtail their load. The manager said he would prefer a text message to an email, as they would be more likely to see it and have more time to alert their staff. He also said that the number of events increased over the years and became difficult to manage because programs in all three IOUs were typically called at the same time.

6.3.7 Actions Taken to Reduce Usage

Customer A has a straightforward procedure to reduce load during an event. Once the plant manager receives the alert, he contacts the plant operators and instructs them to shut down production about a half hour before the event would start depending on how much notice is provided. All high usage equipment is turned off manually in the same manner as their typical daily shutdown procedures. They haven't had difficulties executing their load reduction plan unless they weren't aware of the event in time. While infrequent, there have been times in the past when they're trying to meet urgent customer demands that they choose to run through an event.

The manager for Customer B said that when they receive the email alerting them of an event, they call the participating stores to notify them. The staff member responsible for executing the load reduction plan would shut off a portion of the store lights and begin shutting down refrigeration equipment. At this store, the process was controlled manually, although they had automated controls at other locations. The cost to install controls to automate the process is approximately $20,000 per store. They did experience difficulties executing their load reduction plan on multiple occasions as all the steps had to be carried out in a specific order. If the steps were not followed carefully during shutdown or startup, product in the cases would be ruined. They failed multiple events due to not being able to keep trained staff on site to execute the plan properly.

6.3.8 Effects on Business Operations

Customer A said that as events are now later into the afternoon and evening hours, there is little impact on business operations because the high usage equipment will already be shut down before 4 PM. For events starting at or later than 4 PM, the plant manager will still communicate with staff to not turn on any of the production equipment for testing or cleaning until the event is

over. On event days, the plant is essentially shut down and production doesn't start again until the following morning. The plant manager said that while production numbers may drop on event days, the benefits of participating in the event outweigh the loss of production. The energy manager said they do a good job at managing inventory and participating in events without significant impact to their operations. They have some plants in California that start production at 1 AM and run until around noon just to take advantage of the lowest time-of-use pricing, which limits their ability to participate in demand response programs. They said they generally rely on their aggregator to help them make decisions about which programs to participate in and which facilities to enroll but do some of their own benefit-cost analysis to support those decisions.

Customer B said the events did have a significant impact on business because they typically occurred during the busiest time of day. However, customers that were in the store during events commented that they appreciated the store's efforts to save energy. When events were called earlier in the day, such as noon to 3 PM, they had less of an impact on business operations and their customers. The store manager said that because they are now closing at 8 PM during the COVID-19 pandemic, if events extend beyond that time, they wouldn't be able to participate.

6.3.9 Incentive Satisfaction

Customer A said that when considering the price of electricity in California, incentives for participating are low when compared to other programs throughout the country. They feel the incentive structure should be proportional to the price of energy on the wholesale market.

Customer B thought the incentives were appropriate and didn't recommend a change to the amount or structure.

6.3.10 Penalties

Customer A feels very strongly that penalties should not be a part of any demand response program. They feel penalties deter plant managers from participating and ultimately lead to lower enrollment in the program. The energy manager mentioned their experience with third-party programs that absorb penalties, even when the utility program structure includes them, which gives them confidence to sign up more of their facilities.

Customer B felt like the penalties were too harsh, sometimes resulting in them losing more money than they could save because they frequently had difficulty executing their load reduction plan.

6.3.11 Overall Program Satisfaction

The plant manager for Customer A says they would rate their satisfaction with the program as high. The energy manager said they are happy to take advantage of any demand response opportunity for which they are eligible but are planning to move all facilities to third-party aggregator programs before the next demand response season starts. This is in large part due to the service, support, and tools they receive from the aggregators for all their facilities at once.

Customer B said they would rate the program a 7 out of 10, with 0 being not satisfied at all and 10 being extremely satisfied. They said they felt like the program was excellent, it just wasn't a good fit for them because they struggled to participate. The manager said they would absolutely rejoin the program in the future if they could meet the requirements and not face penalties.

6.3.12 Suggestions to Improve the Program

The plant manager for Customer A said their only complaint about the program was the risk of missing an event notification. They mentioned they were in contact with the SDG&E program manager and should receive a text message prior to future events, which should alleviate their only issue with the program. The energy manager said that providing higher incentives, removing penalties, and improving communication with plant managers and other key staff would improve the program. They also mentioned the value of the real-time energy data they receive from their third-party aggregator, which is not currently available through the utility website. This data is used not only to help improve their performance in demand response programs but identify other opportunities to increase productivity and lower costs.

Customer B suggested emailing or texting participants during hot weather periods when there is a high likelihood of the program being dispatched. This would give them time to plan to have someone on site that was able to execute their load reduction plan and not be caught off guard.

6.4 Base Interruptible Program Conclusions and Recommendations

Conclusion 1

20-minute event notifications are often not enough time for customers to enact their load reduction plan, particularly for those that include manual shutdown procedures like the two customers interviewed.

- ***Recommendation 1***
  Send customers earlier notices when there is a high likelihood of an event.

Conclusion 2

Both customers interviewed would prefer receiving notifications via text message as opposed to an email or phone call. This would improve their response time for events, make it less likely to miss the notification, and increase their performance.

- ***Recommendation 2***
  Allow customers to receive notifications through their preferred channels, including text message.

Conclusion 3

Some customers are not a good fit for BIP because of their operating schedules, particularly those that do not operate after 4 or 5 PM.

- ***Recommendation 3***
  Complete a simple load analysis to see which customers are operational after 5 PM. This will help narrow recruitment efforts and target those customers that have load available to curtail during event hours.

Conclusion 4

Customers feel the penalties for under- or non-performance are too harsh and outweigh the potential incentives for participating.

- ***Recommendation 4***
  Assess the incentive and penalty structures to identify the appropriate levels that lower customer risk while maintaining reliability of the resource. This may require lowering both the incentive and penalty amounts.

7 Appendix – Survey Questions

The following sections contain the survey and interview questions asked to respondents for each program.

7.1 AC Saver Day Of Survey Questions

[DISPLAY ALL]
Thank you for agreeing to participate in this important study. During this survey, we may collect personal information. For more details including SDG&E's policy on how they use personal information please visit sdge.com/privacy.

Simply click the "▶" button below to begin.

Participation Awareness and Motivation

[ASK ALL]
[SINGLE RESPONSE]
Q1. According to our records, your household (business) is enrolled with SDG&E to participate in a program called AC Saver, which ran throughout the summer of 2020. You may also have heard the program referred to as "Summer Saver" or "AC Saver Day Of".

Are you aware of your participation in this program?

1. Yes
2. No
-99. Refused

[SHOW ALL]

AC Saver is a voluntary program offered by SDG&E that is designed to save energy during the summer season. Participants in the program have a control switch attached to their central air conditioning units. On selected hot days, SDG&E activates the switch, which limits how much energy the air conditioning unit uses.

[ASK Q1 = 1]
[SINGLE RESPONSE]
Q2. Which of the following names do you most associate with the program? Please choose one.

1. AC Saver
2. Summer Saver
3. AC Saver Day Of
4. Other: [OPEN-ENDED RESPONSE]
-99. Refused

[ASK Q1 = 1]
[MULTIPLE RESPONSE]
[RANDOMIZE Q3_1 TO Q3_5]
Q3. What motivated you to participate in the AC Saver program? (Select all that apply)

Q3_1. Earning an annual bill credit
Q3_2. Helping the environment
Q3_3. Doing my part to ensure grid reliability on hot days
Q3_4. Ease of participation since I don't use my air conditioner(s) very often
Q3_5. I was invited to participate after moving into a house (business) with an AC Saver switch already installed
Q3_6. [OPEN-ENDED RESPONSE]
Other:_____
Q3_98. Don't know

Event Notifications

[ASK ALL]
[SINGLE RESPONSE]
Q4. Did you receive event notifications for AC Saver event days in summer 2020?

