SoCalGas 2010-2011 Residential Program Process Evaluation

Final Report

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Executive Summary

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- Research Into Action
- Energy Market Innovations (EMI)
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Figure 1 shows the SoCalGas programs covered in this evaluation, along with the original program implementation budgets as provided in the Program Implementation Plans (PIP).

Figure 1: SoCalGas Residential Programs and Implementation Budgets

SoCal Gas	Total 2010-2012 Program Cycle Budget	Total Administrative Cost	Total Marketing and Outreach	Total Direct Implementation
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The evaluation began with a kick-off meeting with SoCalGas program staff and management in Downey, California in May 2011. A final evaluation plan was delivered to SoCalGas in August 2011. Data collection activities began shortly thereafter and continued through January 2012.

Researchable Issues

The original research issues established for this evaluation by SoCalGas include the following:

- **Understanding.** General understanding and past experience with the Residential Programs

- **Communication/Awareness.** How customers first learned about the program and the best channels to use to reach these customers
- **Point of Entry.** Ease of application process, barriers to participation, suggestions to make participation easier
- **Participation Experience.** Satisfaction with services received, participation drivers, timeliness, suggestions for improvement, customer preferences for online tracking and other potential program features
- **Impact / Effectiveness.** Satisfaction with program outcome, savings, other benefits customer perceive from participation
- **Additional Offerings.** Suggestions for other programs or services to help meet customer energy management needs.

In the course of developing the final evaluation research plan, the following additional research issues were identified that are applicable to all the SoCalGas Residential Programs:

- Is there a consistent and recognized branding across programs?
- Are there programs or program elements that are working at cross-purposes with each other?
- Are there significant overlaps across programs?
- Are the programs reaching all customer types, and what might be needed to reach them?
- Are there elements of programs that can become more standardized?
- Where are the growth areas within the residential market and residential efficiency potential, and how can the programs address these areas?
- What are the characteristics of the participants in terms of geography and demographics (GIS analysis)?
- How do participation patterns compare with areas and customer groups outside the program (GIS analysis)?
- Are important segments of the residential population not participating in any program?
- How are the programs performing as determined by their PPMs? What information should be routinely tracked in order to measure progress relative to the Program Performance Metrics (PPMs) established for these programs?

Additional researchable issues for specific programs are included as part of the discussion of the individual program results. These research issues formed the basis evaluation. All of the data collection and analysis activities were designed to address them.

Data Collection and Analysis Methods

The evaluation utilized several data collection and analysis methods:

- **Participant phone surveys.** For programs with participant data that included customer names and phone numbers, we fielded a phone survey to collect information

on multiple topics related to the process evaluation research issues discussed above. A total of 754 participant phone surveys were completed.

- **General population survey.** A general population survey was fielded to collect information on non-participant customers' awareness, knowledge and attitudes (AKA) toward energy efficiency. This survey also was used to identify a sample of customers who participated in some of the programs (e.g., Lighting, HEER) where detailed participant data are not available through SoCalGas. A total of 250 general population phone surveys were completed.
- **In-depth interviews**. In addition to the phone surveys, a complementary data collection activity was in-depth interviews of key market actors involved with the programs. The in-depth interviews were less structured than the phone surveys. This more flexible approach allowed the interviewer to ask follow-up questions and collect additional detail on important evaluation topics. A total of 59 in-depth interviews were completed, in addition to interviews with SoCalGas program and management personnel.
- **Best practices assessment.** An additional evaluation component was a comparison of each program to industry best practices. The primary source for determining best practices is the energy efficiency Best Practices Study benchmarking tool found at www.eebestpractices.com. The evaluation team also relied on the team members' experience with evaluating similar programs in other jurisdictions. This allowed the team to provide more current best practices for comparison, and to assess some of the newer, more innovative programs (e.g., Whole House Performance) that were not explicitly addressed in the original Best Practices Study.
- **GIS analysis.** One of the innovative elements of this evaluation is the GIS analysis that was conducted on the SoCalGas customer data. For this analysis, the entire SoCalGas customer database was geo-coded, along with US Census data on income, race, and dwelling type. This allowed the evaluation team to compare participation patterns by geography, as well as identify the distribution of program dollars (both for the Residential Programs and the low income program) across the income levels of SoCalGas customers. The matching of customer participation data with Census demographic data helped the evaluation team assess how well the program was covering targeted markets and demographics and identify any population sub-groups the programs might miss.

Summary of Results

The following are some portfolio-level observations and recommendations for the SoCalGas Residential Program Portfolio.

The Residential Program portfolio is providing good coverage of the SoCalGas residential customer base. As demonstrated by the GIS analysis, SoCalGas is providing good coverage both in terms of geography and household income. While the basic Residential Programs may appear to be favoring the wealthier households, it becomes clear that lower income households benefit proportionately from the program when the analysis accounts for the cost of measures supplied through the low income program. Furthermore, when both the

standard residential programs and the low income program are considered together, the level of program support provided increases as household income decreases.

Table 1 shows the amount of program support provided by income group for the general Residential Programs. The first column shows that the level of rebates received per household generally increases by income. However, as shown in the second column, the amount of support provided by the low income program (which covers 100 percent of the measure cost), decreases with income. When these two channels of program assistance are considered together (column three), the amount of program assistance overall increases as household income decreases.

Table 1: Residential and Low Income Rebates and Measure Costs by Income

Percent Below 150% of Poverty (Quintiles)	Residential Programs (Rebate $/Household)	Low Income (Measure Cost $/Household)	Residential Programs and Low Income (Rebates + Measure Cost $/Household)
Least poor (< 8% below poverty)	$3.28	$2.25	$5.53
Next least poor (8-16% below poverty)	$2.63	$4.46	$7.09
Middle (16-27% below poverty)	$1.98	$8.05	$10.02
Next most poor (27-43% below poverty)	$1.06	$15.28	$16.34
Most poor (>43% below poverty)	$2.13	$24.06	$26.19
Average	**$2.22**	**$10.82**	**$13.03**

SoCalGas customers generally are concerned about how their energy use affects the environment. The results of the general population survey questions clearly show that SoCalGas customers have a high level of awareness and concern about their energy use and how that use may affect the environment. They are slightly less concerned about how energy use affects global warming. Other question responses indicate a general willingness to take at least some actions to reduce energy use.

Program tracking and data access need to be improved. Some of the programs do not track program data adequately. In particular, several programs lack complete contact data for participating contractors and retailers (e.g., HEER). This makes evaluation and program follow-up difficult, if not impossible. Additionally, there is no simple way to track if HEES participants are participating in other programs after taking the HEES survey. (At the time of this evaluation, the HEES Program was being revamped, so this issue may be addressed in the future.) Finally, for the multi-family programs, contractors would benefit from understanding

which measures already have been installed in multi-family units in order to target their marketing to buildings with the most potential.

Rebate payment times need to be shortened. Slow rebate payment times are an issue with several programs. While the addition of electronic rebate applications for HEER is an improvement over the previous evaluation, additional progress in this area is needed.

Programs generally are consistent with industry best practices. In general, the SoCalGas programs are mature programs that have been refined to follow industry best practices. These programs typically are clearly designed with documented program theory and logic, and have clearly defined areas of responsibilities between SoCalGas program staff and others involved with program implementation. For some programs, there is room for improvement in terms of marketing, rebate payment times, and level of interaction and involvement with SoCalGas. The phone survey results also indicate that SoCalGas customers generally are very satisfied with their program experience.

Additional detail on the best practice assessment by program is provided in Table 2.

Table 2: SoCalGas Residential Program Comparison to Best Practices

Program	Consistent w/ Best Practices	Inconsistent w/ Best Practices
HEER	Program logic/theory well-defined, simple participation process, clearly defined management roles, high customer satisfaction, leverages ENERGY STAR brand, electronic applications	Low awareness of program among retailers. Market understanding and program theory may need revision as program may be having limited effect on consumers. Customer participation data not tracked, slow rebate payments
Multi-Family Programs	Program logic/theory defined, targeted marketing used, participant data tracked	Multiple programs targeting same buildings, move toward a whole building approach
HERS Training	Program theory and design, reporting, marketing and outreach	Day-to-day operations largely handled by third-party implementers (not a problem for this program)
HEES	Program logic/theory well-defined, simple participation process, clearly defined management roles, high customer satisfaction, participation data tracked	Program managers have limited data access, flow of participation from HEES to other programs not easily determined

Program	Consistent w/ Best Practices	Inconsistent w/ Best Practices
Mobile Home	Delivers multiple programs in targeted neighborhoods through one delivery approach, clear target market, substantial expertise in targeted market, delivers a suite of measures relatively easily for homeowners, employs multiple marketing strategies that respond to limitations of prior marketing strategies, use of utility logos on marketing materials verifies the implementer's role as a direct contractor to the utilities.	None identified
Living Wise	Meets or exceeds best practices for development and delivery of educational programs. Mature, focused program theory provides materials that engage students, teachers, and families. Robust tracking and processes for obtaining ongoing feedback allow continuous improvement in content and delivery.	Delivery of program materials does not always match teacher schedules
CLEO	Program logic/theory well-defined, simple participation process, clearly defined management roles, high customer satisfaction, multi-pronged outreach strategies	Tracking progress from CLEO program to other SoCalGas rebate programs is lacking
PACE	Program logic/theory well-defined, simple participation process, clearly defined management roles, high customer satisfaction, multi-pronged outreach strategies	Tracking progress from PACE program to other SoCalGas rebate programs is lacking
Upstream Gas Water Heater	Program logic/theory defined, clearly defined management roles	Simplify enrollment and participation, eliminate economic and technical barriers by lowering cost and size limitations
ENERGY STAR Quality Install	(Too early to determine)	(Too early to determine)

Finally, Table 3 provides a summary of the program-specific conclusions and recommendations for each program covered in this evaluation. Additional detail on all the evaluation methods and research findings are provided in the main body of this report.

Table 3: Summary of SoCalGas Residential Program Process Evaluation Findings and Recommendations

Program Name	Main Issues Identified	Main Recommendations	Difficulty in addressing (Low/ Med/ High)	Value of addressing (Low/Med/ High)
HEER	Long application process	Continue plans to hire an external processing firm for rebate applications	Med	Med
	Customers decided to purchase prior to learning about program	Redirect program promotion from retail stores to online and other sources where customers do research	Med	High
Multifamily Programs	Multiple programs targeting different parts of the same building, piecemeal approach is inefficient	Move toward a whole-building approach	Med	Med/High
	Both MF and low income programs can target units within the same building (inefficient).	Allow entire buildings be designated low income eligible once a certain threshold is reached	Med	Med/High
	Limited focus on certain measures, opportunities missed	Expand list of measures, include cold-water clothes washers.	Med/High	Med/High

Program Name	Main Issues Identified	Main Recommendations	Difficulty in addressing (Low/ Med/ High)	Value of addressing (Low/Med/ High)
Mobile Home	Synergy has developed an effective marketing strategy that addresses the major barriers affecting the target market.	Continue to work with SoCalGas to increase their marketing success, allow use of SoCalGas logo.	Low	Med
	Synergy has demonstrated the benefits of delivering multiple programs to the same neighborhood by cross-marketing and delivering measures for ESAP and CARE as well the Mobile Home program	Synergy's presence in this market should be leveraged as much as possible	Med	Med
HEES	Difficult to link HEES participation with participation in other programs	Develop system that allows easier tracking from HEES to rebate programs	Med	Med
CLEO	Potentially missed outreach opportunities	Additional marketing funding, target more ethnic groups, integrate with other 3rd-party programs	Med	Med
	Does not enroll in-home audits	Allow CLEO to enroll in-home audits	Med	Med
	Incomplete understanding of participants	Cross-program tracking methods	Med/High	Med

Program Name	Main Issues Identified	Main Recommendations	Difficulty in addressing (Low/ Med/ High)	Value of addressing (Low/Med/ High)
PACE	Potentially missed outreach opportunities	Additional funding for schools, target more ethnic groups, integrate with other 3rd-party programs	Med	Med
	Participants not linked to other programs	Cross-program tracking methods	Med/High	Med
LivingWise	About half of teachers rated the *Workbook* calculations as "difficult"	Get teacher feedback on 2011 changes to *Workbook* to determine if problem is resolved	Low	Med
	May not be effective (or age appropriate) in attempting to acquaint students with EE careers	Have teachers assess the benefits of the 2011 changes in curriculum	Low	Med
	Teachers lack year-round access to materials	Develop more flexible program to accommodate teachers' schedules	Med/High	High
HERS Training	Online valued less than hands-on training	Increase hands-on training	Med	High
	Cancelling courses due to low interest	Schedule classes as far in advance as possible	Med	High
Upstream High Efficiency Water Heaters	Long inspection time leading to dropouts	Prioritize in-house inspections	Med	Low/Med
	Wholesalers/Distributors must be SoCalGas customer to participate	Relax this requirement and provide rebate to water heater sales to SoCalGas customers	Low	Med

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ENERGY STAR Quality Install	May not be cost-effective to operate independently	Continue to coordinate with other utilities and find ways to include other programs	Low	High
	Could face challenges in recruiting contractors to participate	Reference findings from the SDG&E evaluation to increase awareness of potential changes	Low	Med

1 Introduction

1.1 Introduction and Program Background

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Additional researchable issues for specific programs are included as part of the discussion of the individual program results. These research issues formed the basis of the evaluation; all of the data collection and analysis activities were designed to address these questions.

The remainder of this report is structured as follows. *Chapter 2* provides an overview of the evaluation methods employed, and details about the data collection activities completed.

Chapter 3 presents a summary of the portfolio-level evaluation results, including SoCalGas's general customers' responses to the awareness, knowledge, and attitude (AKA) questions; a comparison of the programs to industry best practices; a GIS analysis of participation patterns; and a synthesis of the overarching portfolio findings. Evaluation results for the individual programs are provided in *Chapter 4.* The survey instruments, tabulation of the phone survey results, and additional GIS maps are included as appendices to the main report.

2 Evaluation Methods and Data Collection

The evaluation team used a variety of evaluation methods and data collection activities in this evaluation. Each of the data collection activities was tailored to address the program-specific research issues identified as part of the evaluation plan development. This section presents general data collection and analysis activities; additional program-specific detail is provided as needed in the discussion of evaluation results in *Chapter 4*.

2.1 Phone Surveys

Phone surveys of recent program participants were a primary data collection activity. CIC Research fielded these surveys from October 2011 through January 2012; interviews lasted an average of approximately 15 minutes. The phone survey samples were drawn from the SoCalGas participant tracking database and then screened to remove customers who were on the SoCalGas "Do Not Call" list. While the evaluation team attempted to meet the original survey quotas planned for each program, in some cases there was not enough participation data to reach the targets. Despite the lack of data for a few programs, enough surveys were completed to address the various research objectives identified for each program.

Table 4 shows the final survey counts achieved for each program.

Table 4: Program-Specific Surveys

Survey Population	Surveys Completed
Home Energy Efficiency Rebates	352
Multi-Family Programs-Participants	50
Multi-Family Programs-Non-Participants	51
Comprehensive Mobile Home	100
Community Language Efficiency Outreach	101
PACE Energy Savings Project	100
Total Surveys	**754**

A second major data collection component was a general population survey of SoCalGas customers. The survey served several purposes. First, it identified participants in the programs for which SoCalGas does not have tracking data (i.e., HEER). Second, the survey provided an opportunity to interview program non-participants about energy efficiency awareness, knowledge, and awareness (AKA). The evaluation team tested a series of "AKA questions" to support broader statewide program evaluations being coordinated by the CPUC Energy Division.

The general population survey sample came from SoCalGas's customer database. Each survey lasted an average of 15 minutes. Table 5 shows the completed surveys for each quota. Respondents were used to fill multiple quotas when possible.

Table 5: General Population Survey

Research Category	Target Group	Survey Completes
Home Energy Efficiency Rebates	Appliance purchasers	32
Multi-Family	Multi-family tenants	43
General Awareness	Non-participants	175
Total Surveys		**250**

2.2 In-Depth Interviews

In-depth interviews with key actors involved with the programs complemented the phone surveys. These were less structured than the phone surveys, which allowed the interviewer to ask follow-up questions and collect additional detail on important evaluation topics.

The breakdown of the in-depth interviews completed for this evaluation is shown in Table 6. Note that these totals do not include the interviews conducted with the one to two SoCalGas program staff, which were conducted for the individual program evaluations, and which are reported separately in *Chapter 4*.

Table 6: SoCalGas Completed In-Depth Interviews

SoCalGas Program	Completed Interviews
Home Energy Efficiency Rebates Contractors	7
Home Energy Efficiency Rebates Retailers	10
Multi-Family Programs	10
Mobile Home Program Technicians / Implementers	7
HERS Raters	20
Upstream Gas Water Heater Wholesalers/Distributers	5
Total In-Depth Interviews	**59**

2.3 Best Practices Assessment

An additional evaluation component was a comparison of each program to industry best practices. The primary source for determining best practices is the energy efficiency Best Practices Study benchmarking tool found at www.eebestpractices.com. In addition to the Best Practices Study, the evaluation team relied on members' extensive experience evaluating similar programs in other jurisdictions. This allowed the team to provide additional current

best practices for comparison, and assess some of the newer programs that were not explicitly addressed in the original Best Practices Study.

2.4 GIS Analysis

One of the innovative elements of this evaluation is the GIS analysis that was conducted on the SoCalGas customer data. For the GIS analysis, the entire SoCalGas customer database was geo-coded, along with 2010 US Census data on income, race, and dwelling type. As discussed in the following chapter, this allowed the evaluation team to compare participation patterns by geography, as well as identify the distribution of program dollars (both for the Residential Programs and the low income program) across the income levels of SoCalGas customers. The matching of customer participation data with Census demographic data helped the evaluation team to assess how well the program was covering targeted markets and demographics and to identify any population subgroups that might be missed by these programs.

3 Portfolio-Level Evaluation Results

3.1 Program Spending and Progress Toward Goals

The following figures show the progress that the resource programs have made toward their 2010-2012 impact goals, based on the monthly progress reports submitted by SoCalGas to the CPUC Energy Division. These graphs are based on only 23 months of impact data, while the goals are set for a 36-month period. Note that any lack of progress toward goals should not be interpreted as a sign that a program is faltering. Rather, the progress-toward-goal information is presented as context to show the amount of activity for each program to date.

Figure 3 shows the current progress toward goals for the SoCalGas resource acquisition programs. All the programs have made at least some progress toward achieving their therm savings goals.