1. Yes
2. No
-98. Don't know
-99. Refused

[ASK IF Q4 = 1]
Q5. On a scale of 0 to 10, where 0 means not satisfied at all and 10 means completely satisfied, were you satisfied with the timeliness of SDG&E's AC Saver event notifications?

[ASK ALL]
[SINGLE RESPONSE]
Q6. What is your preferred communication channel to get AC Saver event notifications from SDG&E?

Note: This question is for research purposes only. Your response does not constitute opting in or out of receiving communications from SDG&E through any particular channel.

1. Email
2. Text message
3. Phone call
4. Would prefer no notification
-98. Don't know
-99. Refused

[ASK IF Q1 = 1]

Q7. On a scale of 0 to 10, where 0 means you do not agree at all and 10 means you completely agree, to what extent do you agree with the following about the AC Saver program?

Q7_1. The number of AC Saver event days is reasonable

Q7_2. SDG&E keeps me informed about how the program works

Q7_3. I would recommend the AC Saver program to friends or family (friends or associates)

Q7_4. My typical routines are not affected on event days

Q7_5. The temperature in my home (business)remains comfortable on event days

[ASK IF Q7_1 < 5]
Q8. How many event days per year would be reasonable?

1. OPEN-ENDED RESPONSE

[ASK IF Q7_4 < 5]
Q9. How were your typical routines affected on event days?

1. OPEN-ENDED RESPONSE

Current Thermostat Setup

[ASK ALL]
[SINGLE RESPONSE]
Q10. Do you have Wi-Fi in your home (business)?

1. Yes
2. No
-98. Don’t know
-99. Refused

[ASK IF Q10 = 1]
[SINGLE RESPONSE]
Q11. Do you have a Wi-Fi enabled thermostat or smart thermostat? This type of thermostat is able to connect to the internet through your Wi-Fi network.

1. Yes
2. No
-98. Don’t know
-99. Refused

[ASK IF Q11 = 1]
[SINGLE RESPONSE]

[RANDOMIZE 1-4]
Q12. Which brand of Wi-Fi enabled thermostat or smart thermostat do you have in your household (business)?

1. Google Nest
2. Ecobee
3. Honeywell Home
4. Sensi
5. Other: [OPEN-ENDED RESPONSE]
-98. Don't know
-99. Refused

Incentive Level and Interest in Moving Programs

[ASK Q1 = 1]
Q13. On a scale of 0 to 10, where 0 means not satisfied at all and 10 means completely satisfied, how satisfied are you with your annual bill credits for participating in AC Saver?

[DISPLAY ALL]
Currently, the AC Saver program functions by activating a switch attached to your AC unit during event hours. This program may end in 2023; however, SDG&E offers a similar program utilizing smart thermostats instead of the switch on the AC unit. Additionally, the similar program allows customers to opt-out of the adjustment for individual events if they cannot participate.

[DISPLAY IF Q11 = 2 (CUSTOMERS THAT DON'T HAVE A SMART THERMOSTAT)]

A smart thermostat functions much the same as your current thermostat, except it can connect to Wi-Fi and has more programmable features. The similar program would require you to purchase and install a program-approved smart thermostat.

[DISPLAY IF Q11 = 1 & Q12 IS NOT = 1, 2, 3 (CUSTOMERS THAT DO NOT HAVE A PROGRAM-APPROVED SMART THERMOSTAT MANUFACTURER)]

You currently do not have an approved smart thermostat to participate in this program. The similar program would require you to purchase and install a program-approved smart thermostat.

[ASK ALL, SEPARATE SCREEN FROM ABOVE]

[THIS QUESTION IS DISPLAYED WITH A RANDOM STARTING ONE-TIME INCENTIVE AMOUNT AND DISPLAYS AGAIN WITH A HIGHER/LOWER VALUE UNTIL THE RESPONDENT REACHES AND RESPONDS AT ONE OF THE BOUNDS ($50/$125) OR THEY GIVE A RESPONSE THAT IS DIFFERENT THAN THEIR INITIAL RESPONSE, e.g., YES->YES->NO, OR NO->YES]

[SINGLE RESPONSE]

Q14. Suppose that the smart thermostat program offers a one-time incentive of [$50, $65, $80, $95, $110, $125] for each thermostat you enroll (maximum two (four)) and a recurring incentive of [INCENTIVE] for each year that you remain on the program.

Would you be interested in moving to this smart thermostat program?

Note: This question is for research purposes only. Your answers will not affect your enrollment in AC Saver.

1. Yes
2. No

[ASK IF RESPONDENTS SAY "NO" TO THE HIGHEST $125 INCENTIVE LEVEL]
[MULTIPLE RESPONSE]
[RANDOMIZE 1-5]
Q15. Why wouldn't you be interested in joining the smart thermostat program? (Select all that apply)

1. I don't want to change my thermostat
2. I need to know more information before I join
3. The incentive levels are not high enough
4. I like the current AC Saver program
5. Installing a smart thermostat is a technical issue for me
6. Other: [OPEN-ENDED RESPONSE]

[ASK IF Q15 = 2]
Q16. What additional information would you like to know about the smart thermostat program?

1. OPEN-ENDED RESPONSE

[ASK ALL]
Q17. What additional thoughts or concerns would you have about participating in the smart thermostat program?

1. OPEN-ENDED RESPONSE

Satisfaction with AC Saver

[ASK IF Q1 = 1]
Q18. On a scale of 0 to 10, where 0 means not satisfied at all and 10 means completely satisfied, how satisfied are you overall with the AC Saver program?

[ASK IF Q18 < 5]
Q19. Why are you not satisfied with participating in the AC Saver program?

1. OPEN-ENDED RESPONSE

Incentive Fulfillment

[ASK ALL]
[ASK IF COMMERCIAL = 1]
Q20. Thank you for your help! Please provide an email address where you would like to receive your $40 Amazon gift card. You can also designate the American Red Cross or another charity to receive $40 on your behalf. Your Amazon gift card should arrive within 1-4 weeks. You may also choose to decline the incentive.

1. Email: [OPEN-ENDED RESPONSE]
2. I prefer to donate my incentive to the American Red Cross
3. I prefer to donate my incentive to another charity
4. I prefer to decline the incentive

[ASK IF Q20 = 3]
Q21. Please provide the name of the charity you wish to receive your incentive on your behalf.

1. [OPEN-ENDED RESPONSE]

[ASK IF RESIDENTIAL = 1]
Q22. Thank you for your help! Please provide an email address where you would like to receive your $15 Amazon gift card. You can also designate the American Red Cross or another charity to receive $15 on your behalf. Your Amazon gift card should arrive within 1-4 weeks. You may also choose to decline the incentive.

1. Email: [OPEN-ENDED RESPONSE]
2. I prefer to donate my incentive to the American Red Cross
3. I prefer to donate my incentive to another charity
4. I prefer to decline the incentive

[ASK IF Q22 = 3]
Q23. Please provide the name of the charity you wish to receive your incentive on your behalf.

1. [OPEN-ENDED RESPONSE]

Thank you very much for your time today!

7.2 AC Saver Day Ahead Participant Survey Questions

[DISPLAY ALL]
Thank you for agreeing to participate in this important study.

Simply click the "▶" button below to begin.

Participation Awareness and Motivation

[ASK ALL]

[SINGLE RESPONSE]

Q1. According to our records, your household is enrolled with SDG&E to participate in a program called AC Saver Thermostat, which ran throughout the summer of 2020. You may also have heard the program referred to as “Community Energy Savings”, “Rush Hour Rewards”, or “eco+”.

Are you aware of your participation in this program?

1. Yes
2. No

[SHOW ALL]
The AC Saver Thermostat Program is a voluntary program offered by SDG&E that is designed to save energy during the summer season. On selected hot days, SDG&E changes the set point on customers’ smart thermostats, which limits how much energy the air conditioning unit uses.

[ASK Q1 = 1]
[SINGLE RESPONSE]
[RANDOMIZE Q2_1 TO Q2_4]
Q2. Which of the following names do you most associate with the program? Please choose one.

1. AC Saver Thermostat
2. Community Energy Savings
3. Rush Hour Rewards
4. eco+
5. Other: [OPEN-ENDED RESPONSE]

[ASK Q1 = 1]
[SINGLE RESPONSE]
[RANDOMIZE Q3_1 TO Q3_6]
Q3. How did you first hear about the program?

1. From my smart thermostat app
2. From an e-mail from my thermostat manufacturer
3. I saw it on SDG&E’s website
4. Through online or social media advertisements
5. I heard about it from someone I know
6. SDG&E sent me information about the program
7. Other: [OPEN-ENDED RESPONSE]

[ASK Q1 = 1]
[MULTIPLE RESPONSE]
[RANDOMIZE Q4_1 TO Q4_5]
Q4. What motivated you to participate in the AC Saver Thermostat Program? (Select all that apply)

Q4_1. Earning bill credits
Q4_2. Helping the environment
Q4_3. Doing my part to ensure grid reliability on hot days

Q4_4. Ease of participation since I don't use my air conditioner(s) very often
Q4_5: I was given a free smart thermostat from SDG&E
Q4_6. [OPEN-ENDED RESPONSE]
Other:_____
Q4_98. Don't know

Event Notifications

[ASK ALL]
[SINGLE RESPONSE]
Q5. Have you ever received a notification before an AC Saver Thermostat day?

1. Yes
2. No
-98. Don't know

[ASK IF Q5 = 1]
Q6. On a scale of 0 to 10, where 0 means not satisfied at all and 10 means completely satisfied, were you satisfied with the timeliness of AC Saver Thermostat notifications?

[ASK IF Q5 = 2, 98]
[SINGLE RESPONSE]
Q7. Would you like to receive notifications for AC Saver Thermostat days in the future?

1. Yes
2. No
-98. Don't know

[ASK IF Q5 = 1 OR Q7 IS NOT = 2]
[SINGLE RESPONSE]
Q8. What is your preferred communication channel to get AC Saver Thermostat day notifications?

Note: This question is for research purposes only. Your response does not constitute opting in or out of receiving communications from SDG&E through any particular channel.

1. Email
2. Text message
3. Phone call
-98. Don't know

Satisfaction with AC Saver Thermostat

[ASK IF Q1 = 1]
Q9. On a scale of 0 to 10, where 0 means you do not agree at all and 10 means you completely agree, to what extent do you agree with the following about the AC Saver Thermostat program?

Q9_1. The number of AC Saver Thermostat days is reasonable

Q9_2. SDG&E keeps me informed about how the program works

Q9_3. I would recommend the AC Saver Thermostat program to friends or family

Q9_4. My typical routines are not affected on AC Thermostat days

Q9_5. The temperature in my home remains comfortable on AC Thermostat days

[ASK IF Q9_1 < 5]
Q10. How many AC Thermostat days per year would be reasonable?

1. OPEN-ENDED RESPONSE
-99. Refused

[ASK IF Q9_4 < 5]
Q11. How were your typical routines affected on AC Thermostat days?

1. OPEN-ENDED RESPONSE
-99. Refused

[ASK IF Q1 = 1]
Q12. On a scale of 0 to 10, where 0 means not satisfied at all and 10 means completely satisfied, how satisfied are you overall with the AC Saver Thermostat Program?

[ASK IF Q12 < 5]
Q13. Why are you not satisfied with participating in the AC Saver Thermostat program?

1. OPEN-ENDED RESPONSE

Opting Out of Events

[ASK IF Q1 = 1]
[SINGLE RESPONSE]
Q14. The AC Saver Thermostat Program allows customers to opt-out of the adjustment on individual days if they cannot participate.

Have you opted-out of an AC Saver Thermostat day in the past 12 months?

1. Yes
2. No

-98. Don't know

[ASK IF Q14 = 1]
[SINGLE RESPONSE]
Q15. Was your home uncomfortably warm when you opted out of the AC Saver Thermostat adjustment(s)?

1. Yes
2. No
-98. Don't know

[ASK IF Q14 = 1]
[MULTIPLE RESPONSE]
[RANDOMIZE Q16_1 TO Q16_3]
Q16. Did any of the following potential factors also contribute to your decision to opt-out of the adjustment(s)? (Select all that apply)

1. Impact to normal household routine
2. Medical reasons
3. Unable to leave the home during the adjustment period due to COVID-19
4. Other: [OPEN-ENDED RESPONSE]
5. None of the above
-98. Don't know

[ASK IF Q14 = 1]
[SINGLE RESPONSE]
Q17. Approximately how many AC Saver Thermostat days you have opted-out of in the past year?

1. 1 to 5
2. 6 to 10
3. 11 to 15
4. 16 to 20
-98. Don't know

Current Thermostat Usage

[ASK ALL]
[SINGLE RESPONSE]
[RANDOMIZE 1-4]
Q18. Which brand of Wi-Fi enabled thermostat or smart thermostat do you have in your household?

1. Google Nest
2. Ecobee
3. Honeywell Home
4. Sensi
5. Other: [OPEN-ENDED RESPONSE]
-98. Don't know

[ASK ALL]
[MULTIPLE RESPONSE]
[RANDOMIZE 1-5]
Q19. Which of these smart thermostat features do you use? (Select all that apply)

1. I program custom schedules for thermostat set points
2. I use the thermostat's smartphone app
3. In the summer, I raise the thermostat set point to energy-saving temperatures
4. I allow my smart thermostat to automatically adjust based on my habits
5. I use the smart thermostat no differently than my old thermostat
6. Other: [OPEN-ENDED RESPONSE]

-98. Don't know

[ASK IF Q19 = 2]
[SINGLE RESPONSE]
Q20. Approximately how often do you use your thermostat's smartphone app?

1. Daily
2. Weekly
3. Monthly
4. A couple times a year
5. Yearly
6. Other: [OPEN-ENDED RESPONSE]

-98. Don't know

Incentive Level

[ASK Q1 = 1]
Q21. On a scale of 0 to 10, where 0 means not satisfied at all and 10 means completely satisfied, how satisfied are you with the following payments for participating in AC Saver Thermostat?

Q21_1. The initial enrollment payment for registering each smart thermostat

Q21_2. The yearly participation payment

[ASK ALL]
[SINGLE RESPONSE]
[RANDOMIZE 1-3]
Q22. What is your preferred payment method to receive your incentive for participating in AC Saver Thermostat?

Note: This question is for research purposes only.