Figure 3: Progress Toward 3-Year Therm Savings Goals (Jan. 2010 - Nov. 2011)

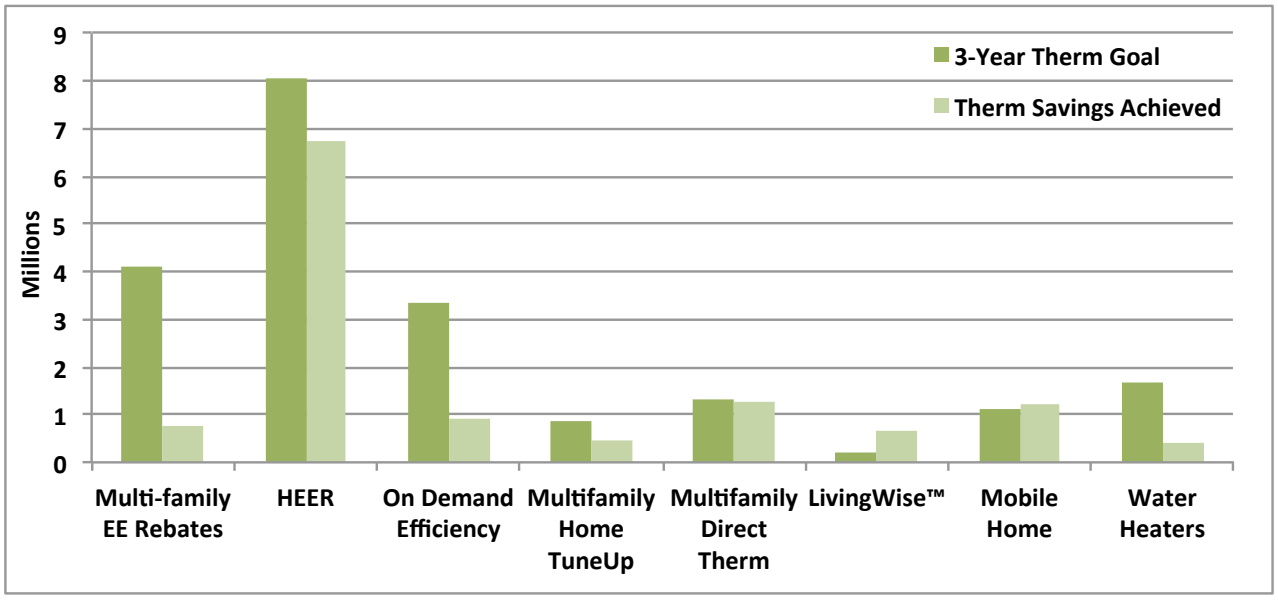


Figure 4 and Figure 5 show how much of the 3-year program budget had been spent as of November 2011 (the latest data available). As with the savings information, the spending data are presented solely for context to show the level of activity occurring with each program.

Figure 4: Program Expenditures and Progress Toward Goals (Jan. 2010 - Nov. 2011)

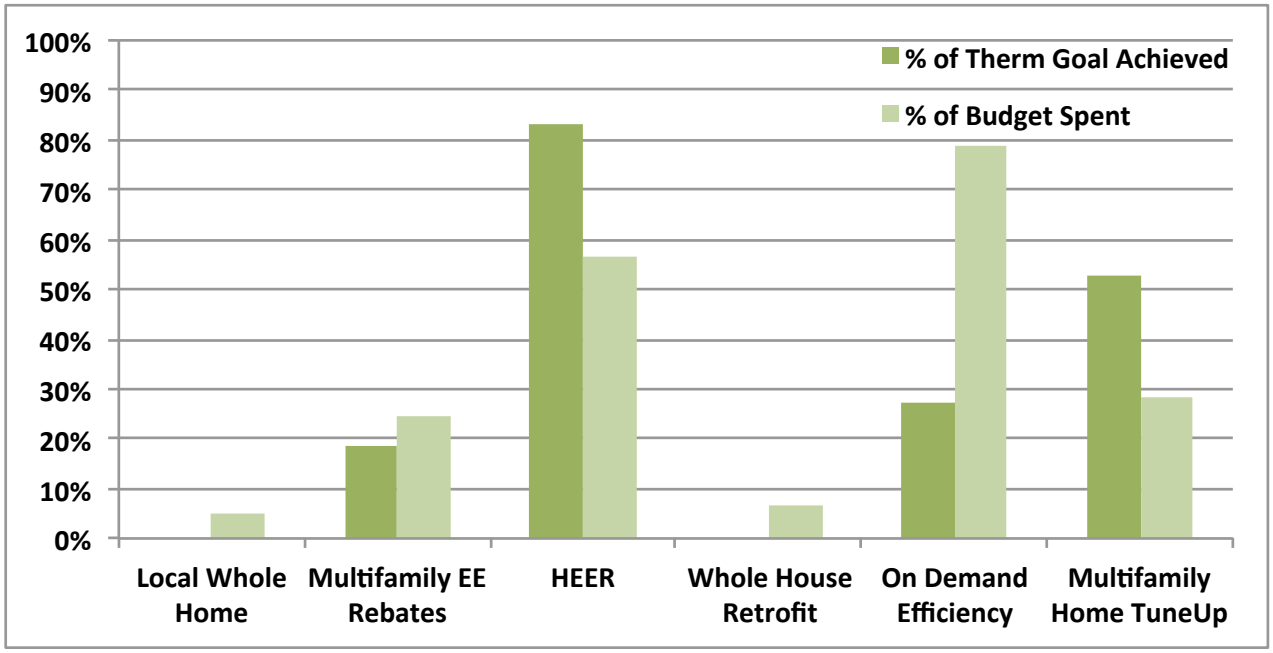
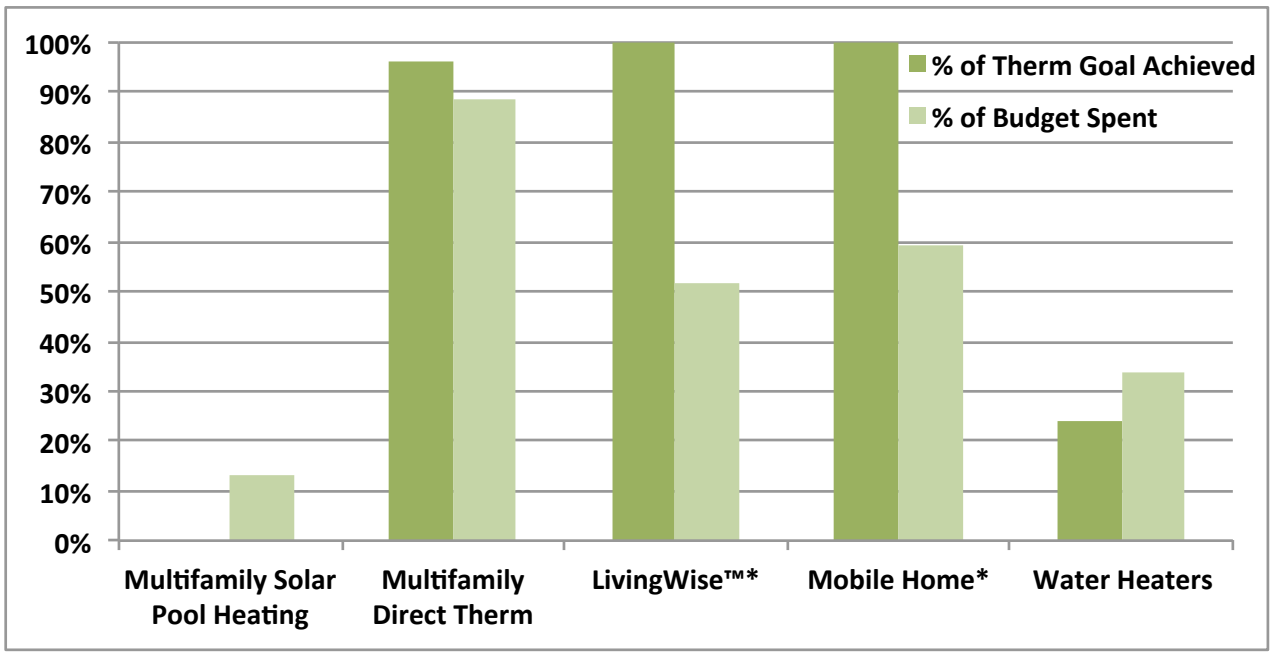


Figure 5: Program Expenditures and Progress Toward Goals (Jan. 2010 - Nov. 2011)[1]



[1] The LivingWise and Manufactured Mobile Home program therm goal savings are capped at 100 percent for graphing purposes. In actuality, both programs exceeded their therm goals at 330 percent and 105 percent, respectively.