1. Bill credit
2. Electronic gift card
3. Pre-paid credit card
4. Check
5. Other: [OPEN-ENDED RESPONSE]

-98. Don't know

[ASK ALL]
[OPEN-ENDED RESPONSE]
Q23. If you would like to share any additional comments on the AC Saver Thermostat Program, please provide them below.

1. OPEN-ENDED RESPONSE
-99. Refused

Incentive Fulfillment

[ASK ALL]
[SINGLE RESPONSE]
Q24. Thank you for your help! Please provide an email address where you would like to receive your $15 Amazon gift card. You can also designate the American Red Cross or another charity to receive $15 on your behalf. Your Amazon gift card should arrive within 1-4 weeks. You may also choose to decline the incentive.

1. Email: [OPEN-ENDED RESPONSE]
2. I prefer to donate my incentive to the American Red Cross
3. I prefer to donate my incentive to another charity
4. I prefer to decline the incentive

[ASK IF Q24 = 3]
Q25. Please provide the name of the charity you wish to receive your incentive on your behalf.
1. [OPEN-ENDED RESPONSE]

Thank you very much for your time today!

7.3 AC Saver Day Ahead Non-Participant Survey

[DISPLAY ALL]
Thank you for agreeing to participate in this important study.
Simply click the "▶" button below to begin.

Rebate Customers

[ASK IF REBATE = 1]
[SINGLE RESPONSE]
Q1. SDG&E offers a voluntary energy saving program called AC Saver Thermostat. On selected hot days, SDG&E changes the set point on customers' smart thermostats, which limits how much energy an air conditioning unit uses. In turn, customers are offered an incentive for participating in the program.

You might also know this program as "Community Energy Savings" or "Rush Hour Rewards".

Are you aware of this SDG&E program?

1. Yes
2. No

[ASK IF Q1 = 1]
[SINGLE RESPONSE]
[RANDOMIZE Q2_1 TO Q2_8]
Q2. How did you learn about the AC Saver Thermostat Program?

1. SDG&E sent me information about the program
2. From my smart thermostat app
3. From an e-mail from the smart thermostat program
4. From online or social media advertisements
5. When I applied for my thermostat rebate
6. I saw it on SDG&E's website
7. Through my own research
8. I heard about it from someone I know
9. Other: [OPEN-ENDED RESPONSE]

-98. Don't know

[ASK Q1 = 1]
[MULTIPLE RESPONSE]
[RANDOMIZE Q4_1 TO Q4_5]
Q3. Why haven't you chosen to participate in the AC Saver Thermostat Program? (Select all that apply)

1. I need to know more information about the program
2. The incentive levels are not high enough
3. I don't want my thermostat adjusted on hot days
4. Signing up for the program is too difficult
5. I forgot about it/never got around to it
6. Other: [OPEN-ENDED RESPONSE]
7. I enrolled but then dropped out of the program later

-98. Don't know

[ASK IF Q3 = 7]
Q4. Why did you drop out of the AC Saver Thermostat Program?

1. OPEN-ENDED RESPONSE

-99. Refused

Current Smart Thermostat Setup

[ASK IF REBATE = 0]
[SINGLE RESPONSE]
Q5. Do you have a central air conditioning unit in your home?

1. Yes
2. No

[DISPLAY IF Q5 = 2] (VUPOINT: Customers who do not have a central AC should not continue with the survey or receive an incentive. These customers should also not count toward the completion quota. This should be the exit page for those customers.)

[T&T]

Thank you for your interest in completing the survey. Unfortunately, we are not collecting survey data from customers without central AC units at this time.

[ASK IF Q5 = 1]
[SINGLE RESPONSE]
Q6. Do you have a Wi-Fi enabled thermostat? This type of thermostat is able to connect to the internet through your Wi-Fi network and is sometimes referred to as a "smart thermostat".

1. Yes
2. No
-98. Don't know

[ASK IF Q6 = 1]
[SINGLE RESPONSE]
[RANDOMIZE 1-4]
Q7. Which brand of Wi-Fi enabled thermostat or smart thermostat do you have in your household?

1. Google Nest
2. Ecobee
3. Honeywell Home
4. Sensi
5. Other: [OPEN-ENDED RESPONSE]
-98. Don't know

Interest in Joining the Smart Thermostat Program

[START OF GABOR-GRANGER METHODOLOGY]

[DISPLAY ALL]
SDG&E currently offers an energy saving program called AC Saver Thermostat that utilizes customers' smart thermostats on hot days. In order to reduce demand on the electricity grid on hot days, participants in the program have their thermostat set point adjusted up to 4 degrees to reduce AC usage for no more than four hours at a time. The program has a maximum of 20 AC Saver Thermostat days each year and allows customers to opt-out of the adjustment for individual days if they cannot participate.

[DISPLAY IF Q6 = 2, 98 (CUSTOMERS THAT DON'T HAVE A SMART THERMOSTAT)]

A smart thermostat functions much the same as your current thermostat, except it can connect to your Wi-Fi and has more programmable features. The AC Saver Thermostat Program would require you to purchase and install a program-approved smart thermostat.

[DISPLAY IF Q7 IS NOT = 1, 2, 3 (CUSTOMERS THAT DO NOT HAVE A PROGRAM-APPROVED SMART THERMOSTAT MANUFACTURER)]

You currently do not have an approved smart thermostat to participate in this program. The AC Saver Thermostat Program would require you to purchase and install a program-approved smart thermostat

[ASK ALL, SEPARATE SCREEN FROM ABOVE]

[THIS QUESTION IS DISPLAYED WITH A RANDOM STARTING ONE-TIME INCENTIVE AMOUNT AND DISPLAYS AGAIN WITH A HIGHER/LOWER VALUE UNTIL THE RESPONDENT REACHES AND RESPONDS AT ONE OF THE BOUNDS ($50/$125) OR THEY GIVE A RESPONSE THAT IS DIFFERENT THAN THEIR INITIAL RESPONSE, e.g., YES->YES->NO, OR NO->YES]

[SINGLE RESPONSE]
Q8. Suppose that the AC Saver Thermostat Program offers a one-time incentive of [$50, $65, $80, $95, $110, $125] for each thermostat you enroll (maximum two) and a recurring incentive of [INCENTIVE] for each year that you remain on the program.
Would you be interested in joining this program?

Note: This question is for research purposes only. Your response will not enroll you in the program.

1. Yes
2. No

[END GABOR-GRANGER]

[ASK IF Q8_125 = 2 (RESPONDENTS SAY “NO” TO THE HIGHEST $125 INCENTIVE LEVEL)]
[MULTIPLE RESPONSE]
[RANDOMIZE 1-6]
Q9. Why wouldn’t you be interested in joining the AC Saver Thermostat Program? (Select all that apply)

1. I don’t want to change my thermostat
2. I need to know more information before I join
3. The incentive levels are not high enough
4. I don’t want my thermostat adjusted on hot days
5. Installing a smart thermostat is a technical issue for me
6. I am dissatisfied with the service provided by SDG&E
7. Other: [OPEN-ENDED RESPONSE]
-98. Don’t know

[ASK IF Q8_125 = 2 (RESPONDENTS SAY “NO” TO THE HIGHEST $125 INCENTIVE LEVEL)]
[SINGLE RESPONSE]

Q10. If SDG&E only adjusted the thermostat settings when there was a high risk of rolling black outs, would you then be interested in joining the program?

1. Yes
2. No

[ASK IF Q9 = 2]
[OPEN-ENDED RESPONSE]
Q11. What additional information would you like to know about the AC Saver Thermostat Program?

1. OPEN-ENDED RESPONSE
-99. Refused

ASK IF Q9 = 6]
[OPEN-ENDED RESPONSE]
Q12. Why are you dissatisfied with the service provided by SDG&E?

1. OPEN-ENDED RESPONSE
-99. Refused

[ASK ALL]
[OPEN-ENDED RESPONSE]
Q13. What additional thoughts or concerns do you have about participating in the AC Saver Thermostat Program?

1. OPEN-ENDED RESPONSE
-99. Refused

Incentive Fulfillment

[ASK ALL]
[SINGLE RESPONSE]
Q14. Thank you for your help! Please provide an email address where you would like to receive your $10 Amazon gift card. You can also designate the American Red Cross or another charity to receive $10 on your behalf. Your Amazon gift card should arrive within 1-4 weeks. You may also choose to decline the incentive.

1. Email: [OPEN-ENDED RESPONSE]
2. I prefer to donate my incentive to the American Red Cross
3. I prefer to donate my incentive to another charity
4. I prefer to decline the incentive

[ASK IF Q14 = 3]
Q15. Please provide the name of the charity you wish to receive your incentive on your behalf.
1. [OPEN-ENDED RESPONSE]

Thank you very much for your time today!

7.4 Capacity Bidding Program Non-Participant Survey

Introduction [For telephone interviewers only]

"Hi, my name is _____. I'm calling from VuPoint Research on behalf of SDG&E. We're collecting information from customers to improve energy saving programs offered by SDG&E. May I please speak with the person from your organization most familiar with your energy usage patterns and the decision to participate in SDG&E programs?"

[IF PERSON SPEAKING IS THE PERSON MOST FAMILIAR WITH PROGRAMS]
"Once you complete this short survey, you will receive a $50 Amazon gift card by email. If you are unable to accept an incentive for completing the survey, we will donate the money in your organization's name to the American Red Cross, or to another charity of your choice. The survey will take no more than 15 minutes, is this a good time?"

- [IF YES PROCEED WITH SURVEY]
- [IF NO]
  - "What is a good time and phone number to call back?"

[IF PERSON IS UNAVAILABLE]
"Can you please provide the contact information for the best person to speak with?"

- Name:
- Phone:
- Email:

[IF TRANSFERRED TO PERSON FAMILIAR WITH PROGRAMS]
"Hi, my name is _____. I'm calling from VuPoint Research on behalf of SDG&E. We're collecting information from customers to improve energy saving programs offered by SDG&E. Once you complete this short survey, you will receive a $50 Amazon gift card by email. If you are unable to accept an incentive for completing the survey, we will donate the money in your organization's name to the American Red Cross, or to another charity of your choice.

The survey will take no more than 15 minutes, is this a good time?

- [IF YES PROCEED WITH SURVEY]
- [IF NO]
  - "What is a good time and phone number to call back?"

[READ ALL]
Thank you for agreeing to participate in this important study. During this call we may collect personal information. For more details including SDG&E's policy on how they use personal information please visit sdge.com/privacy.

CBP Program Awareness

[ASK ALL]
[SINGLE RESPONSE]

Q1. SDG&E offers a voluntary energy saving program called the Capacity Bidding Program (CBP) that allows commercial customers to pledge a certain amount of electricity they are willing to reduce each month. On a select number of days when demand on the grid is high, SDG&E asks participants to reduce their usage. Participants earn incentives based on their ability to meet their pledged reduction.

The program runs from May through October. Events last between 2 and 4 hours and occur between 1 PM and 9 PM. Participants can choose to be notified the day an event occurs or the day before. The incentive levels vary based on the month and timing of the event day notifications.

Are you aware of this SDG&E program?

1. Yes
2. No

[ASK IF Q1 = 1]
[SINGLE RESPONSE, MATCH RESPONSE]
[RANDOMIZE 1-5]
[FOR INTERVIEWERS' INFORMATION: A third-party demand response aggregator is a commercial entity that provides demand response services and is appointed by the customer to assist with creating a demand response strategy to reduce their electric load. EXAMPLES: (ENGIE, NRG, GRIDPOINT, CPOWER, SIEMENS, ENERSPONSE AND IPKEYS)

Q2. How did you learn about the Capacity Bidding Program?

1. SDG&E told me about the program
2. From a third-party demand response aggregator
3. From online or social media advertisements
4. I saw it on SDG&E's website
5. I heard about it from someone I know
6. Other: [OPEN-ENDED RESPONSE]
-98. Don't know

Interest in Joining CBP and Barriers to Participation

[ASK ALL]
[SINGLE RESPONSE]
Q3. Does the Capacity Bidding Program sound like something you might be interested in joining?

Note: This question is for research purposes only. Your response will not enroll you in the program.

1. Yes
2. No

[ASK IF Q3= 2]

[READ ALL, MULTIPLE RESPONSE – CHECK ALL THAT APPLY]
[RANDOMIZE 1-5]
Q4. Why wouldn't you be interested in joining the Capacity Bidding Program? (Select all that apply)

1. I need to know more information before I join
2. I don't know how or where to reduce electric usage at my facility
3. My facility doesn't have the capability or staff necessary to reduce electric usage
4. It would impact business operations or customers' comfort to reduce my electric usage
5. I am dissatisfied with the service provided by SDG&E
6. Other: [OPEN-ENDED RESPONSE]
-98. Don't know

[ASK IF Q4 = 1]
[OPEN-ENDED RESPONSE]
Q5. What additional information would you like to know about the Capacity Bidding Program?

1. OPEN-ENDED RESPONSE
-99. Refused

[ASK IF Q4 = 3]
[OPEN-ENDED RESPONSE]
Q6. What is preventing your facility from having the capability to reduce electric usage during critical times when requested?

1. OPEN-ENDED RESPONSE
-99. Refused

[ASK IF Q4 = 4]
[OPEN-ENDED RESPONSE]
Q7. What would be the impact to your business operations when reducing electric usage?

1. OPEN-ENDED RESPONSE
-99. Refused

[ASK IF Q4 = 5]
[OPEN-ENDED RESPONSE]
Q8. Why are you dissatisfied with the service provided by SDG&E?

1. OPEN-ENDED RESPONSE
-99. Refused

[ASK IF Q3= 1]
[READ ALL, MULTIPLE RESPONSE – CHECK ALL THAT APPLY]
[RANDOMIZE 1-4]
Q9. If you were to join the Capacity Bidding Program, what would be your motivation? (Select all that apply)

1. Receiving payments for participation
2. Helping the environment
3. Doing my part to prevent rolling blackouts
4. Ease of participation since it is not difficult for my facility to reduce usage
5. Other: [OPEN-ENDED RESPONSE]

-98. Don't know

[ASK IF Q3= 1]
[SINGLE RESPONSE]
Q10. If you were to join the Capacity Bidding Program, do you foresee any issues to your business when reducing electrical usage?

1. Yes
2. No

-98. Don't know

[ASK IF Q10 = 1]
[OPEN-ENDED RESPONSE]
Q11. Describe the issues your business would face when reducing electrical usage?

1. OPEN-ENDED RESPONSE

-99. Refused

[ASK IF Q3= 1]
[SINGLE RESPONSE]
Q12. How many locations or facilities that are a part of your business would be potentially interested in joining the Capacity Bidding Program?