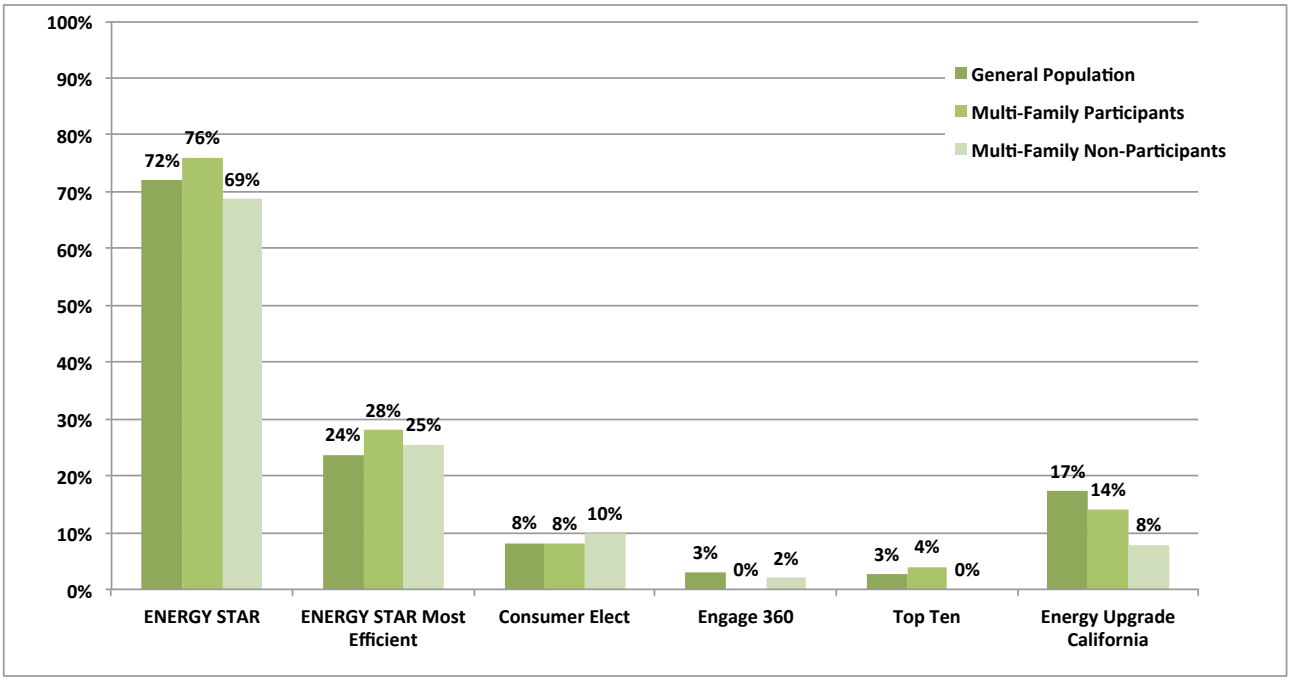
3.2 Customer Awareness, Knowledge and Attitudes (AKA)

For the California Statewide evaluations involving all of the investor-owned utilities (IOU), the IOUs and the CPUC Energy Division are collaborating on the development of a series of survey questions that address customer awareness, knowledge, and attitudes (AKA) relating to energy efficiency. The purpose of this effort is to provide a common set of questions to measure the current level of understanding of and concerns about how energy use may be affecting the environment.

At the time of this evaluation, the AKA question design had not been completed. Rather than delay this evaluation, the decision was made to field the most current version of these questions for the general population that includes residents in single-family and multi-family homes. The IOUs and Energy Division had not begun designing an analogous AKA question battery for multi-family residences, so the evaluation team developed its own AKA questions for this customer segment. The AKA questions were asked as part of the general population survey fielded in the fall of 2011.

Figure 6 shows survey respondents' levels of awareness with various brands and programs promoting energy efficiency in California. Not surprisingly, respondents had the greatest awareness of the ENERGY STAR label; approximately 70 percent of all respondents were aware of the label. As discussed later in this report, this awareness is important, as several programs have been able to capitalize on the ENERGY STAR brand to promote efficiency measures.

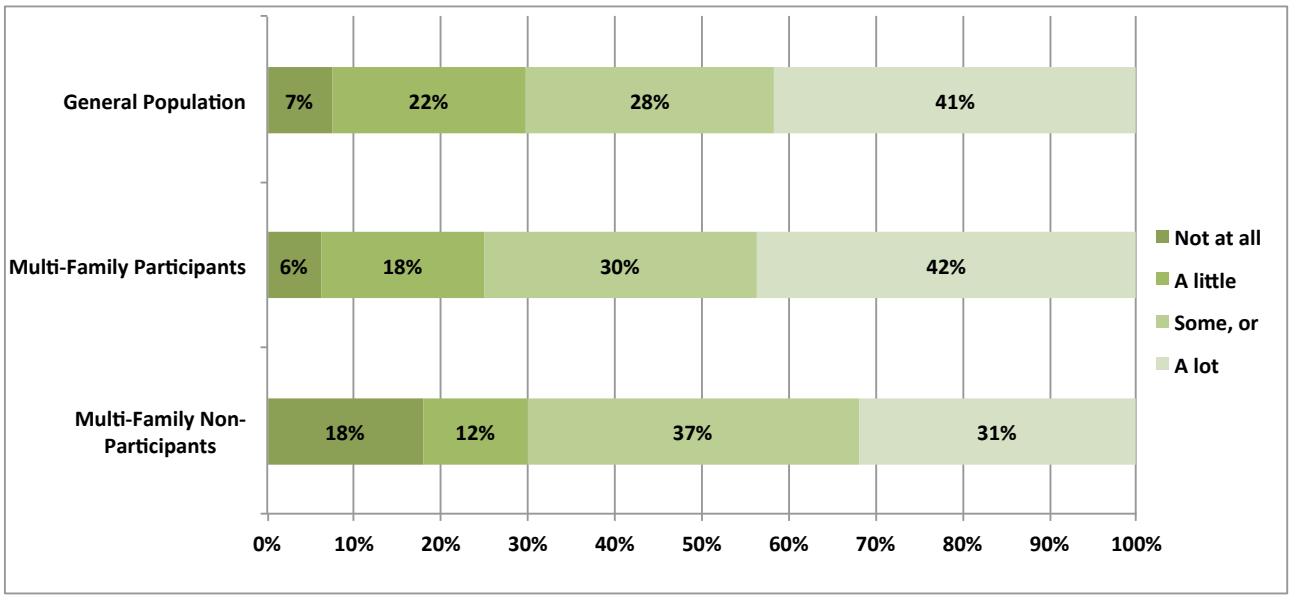
Figure 6: Awareness of Energy-Efficient Product Labels and Programs



A separate question asked customers how much they had thought about how their energy use affects the environment. These responses are shown in Figure 7. About two-thirds of the

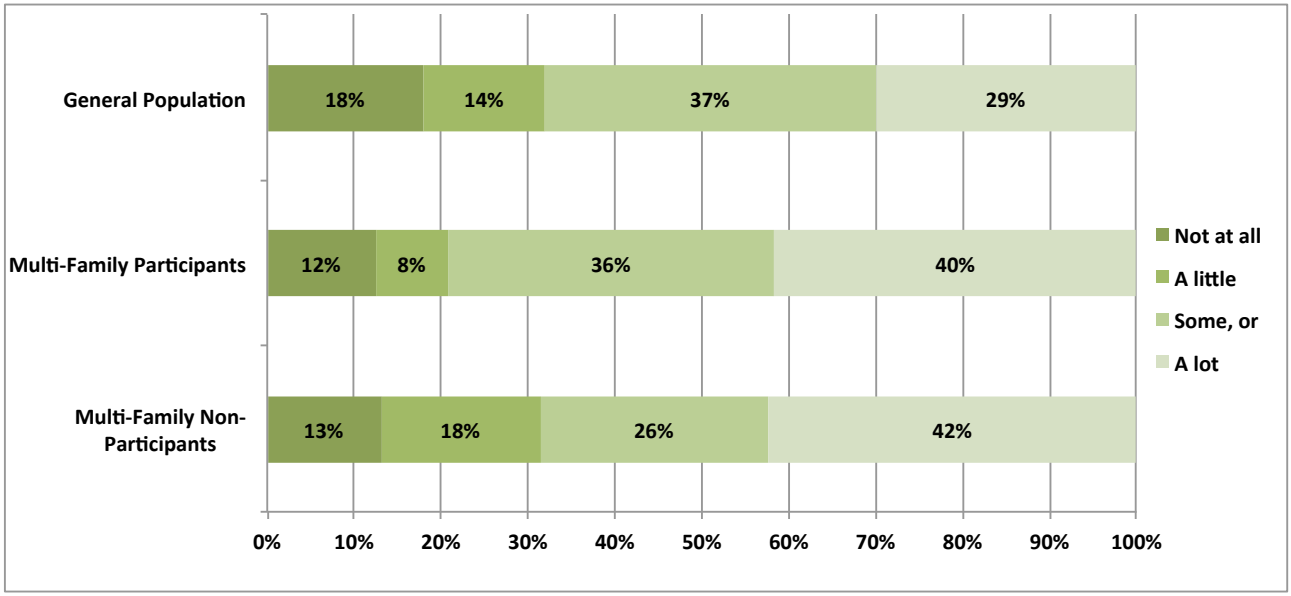
respondents reported that they had thought about it "some" or "a lot," indicating a significant amount of concern across all three customer groups.

Figure 7: Time Spent Considering How Energy Use Affects the Environment



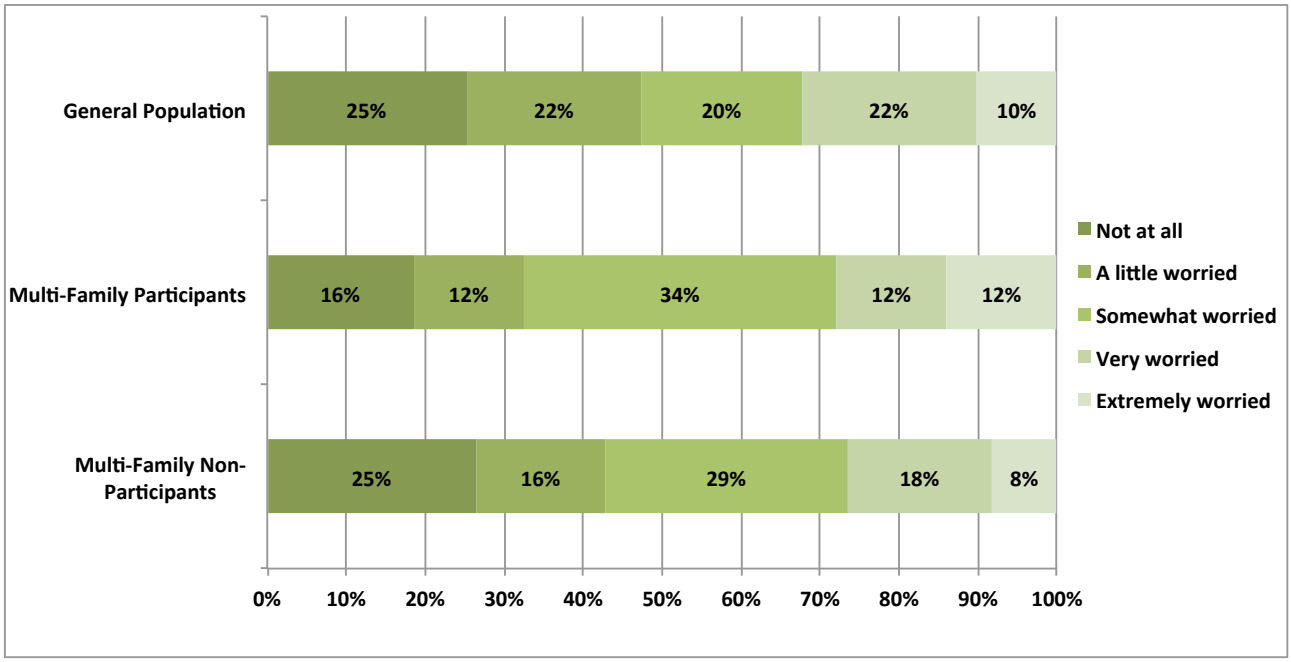
The surveys also asked respondents how much they had thought about global warming prior to taking the survey. These results are shown in Figure 8. The *non-participating* multi-family property managers had thought about global warming more than the other two populations; 42 percent of this group reported that they had thought about it "a lot," compared to 40 percent for *participating* property managers and 29 percent for the general population.

Figure 8: Time Spent Thinking About Global Warming



The surveys then asked respondents how worried they were about global warming. As shown in Figure 9, responses were quite varied with no general consensus. A small portion of all three groups (between eight and 12 percent) reported being "extremely" worried about global warming, and about a quarter of all the general population and non-participating multi-family property managers reported that they were "not at all" worried.

Figure 9: Level of Worry Concerning Global Warming



To gauge customers' attitudes on a variety of topics, the survey team asked respondents to indicate to what degree they agreed with 13 different statements about energy and energy use. The responses were on a 0-to-10-point scale, where "0" was "completely disagree" and "10" was "completely agree."

Table 7 shows the responses to the AKA questions that were asked of both general and multi-family only residents. In general, respondents said they were concerned about all of the environmental issues raised in these questions. Multi-family participants rated these issues slightly more highly than did the general population respondents. Across all customer groups, there is concern about the effect energy use is having on the environment, but slightly less concern/belief that respondents' energy choices are having an effect on global climate change.

Table 7: Summary Statistics for Attitude Statement Answers

Statement	Average Response		
	General Population	Multi-Family Participants	Multi-Family Non-Participants
Household electricity use has an impact on the environment.	7.3	7.2	6.8
I am very concerned about how energy use affects the environment.	7.2	7.2	7.0
Conserving electricity will help reduce global warming.	7.0	7.4	7.3
If others in my household can't or won't change their behavior to lower our utility bills, I feel I should do even more to control our energy costs.	6.7	7.1	7.1
I believe that household energy use has an impact on global warming and climate change.	6.6	6.6	6.8

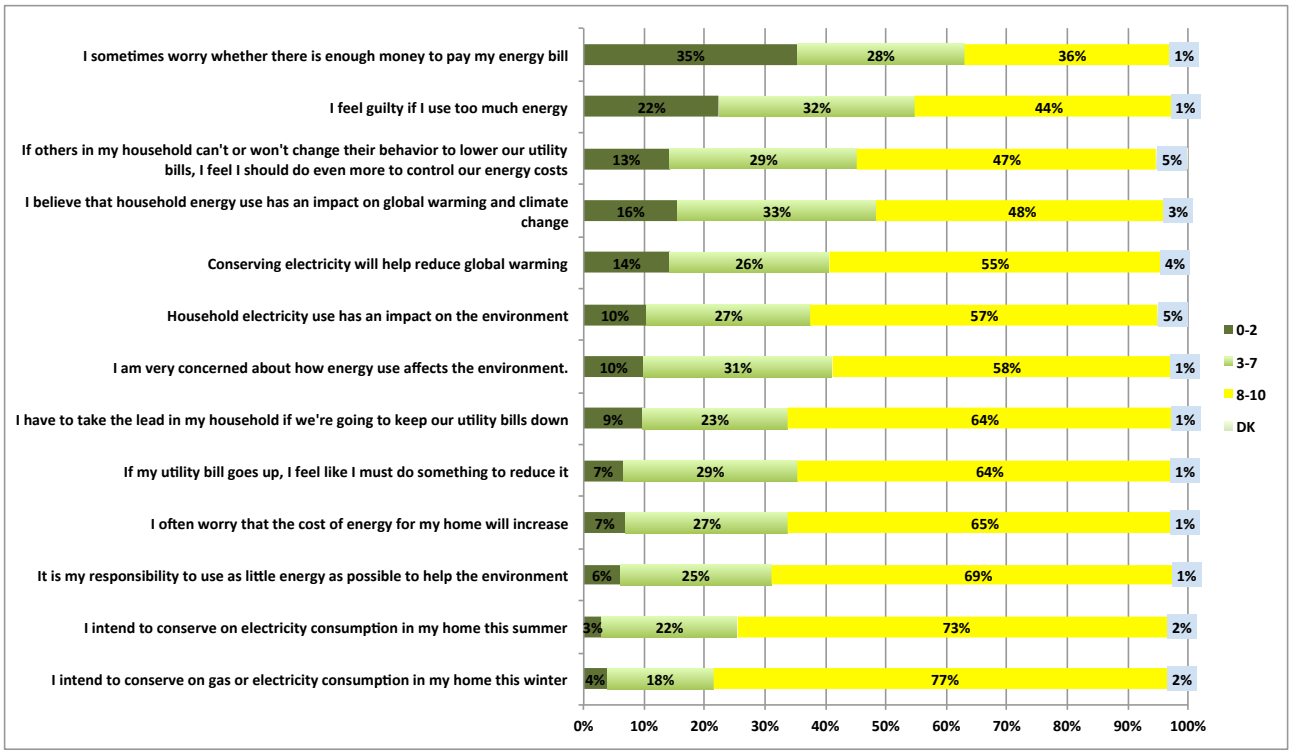
Additional questions were asked of general population respondents, and Table 8 displays the average responses to these questions. The greatest agreement concerned intentions to reduce electricity and gas consumption, followed by agreement with statements regarding reducing energy bills and feeling responsible to help the environment by reducing energy consumption. Respondents agreed the least with statements expressing concern about having enough money to pay utility bills.

Table 8: Summary Statistics for Attitude Statement Answers (General Population Respondents Only)

Statement	Average Response
I intend to conserve on gas or electricity consumption in my home this winter.	8.3
I intend to conserve on electricity consumption in my home this summer.	8.3
I often worry that the cost of energy for my home will increase.	7.9
If my utility bill goes up, I feel like I must do something to reduce it.	7.8
It is my responsibility to use as little energy as possible to help the environment.	7.8
I have to take the lead in my household if we're going to keep our utility bills down.	7.7
I feel guilty if I use too much energy.	6.0
I sometimes worry whether there is enough money to pay my energy bill.	5.0

Figure 10 shows the distribution of responses (rather than just the average) for the same questions discussed above for the general population respondents. These responses show that – for the most part – there is a high level of agreement (rating of "8" or higher) for almost all of the AKA statements. Two exceptions are the statements relating to having enough money to pay the energy bill and feeling guilty about using too much energy, where over 20 percent rated their agreement at "2" or less.

Figure 10: General Population Attitude Statement Answers (0-10 Scale, 0 = "Completely Disagree", 10 = "Completely Agree")



3.3 Distribution of Program Participants

As noted in section 2.4, the evaluation team used GIS to map different elements of the SoCalGas customer population. In particular, GIS data allowed the team to characterize the entire SoCalGas customer population by income and race (based on 2010 US Census data at the census block level (the smallest geographic area available in the Census data), and then overlay information on program participation. As a result, the team was able to examine how program rebate dollars are distributed across the population and to identify any areas that might be underserved or missed by the Residential Programs.

Table 9 shows the amount of program support provided for both the standard Residential Programs and the low income program. While the SoCalGas low income program is not covered in this evaluation, the evaluation team felt it was important to examine it in the assessment of the overall portfolio in order to get a comprehensive picture of program coverage.

Table 9 shows that the amount of rebates received from the Residential Programs increases slightly with household income. However, the amount of support provided by the low income program (by providing for 100 percent of the measure cost), decreases with income. This is as expected, since the low income program is designed to provide the majority of its support to low income households. When these two channels of program assistance are considered together, the amount of program assistance overall increases as household income decreases.