1. 1
2. 2 – 5
3. 6 – 10
4. 11 – 15
5. 16 – 20
6. Over 20

-98. Don't know

[ASK ALL]
[OPEN-ENDED RESPONSE]
Q13. Would you like to share any additional comments about the Capacity Bidding Program?

1. OPEN-ENDED RESPONSE

-99. Refused

Current Electrical Usage

[READ ALL]
In the Capacity Bidding Program, participants are paid incentives based on the amount of electricity they reduce when an event is called. Events are called from May through October between 1 PM and 9 PM.

[ASK ALL]
[MULTIPLE RESPONSE]
Q14. From May through October, which hours between 1 PM and 9 PM are you able to reduce electrical usage at your facility? (Select all that apply)

[ASK ALL]
[READ ALL, MULTIPLE RESPONSE]
Q15. How would these electrical loads be shut off or reduced?

1. Manually controlled by a switch
2. Scheduled or controlled through an energy management system
3. The equipment can receive communications and reduce automatically
4. Other [OPEN-ENDED RESPONSE]
-98. Don't know

[ASK ALL]
[READ ALL, MULTIPLE RESPONSE]
Q16. Upon receiving notice, how quickly could you shut off or reduce these loads?

1. 30 minutes or less
2. 1 hour or less
3. 24 hours or less
4. More than 24 hours
5. Other [OPEN-ENDED RESPONSE]
-98. Don't know

[ASK ALL]
[OPEN-ENDED RESPONSE]
Q17. How many events per year would be reasonable? (each event duration would be a minimum of two and maximum of four hours)

1. Other [OPEN-ENDED RESPONSE]
-98. Don't know

BIP Program Awareness

[ASK ALL]
[SINGLE RESPONSE]
Q18. SDG&E offers a separate voluntary energy saving program called the Base Interruptible Program (BIP) that provides a monthly bill credit to commercial customers that commit to reducing their energy consumption to a predetermined level when extreme temperature conditions are impacting the system or during an emergency situation. Participating customers are notified no later than 20 minutes prior to an event. Monthly credits of up to $6.30 per kW are available.

Are you aware of this SDG&E program?

1. Yes
2. No

[ASK IF Q18 = 1]
[SINGLE RESPONSE, MATCH RESPONSE]
[RANDOMIZE 1-5]
[FOR INTERVIEWERS' INFORMATION: A third-party demand response aggregator is a commercial entity that provides demand response services and is appointed by the customer to assist with creating a demand response strategy to reduce their electric load. EXAMPLES: (ENGIE, NRG, GRIDPOINT, CPOWER, SIEMENS, ENERSPONSE AND IPKEYS)]

Q19. How did you learn about the Base Interruptible Program?
1. SDG&E told me about the program
2. From a third-party demand response aggregator
3. From online or social media advertisements
4. I saw it on SDG&E's website
5. I heard about it from someone I know
6. Other: [OPEN-ENDED RESPONSE]
-98. Don't know

Firmographics

[Allow respondents to skip all firmographic questions]

The remaining questions will help SDG&E ensure that we are reaching all customers. Your responses will remain confidential and will be summarized with responses from others.

[ASK ALL]
[MULTIPLE RESPONSE]
Q20. What hours of the day is your facility usually operational? (Select all that apply)

[ASK ALL]
[SINGLE RESPONSE, IF YES, ASK IF THEY OPERATE AT THE SAME CAPACITY AS WEEKDAYS]
Q21. Does your business operate on weekends?

1. Yes, at the same capacity as weekdays
2. Yes, at increased capacity compared to weekdays
3. Yes, but at reduced capacity compared to weekdays
4. No, we do not operate on weekends

[ASK ALL]
[SINGLE RESPONSE]
Q22. Does your business lease or own your facility?

1. Lease
2. Own
-98. Don't know
-99. Skipped

[ASK ALL]
[SINGLE RESPONSE]
Q23. Approximately how many square feet are heated or cooled in your facility?

1. Less than 1,000
2. 1,000 – 5,000
3. 5,000 – 10,000
4. 10,000 – 15,000
5. 15,000 – 20,000
6. Over 20,000
-98. Don't know
-99. Skipped

[ASK ALL]
[SINGLE RESPONSE]
Q24. How many locations does your organization have in SDG&E territory?

1. 1
2. 2 – 5
3. 6 – 10
4. 11 – 15
5. 15 – 20
6. More than 20
-98. Don't know
-99. Skipped

SDG&E Communications

[ASK ALL]
[MULTIPLE RESPONSE, MATCH RESPONSE TO TABLE – CHECK ALL THAT APPLY]
[RANDOMIZE 1-6]
Q25. Generally, how do you learn about energy saving programs offered by SDG&E? (Select all the apply)

1. SDG&E informs me about programs
2. From a third-party Demand Response Aggregator
3. From online or social media advertisements
4. On SDG&E's website
5. Through my own research
6. From someone I know
7. Other: [OPEN-ENDED RESPONSE]
-98. Don't know

[ASK ALL]
[READ ALL, MULTIPLE RESPONSE – CHECK ALL THAT APPLY]
Q26. What is your preferred communication channel(s) to learn about new energy saving programs offered by SDG&E? (Select all that apply)

Note: This question is for research purposes only. Your response does not constitute opting in or out of receiving communications from SDG&E through any particular channel.

1. Email
2. Text
3. Phone call from an SDG&E representative
4. Mail
5. From a third-party energy services provider
6. I would prefer not to learn about new energy saving programs

-98. Don't know

Incentive Fulfillment

[ASK ALL]
[SINGLE RESPONSE]
Q27. Thank you for your help! Please provide an email address where you would like to receive your $50 Amazon gift card. You can also designate the American Red Cross or another charity to receive $50 on your behalf. Your Amazon gift card should arrive within 1-4 weeks. You may also choose to decline the incentive.

1. Email: [OPEN-ENDED RESPONSE]
2. I prefer to donate my incentive to the American Red Cross
3. I prefer to donate my incentive to another charity
4. I prefer to decline the incentive

[ASK IF Q27 = 3]

Q28. Please provide the name of the charity you wish to receive your incentive on your behalf.

1. [OPEN-ENDED RESPONSE]

Thank you very much for your time today!

7.5 Capacity Bidding Program Interview Questions

Introduction

Thank you for your time today. We'd like to ask you a series of questions on topics surrounding your experience as a third-party aggregator for SDG&E's Capacity Bidding Program. The purpose of our interview is to gather information to help SDG&E shape and improve the program in the future.

Please note that all information discussed during this interview will be anonymized, compiled, and reviewed carefully for confidentiality prior to inclusion in any public reports. During the course of our discussion, please feel free to highlight any sensitive information that we should ensure stays private.

Let me know if any question doesn't apply to you or if we should follow up with someone else as we go through the interview.

During this call we may collect personal information. For more details including SDG&E's policy on how they use personal information please visit sdge.com/privacy.

Do you have any questions for me before we get started?

(REQUEST RECORDING PERMISSION IF PLANNING TO RECORD)

Business

Q1. First, could you briefly describe what your company does and how long you've been operating?

Q2. What are your responsibilities related to SDG&E's Capacity Bidding Program?

Q3. What other demand response programs do you participate in (probe: DRAM, other IOUs' CBP/BIP)?

Program Participation

Q4. How long has your company been an aggregator for the SDG&E Capacity Bidding Program?

Q5. What about SDG&E's program makes it a good fit for your business and your customers?

Q6. Are there any advantages SDG&E's program has for your business over others that you participate in or know of? What are the disadvantages? (probe: are too many events called, incentive structure, lack of elect option like in PG&E CBP, etc.)

Marketing and Recruitment

One of SDG&E's primary goals for this process evaluation is to increase CBP enrollment. They are interested in your experience with marketing and recruiting customers into the program. None of this information will be shared with any other company and all responses will be anonymized for the report.

Q7. Please describe your marketing and recruitment strategy for the SDG&E Capacity Bidding Program. What forms of outreach do you use (Probe: direct mail, advertisement, cold-calling)?

Q8. Are there marketing strategies that have worked better than others to reach customers suitable for the program? Are there challenges recruiting enough customers?

Q9. Do you have dedicated sales teams in SDG&E territory that have goals for selling CBP? Why or why not?

Q10. Have customers contacted you directly to be enrolled in CBP? How do these customers generally find you (Probe: SDG&E website, your website, word of mouth)?

Q11. What makes a customer a good fit for your CBP portfolio? How do you target those customers?

Q12. Is your company actively trying to sign up new customers to join CBP? (If “no”) Why not?

Customer Enrollment

Q13. Please describe your customer enrollment process.

Q14. What about this process has worked well? What have been some challenges you have faced during customer recruitment and enrollment? How have you resolved those challenges? Is there anything SDG&E could do to help overcome those challenges?

Q15. How are monthly nominations established and submitted? Does the customer provide input into how this is established or do you provide a recommendation? Are some customers more engaged in this process than others?

Q16. Are monthly nominations reevaluated between program years and months?

Q17. How do you choose which CBP Product offering (notification, event hours) is best for each customer? Do you revisit which Product is selected for each customer?

Prohibited Resources

Q18. The Capacity Bidding Program prohibits the use of backup generators for the purpose of reducing load during a demand response event. How do you manage educating your participants on the prohibition and their DR PR attestations (probe: What is the impact of the prohibition on your business operations for SDG&E)?

Q19. Have you received feedback from your customers on the prohibition and the requirements around it?

Notifications

Q20. The Capacity Bidding Program has two different notification options. The first is a day-ahead option where you receive notification of an event no later than 5 PM the day prior to the event. The second is a day-of option where you receive notification no later than 40 minutes prior to the event. Which of these two notification options are you currently participating in?

Q21. How do you decide which notification option to choose for your customers?

Q22. Please describe how you receive and relay these notifications to your customers, including any differences between the two options. (Probe: are the day-of notifications timely

enough? How much heads up time are you able to give customers on the day-of product?) What about the notification system works well? Are there things that could be improved?

Event Dispatch Procedures

Q23. Are customers' load controlled through Auto DR, manual shutdown, or a combination of the two? Do your customers use Energy Management Systems to control load during an event? Do you help customers manage these systems?

Q24. [If responded "yes" to Q22 customers' load being controlled manually] What is your procedure for controlling customers' load that require manual shutdown (probe: do you provide a load reduction plan, do you call them prior to an event, do you monitor their usage in real-time)?

Q25. Have there been any challenges with dispatch? How were these issues resolved?

Customer Baseline

Q26. SDG&E's Capacity Bidding Program uses a 10-day average baseline calculation for settlement. What is your opinion of the 10-day average baseline?

Q27. The baseline calculation includes an optional Day-Of Adjustment. Do you elect to use the Day-Of Adjustment? If so, how do you determine when to use it?

Q28. What is your opinion of the Day-Of Adjustment (probe: is the adjustment cap of +/- 40% appropriate)?

Energy Payments and Non-Performance Penalties

Q29. Energy payments are paid in full for delivering 100% or more of the nominated load reduction, prorated between 75 - 100% of nominated load reduction, and zero payment for delivering between 50 - 74.99% of the nominated load reduction. What is your opinion of the energy payment structure?

Q30. If you deliver less than 50 percent of the nominated load reduction, there is a penalty equal to 50 percent minus the fraction of nominated load delivered multiplied by the unadjusted event capacity payment amount. Do you believe the penalty structure and amount are fair?

Q31. Have you had issues with non-performance from a specific set of customers? How do you deal with underperformance? (probe: are customers nominations reevaluated, Product/notification/event hours option reevaluated, etc.)

Customer Incentives

Q32. How are customer incentives structured and distributed?

Q33. How long after an event does it take for customers to receive their incentive?

Q34. Are customers satisfied with the incentive structure and incentive amounts?

Customer Support and Satisfaction

Q35. Please describe the support you provide to customers that participate in the Capacity Bidding Program.

Q36. Have there been any challenges working with customers or common concerns specific to this program (probe: number of events)?

Q37. How satisfied are your customers with SDG&E's Capacity Bidding Program? Have your customers opted out of CBP to join DRAM? What would it take for those customers to re-enroll in CBP?

Partnership with SDG&E

Q38. Please describe your relationship working with SDG&E as an aggregator for the Capacity Bidding Program. What has worked well? What challenges have you faced and how were they resolved?

Q39. Is there anything else you think is important for us to discuss, or that you think we've missed?

7.6 Base Interruptible Program Participant Interview Questions

Introduction

Thank you for your time today. We'd like to ask you a series of questions about various topics surrounding your experience as a participant in SDG&E's Base Interruptible Program in order to gain valuable understanding that can help shape and improve the program in the future.

Let us know if any question doesn't apply to you or if we should follow up with someone else as we go through the interview.

During this call we may collect personal information. For more details including SDG&E's policy on how they use personal information please visit sdge.com/privacy.

Do you have any questions for me before we get started?

(REQUEST PERMISSION TO RECORD THE INTERVIEW)

Business Characteristics

Q1. First, could you briefly tell me what your business does and your typical operating hours?

Q2. What is your role(s) and primary responsibility(ies)?

Q3. What are your responsibilities related to participation in the Base Interruptible Program?

Program Awareness and Participation

Q4. How long has your company been participating in the Base Interruptible Program?

Q5. How did you first learn about the program (Probe: SDG&E audit)?

Q6. What about the program led you to join? What are the benefits to you for participating in the program? Are there any non-financial benefits (probe: do you have environmental stewardship goals, do you like knowing your participation helps prevent rolling blackouts)?

Program Application Process

Q7. Were you involved in the program application process? If so, please describe your experience and any challenges, and overall satisfaction with the process. Is there anything you would have changed that would have made the application process better?

Load Reduction Plan and Firm Service Level

Q8. Please describe the process working with SDG&E to establish your load reduction plan. How long did the process take? Did the planning interrupt business operations or require in-depth investigation into options (trial and error, etc.)? What about the process worked well? Were there any challenges or steps in the process that could be improved?

Q9. Has your load reduction plan been revisited or changed over time? If so, what was the process to reevaluate and come up with a new plan?

Q10. Has your Firm Service Level been reevaluated?

Prohibited Resource Policy

Q11. The Base Interruptible Program prohibits the use of certain technologies to be used to reduce load during a demand response event, including diesel, natural gas, gasoline, propane, or liquefied petroleum gas backup generators. Do you have any of the prohibited resources on site?

Q12. Has this limitation had an impact your load reduction plan or your experience in the program? If so, how have you adapted to this limitation during an event to meet your firm service level?

Event Notifications

Q13. Event notifications are provided at minimum 20 minutes before a scheduled event. How much notice do you typically get before an event? Is this adequate time to execute your load reduction plan?

Q14. What do you like about how event notifications are handled? Is there anything about the event notification process that could be improved?

Q15. How many events are called per year? How do you feel about the number of events?