Table 9: Residential and Low Income Rebates and Measure Cost by Income

Percent Below 150% of Poverty (Quintiles)	Residential Programs (Rebate $/Household)	Low Income (Measure Cost $/Household)	Residential Programs and Low Income (Rebates + Measure Cost $/Household)
Least Poor (< 8% below poverty)	$3.28	$2.25	$5.53
Next least Poor (8-16% below poverty)	$2.63	$4.46	$7.09
Middle (16-27% below poverty)	$1.98	$8.05	$10.02
Next Most Poor (27-43% below poverty)	$1.06	$15.28	$16.34
Most Poor (>43% below poverty)	$2.13	$24.06	$26.19
Average	**$2.22**	**$10.82**	**$13.03**

Table 10 shows a similar breakdown of program support by areas containing multi-family housing. This table was created to determine if there are differences in the amount of program support received based on the amount of multi-family housing within the Census block. If there are large differences in the amount of program support received, this could indicate that the multi-family programs are missing a significant part of their target market.

As shown in the table, the average amount of program support (either through the general Residential Program rebates or low income program) is fairly consistent across areas with varying amounts of multi-family housing. Note that areas with more multi-family housing are receiving less than average support from SoCalGas through both the residential and low income programs. It is unclear if this is because the multi-family programs are not addressing this sector or if these buildings lack cost-effective gas retrofit opportunities. Also note that this analysis shows the rebate dollars going to areas with multi-family housing based on Census data, but the evaluation team was unable to determine if the rebate dollars actually went to multi-family residences within these Census blocks.

Table 10: Residential and Low Income Rebates and Measure Cost by Multi-family Areas

Multi-family Quintile Groups (Lowest 2 Quintiles Combined)	Residential Programs (Rebate $/Household)	Low Income (Measure Cost $/Household)	Residential Programs and Low Income (Rebates + Measure Cost $/Household)
Least Multi-family (No multi-family)	$2.91	$10.13	$13.04
Middle Multi-family (0.1 to 3% multi-family)	$1.52	$15.51	$17.04
More Multi-family (3 to 16% multi-family)	$1.22	$10.35	$11.57
Most Multi-family (>16% multi-family)	$2.51	$7.96	$10.47
Average	**$2.22**	**$10.99**	**$13.03**

The data used to create the preceding tables were also used to create detailed maps showing the amount of SoCalGas program assistance going to various income classes across the service territory. The following maps present a summary of this analysis; additional maps are provided in an appendix of the main report. As with the preceding tables, the evaluation team was unable to include rebate dollars provided for programs such as HEER because SoCalGas generally does not track customer-level rebate data.

Map 1: This map shows the distribution of gas usage within SoCalGas's service territory.

Map 2: The second map shows the number of gas accounts per square mile, and areas with higher concentrations of low income households (as measured by annual income below 150 percent of federal poverty guidelines). This map indicates a significant number of low income households within SoCalGas's service territory.

Map 3: The third map shows the distribution of SoCalGas program rebate dollars to all residential households by income quintile. Again, this does not include rebate dollars provided through the HEER Program because individual customer participation is not tracked.

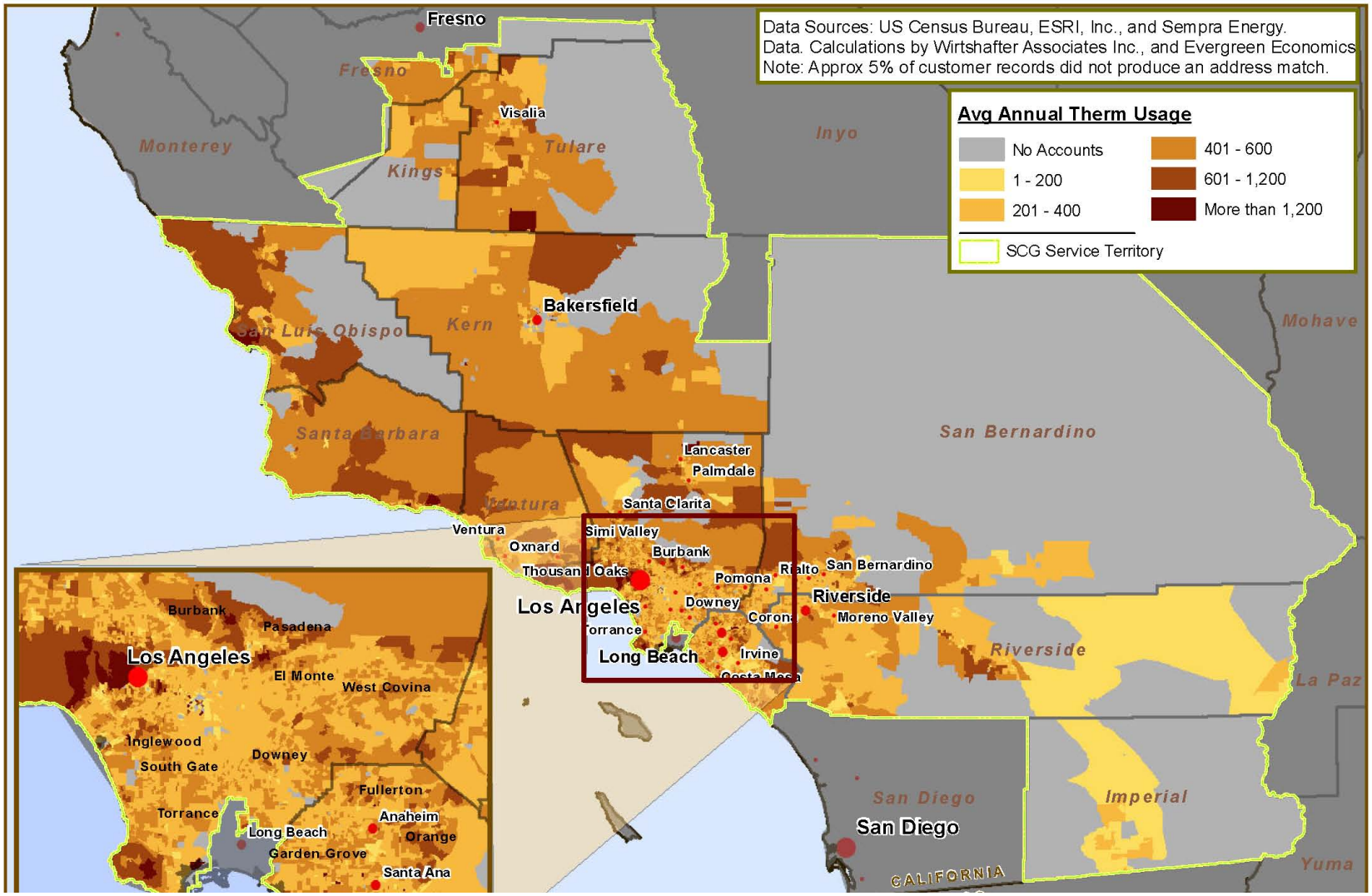
Map 4: The final map shows the distribution of the Residential Programs' rebate dollars plus low income program assistance. For the low income program, SoCalGas pays the entire measure cost, but covers only a fraction of the measure cost for the standard Residential Programs. This map is consistent with Table 9, which shows that the lower income areas receive a greater share of SoCalGas rebate dollars when both the low income and Residential Program rebates are considered.

In summary, the standard residential program rebates, combined with the low income program assistance, appear to be doing a good job of smoothing out program support across income groups. SoCalGas provides more rebate support provided to the lower income

households. While some geographic areas may appear to be receiving lower levels of program support, it is important to note that these maps do not show participation in prior years, and it may be that these areas were served in the past. Doing the mapping exercise using participation data from the past five years would provide more comprehensive results.