(Halfway)

Actions Taken to Reduce Usage

Q16. Please describe your load reduction plan and how you execute the plan upon receiving notification of an event.

Q17. Which steps of the load reduction plan are automated? Which steps are manual?

Q18. Have you experienced any difficulties executing your load reduction plan? What about the plan works best?

Q19. Have you ever not reached your firm service level during an event? If so, what happened? What steps have you taken to avoid this from happening again in the future (probe: changes to the load reduction plan or response to event notifications)?

Q20. (If answered “yes” to Q19) Did SDG&E follow up with you when you did not reach your Firm Service Level?

Effects on Business Operations

Q21. Events are typically called during the 4PM – 9PM window. How much of an impact do events have on normal business operations (manufacturing/processes, employees, customers if applicable)? Do events starting earlier have a greater effect on business operations than events starting later in the window (probe: How does the difference in timing affect your business operations)?

Q22. What actions do you take after an event to return back to normal operation (probe: if they shut down and don’t return until the next day, ask to explain how/why)?

Q23. Do you have other operations, buildings, or facilities that are not currently participating in the Base Interruptible Program that could join to maximize your incentive? How can SDG&E help (either through Account Executive or Program Advisor) identify which other buildings/plants to include?

Incentive Satisfaction

Q24. The Base Interruptible Program provides a monthly bill credit of $6.30 per kW of potential load reduction identified in the load reduction plan. Please describe your satisfaction with the incentive level.

Q25. What do you like about the structure of the incentives? Is there anything you would change about the incentive structure?

Penalties

Q26. There is a $4.50/kWh penalty for excess energy use during a curtailment event above your Firm Service Level. Do you believe the penalty structure and amount are fair?

Satisfaction with Program Participation

Q27. Please rate your satisfaction with the Base Interruptible Program overall on a scale of 0-10 with 0 being not satisfied at all and 10 being extremely satisfied. What are your favorite aspects about the program?

Suggestions to Improve the Program

Q28. What kind of associate or colleague would you recommend this program to?

Q29. Is there anything else SDG&E could do to show support and appreciation for the environmental benefits resulting from your participation in the program (probe: a plaque to hang in the lobby or a letter from SDG&E's President)?

Q30. Do you have any suggestions to improve the program overall, or any specific aspect of the program that we haven't discussed?

Q31. Is there anything else you think is important for us to discuss, or that you think we've missed?

7.7 Base Interruptible Program Unenrolled Non-Participant Interview Questions

Introduction

Thank you for your time today. We'd like to ask a series of questions about various topics surrounding your experience as a former participant in SDG&E's Base Interruptible Program. Your responses will provide valuable understanding that can help shape and improve the program in the future.

Let us know if any question doesn't apply to you or if we should follow up with someone else as we go through the interview.

During this call we may collect personal information. For more details including SDG&E's policy on how they use personal information please visit sdge.com/privacy.

Do you have any questions for me before we get started?

(REQUEST RECORDING PERMISSION IF PLANNING TO RECORD)

Business Characteristics

Q1. First, could you briefly tell me what your business does and your typical operating hours?

Q2. What is your role(s) and primary responsibility(ies)?

Q3. What were your responsibilities related to participation in the Base Interruptible Program?

Program Awareness and Participation

Q4. How long had your company been a participant in the Base Interruptible Program when you left the program (for each account, if applicable)?

Q5. How did you first hear about the program (probe: SDG&E audit)?

Q6. What about the program led you to join? What were the benefits of you participating in the program? Were there non-financial benefits (probe: do you have environmental stewardship goals, do you like knowing your participation helps prevent rolling blackouts)?

Q7. Why are you no longer a participant in the Base Interruptible Program?

Program Application Process

Q8. Were you involved in the program application process? If so, please describe your experience and any challenges, and overall satisfaction with the process. Is there anything you would have changed that would have made the application process better?

Load Reduction Plan and Firm Service Level

Q9. Please describe the process working with SDG&E to establish your load reduction plan. How long did the process take? Did the planning interrupt business operations or require in-depth investigation into options (trial and error, etc.)? What about the process worked well? Were there any challenges or steps in the process that could be improved?

Q10. Was your load reduction plan ever revisited or change over time? If so, what was the process to reevaluate and come up with a new plan?

Q11. Was your Firm Service Level ever reevaluated?

Prohibited Resource Policy

Q12. The Base Interruptible Program prohibits the use of certain technologies to be used to reduce load during a demand response event, including diesel, natural gas, gasoline, propane, or liquefied petroleum gas backup generators. Do you have any of the prohibited resources on site?

Q13. Did this limitation have an impact on your load reduction plan or your experience in the program? If so, how did you adapt to this limitation during an event to meet your firm service level?

Event Notifications

Q14. Event notifications are provided at minimum 20 minutes before a scheduled event. How much notice did you typically get before an event? Was this adequate time to execute your load reduction plan?

Q15. What did you like about how event notifications are handled? Is there anything about the event notification process that could be improved?

Q16. When you were a participant, how many events were typically called per year? How did you feel about the number of events?

Actions Taken to Reduce Usage

Q17. Please describe your load reduction plan and how you executed the plan upon receiving notification of an event.

Q18. Which steps of the load reduction plan were automated? Which steps were manual?

Q19. Did you experience any difficulties executing your load reduction plan? What about the plan worked best?

Q20. Did you ever not reach your firm service level during an event? If so, what happened? What steps did you take to avoid that from happening again (changes to the load reduction plan or response to event notifications)?

Q21. (If answered "yes" to Q19) Did SDG&E follow up with you when you did not reach your Firm Service Level?

Effects on Business Operations

Q22. Events are typically called during the 4PM – 9PM window. How much of an impact did events have on normal business operations (manufacturing/processes, employees, customers if applicable)? Did events starting earlier have a greater effect on business operations than events starting later in the window (probe: How did the difference in timing affect your business operations)?

Q23. What actions did you take after an event to return back to normal operation (probe: if they shut down and don't return until the next day, ask to explain how/why)?

Q24. Did you have other operations, buildings, or facilities that were not participating in the Base Interruptible Program that could have joined to maximize your incentive? How could SDG&E have helped (either through Account Executive or Program Advisor) identify which other buildings/plants to include?

Incentive Satisfaction

Q25. The Base Interruptible Program provides a monthly bill credit of $6.30 per kW of potential load reduction identified in the load reduction plan. Please describe your satisfaction with the incentive level.

Q26. What did you like about the structure of the incentives? Is there anything you would change about the incentive structure?

Penalties

Q27. There is a $4.50/kWh penalty for excess energy use during a curtailment event above your Firm Service Level. Do you believe the penalty structure and amount are fair?

Satisfaction with Program Participation

Q28. Please rate your satisfaction with the Base Interruptible Program overall on a scale of 0-10 with 0 being not satisfied at all and 10 being extremely satisfied. What were your favorite aspects about the program?

Q29. Do you see yourselves rejoining the Base Interruptible Program in the near future? Why or why not?

Q30. (If "no" to Q29) What would it take for you to rejoin the program?

Suggestions to Improve the Program

Q31. What kind of associate or colleague would you recommend this program to?

Q32. Is there anything else SDG&E could do to show support and appreciation for the environmental benefits resulting from their customers' participation in the program (probe: a plaque to hang in the lobby or a letter from SDG&E's President)?

Q33. Do you have any suggestions to improve the program overall, or any specific aspect of the program that we haven't discussed?

Q34. Is there anything else you think is important for us to discuss, or that you think we've missed?

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