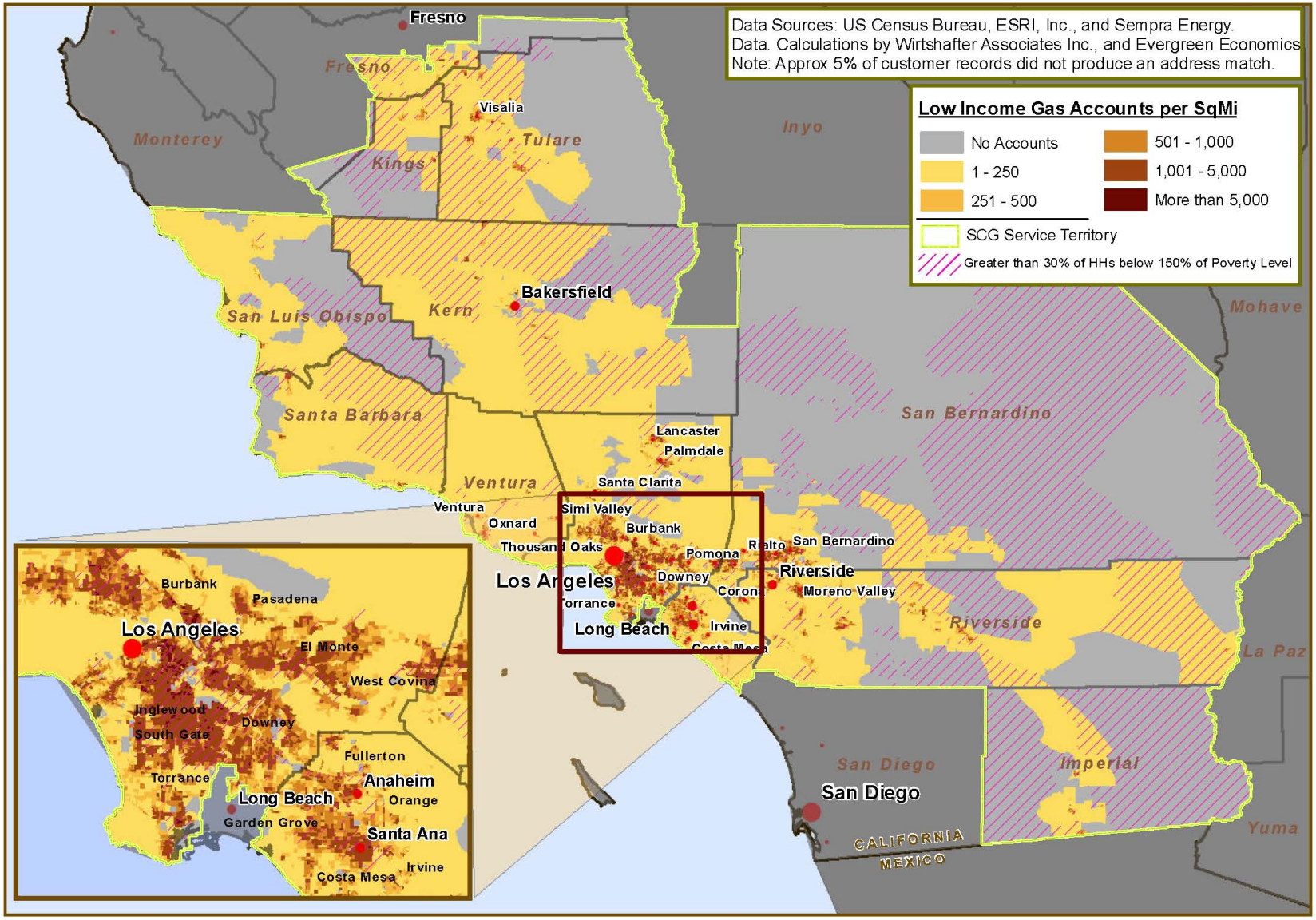
Map 1: Annual Average Therm Usage for All Accounts, 2011

By 2000 Census Block Group



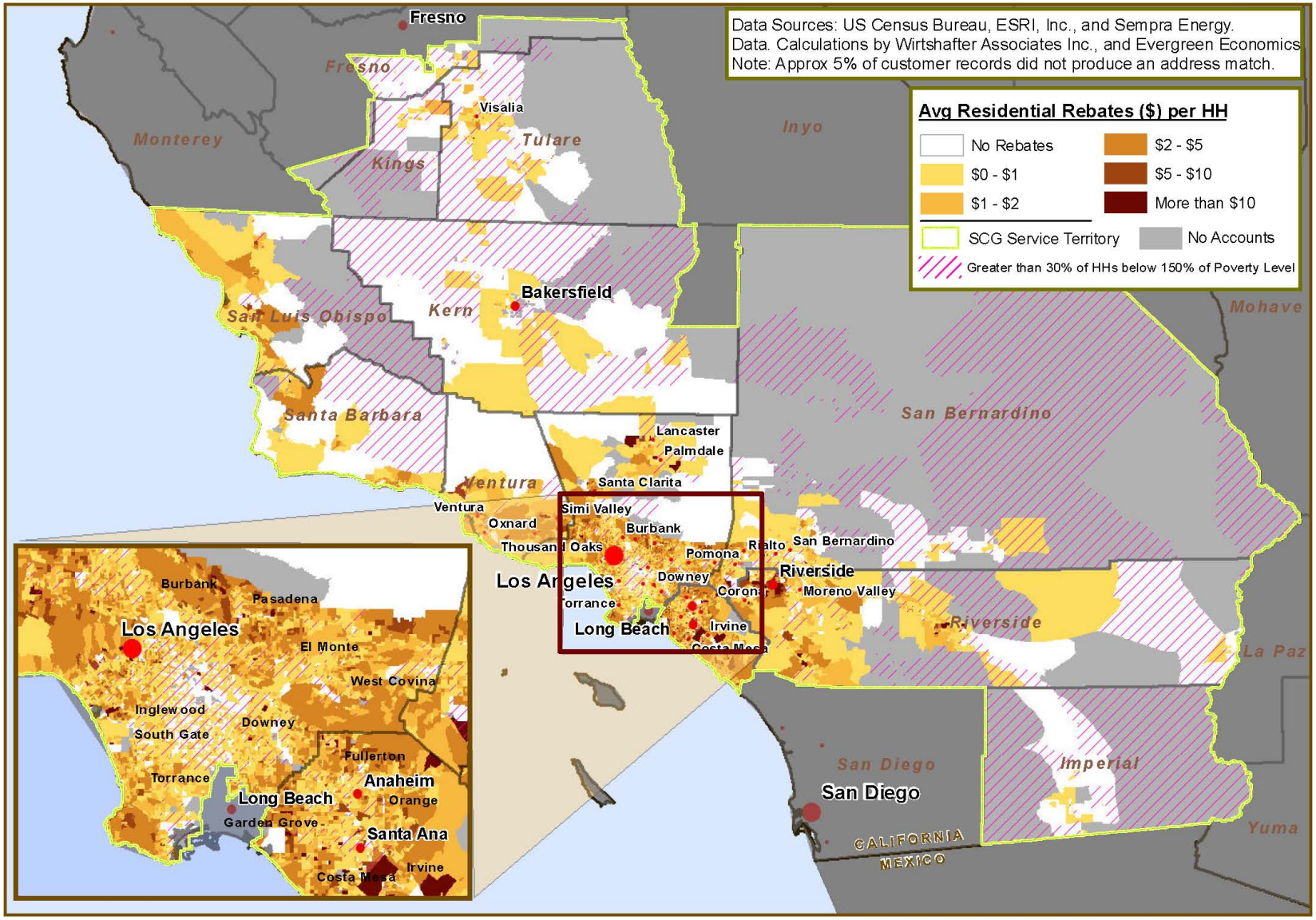
Map 2: Low Income Gas Accounts per Square Mile, 2011

By 2000 Census Block Group



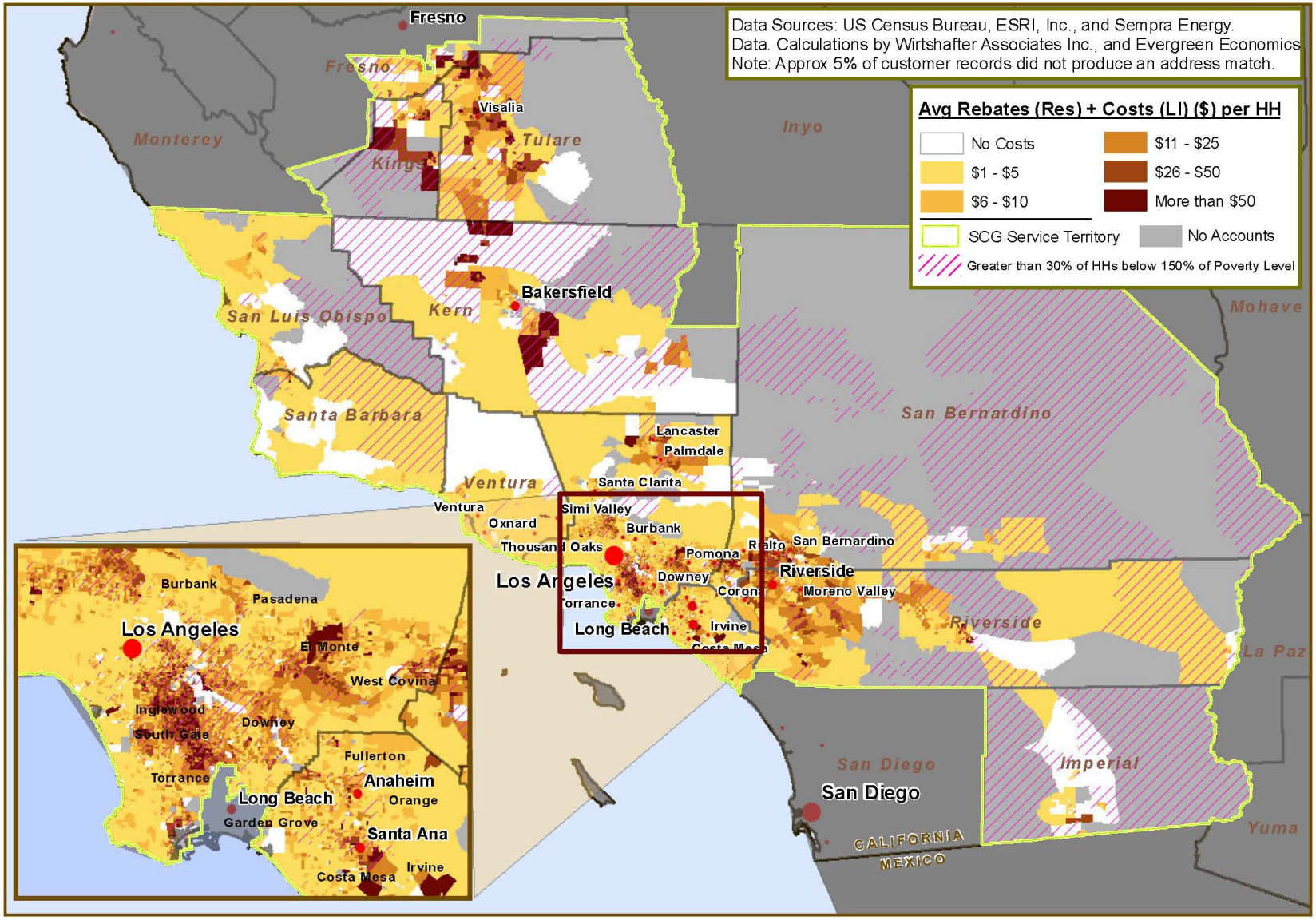
Map 3: Average Residential Rebates ($) per Household, 2011

By 2000 Census Block Group



Map 4: Average Residential Rebates + Low Income Measure Costs ($) per Household, 2011

By 2000 Census Block Group



3.4 Comparison to Best Practices

Each of the programs covered in this evaluation was assessed against the industry best practices for that program type. In general, SoCalGas is implementing programs that are consistent with industry best practices, with the exception of the multi-family programs. Table 11 provides a summary of how each program compares with the industry best practices. Additional detail is provided in the program-specific discussion in *Chapter 4*.

Table 11: Comparison to Best Practices

Program	Consistent w/ Best Practices	Inconsistent w/ Best Practices
HEER	Program logic/theory well-defined, simple participation process, clearly defined management roles, high customer satisfaction, leverages ENERGY STAR brand, electronic applications	Low awareness of program among retailers. Market understanding and program theory may need revision as program may be having limited effect on consumers. Customer participation data not tracked, slow rebate payments
Multi-Family Programs	Program logic/theory defined, targeted marketing used, participant data tracked	Multiple programs targeting same buildings, move toward a whole building approach
HERS Training	Program theory and design, reporting, marketing and outreach	Day-to-day operations largely handled by third-party implementers (not a problem for this program)
HEES	Program logic/theory well-defined, simple participation process, clearly defined management roles, high customer satisfaction, participation data tracked	Program managers have limited data access, flow of participation from HEES to other programs not easily determined
Mobile Home	Delivers multiple programs in targeted neighborhoods through one delivery approach, clear target market, substantial expertise in targeted market, delivers a suite of measures relatively easily for homeowners, employs multiple marketing strategies that respond to limitations of prior marketing strategies, use of utility logos on marketing materials verifies the implementer's role as a direct contractor to the utilities.	None identified

Program	Consistent w/ Best Practices	Inconsistent w/ Best Practices
Living Wise	Meets or exceeds best practices for development and delivery of educational programs. Mature, focused program theory provides materials that engage students, teachers, and families. Robust tracking and processes for obtaining ongoing feedback allow continuous improvement in content and delivery.	Delivery of program materials does not always match teacher schedules
CLEO	Program logic/theory well-defined, simple participation process, clearly defined management roles, high customer satisfaction, multi-pronged outreach strategies	Tracking progress from CLEO program to other SoCalGas rebate programs is lacking
PACE	Program logic/theory well-defined, simple participation process, clearly defined management roles, high customer satisfaction, multi-pronged outreach strategies	Tracking progress from PACE program to other SoCalGas rebate programs is lacking
Upstream Gas Water Heater	Program logic/theory defined, clearly defined management roles	Simplify enrollment and participation, eliminate economic and technical barriers by lowering cost and size limitations
ENERGY STAR Quality Install	(Too early to determine)	(Too early to determine)

3.5 Portfolio-Level Observations and Recommendations

The following are some general portfolio-level observations and recommendations for the SoCalGas Residential Program portfolio. These observations are based in part on the analysis presented in this chapter, plus findings from the program-specific analyses in *Chapter 4.*

- **SoCalGas customers generally are concerned about how their energy use affects the environment.** The results of the general population survey questions clearly show that SoCalGas customers have a high level of awareness and concern about their energy use and how that use may affect the environment. They are slightly less concerned about how energy use affects global warming. Other question responses indicate a general willingness to take at least some actions to reduce energy use.
- **Program tracking and data access need to be improved.** Some of the programs do not track program data adequately. In particular, several programs lack complete contact data for participating contractors and retailers (e.g., HEER). This makes evaluation and program follow-up difficult, if not impossible. Additionally, there is no

simple way to track if HEES participants are participating in other programs after taking the HEES survey. (At the time of this evaluation, the HEES Program was being revamped, so this issue may be addressed in the future.) Finally, for the multi-family programs, contractors would benefit from understanding which measures already have been installed in multi-family units in order to target their marketing to buildings with the most potential.

- **Rebate payment times need to be shortened.** Slow rebate payment times are an issue with several programs. While the addition of electronic rebate applications for HEER is an improvement over the previous evaluation, additional progress in this area is needed.
- **Programs generally are consistent with industry best practices.** In general, the SoCalGas programs are mature programs that have been refined to follow industry best practices. These programs typically are clearly designed with documented program theory and logic, and have clearly defined areas of responsibilities between SoCalGas program staff and others involved with program implementation. For some programs, there is room for improvement in terms of marketing, rebate payment times, and level of interaction and involvement with SoCalGas. The phone survey results also indicate that SoCalGas customers generally are very satisfied with their program experience.

4 Program-Specific and Portfolio Evaluation Results

4.1 Home Energy Efficiency Rebate (HEER) Program

The SoCalGas Home Energy Efficiency Rebate (HEER) Program provides rebates to consumers for the purchase and installation of energy-efficient appliances and other products. The purpose of the program is to influence consumers to make energy-efficient purchases, thereby contributing to electricity and natural gas energy and demand savings. Customers receive the rebates immediately if the qualifying appliance or product is purchased at a retail location that participates in the point-of-sale (POS) portion of the program; otherwise, customers must submit an online or mail-in application form to receive the rebate.

The rebates are marketed through in-store marketing materials, but they also are promoted through bill inserts, email marketing, e-newsletters, home remodel events, direct mail, and bill envelope messages. In-store marketing materials include application forms, "clings" or stickers placed on qualifying models, or stickers placed on qualifying appliances to promote the rebates.

SoCalGas contracts Organizational Support Services (OSS) to provide retailer management services, which include in-store visits to each participating store location. At each visit, OSS staff replenishes promotional materials and conducts brief informal training with any new staff or those who need to refresh their information about the program. Retailer training includes explaining the rules of the program, which models qualify for rebates, and procedures for filling out rebate applications.

4.1.1 Background

The HEER Program is a mature program. Previously, it was known as the Single Family Rebate Program.

A few changes have been made to the HEER Program recently. One notable change is that SoCalGas began offering online rebates in the latter half of 2011. Additional considerations may influence the program. For instance, the California Attorney General now requires that, for customers to receive a rebate for any contractor-installed item, the customer must certify that the required permits were pulled and licensed contractors were used.

In addition to the rebates available from SoCalGas, the American Recovery and Reinvestment Act-funded (ARRA) program "Cash for Appliances" provided rebates for home appliances from April through December 2010. Program staff expressed some sense that the availability of the ARRA "Cash for Appliances" rebates, coupled with federal tax credits, may have inflated appliance sales (and thus SoCalGas rebates) in 2010, and since "Cash for Appliances" ended in 2010, appliance sales and rebates may have dropped off substantially. SoCalGas staff reported that rebate applications increased by 72 percent during the availability of "Cash for Appliances."

Upcoming Program Changes

The HEER Program is considering a few changes for the near future. This includes adding in-wall furnaces as a new measure. In addition, SoCalGas is planning to switch from processing rebates in-house to hiring an external company to handle this task.

SoCalGas also would like to expand the retailer partnership, particularly regarding the marketing of the program. SoCalGas would like to partner with Southern California Edison (SCE) and larger retailers to set up displays in stores to promote the program.

Key Research Questions

In addition to the overarching research issues that span all programs, the following key research questions specific to the 2010-2012 process evaluation of the SoCalGas HEER Program were identified during initial interviews with program staff:

- Is the rebate process for tankless water heaters effective?[2]
- Are retailers equipped to provide information about currently available rebates to customers, and do customers report learning about rebates from retail staff?
- Do marketing materials displayed at participating retail locations meet the guidelines and goals for marketing activities?
- Has discontinuation of ARRA-funded appliance rebates contributed to a decline in program participation?
- Are the program-tracking data effective in supporting the program objectives?

4.1.2 Data Collection Activities

Data collection activities for the evaluation of the SoCalGas HEER Program included in-depth interviews with program staff, appliance retailers, and participating contractors, as well as telephone surveys with participating customers. These data collection activities are described in detail below.

The evaluation team conducted in-depth interviews with program staff at SoCalGas and OSS in order to document program delivery and gauge program successes and challenges. The following staff-persons were interviewed:

- SoCalGas – Program Manager
- OSS – Primary program contact

The evaluation team conducted ten in-depth interviews with retailers participating in the program; seven with store-level staff and three with corporate-level contacts. These retailers

[2] The evaluation was unfortunately unable to answer this question, because the program does not track customers who receive rebates for tankless water heaters. The evaluation team was unable to complete any interviews with contractors that install tankless water heaters.

ranged from large multi-national chains to local independent retailers. These interviews were designed to explicate the retailer experience with the program, including: promotion of the rebates to customers, the extent of promotional materials displayed in participating store locations, and general satisfaction with the program.

The evaluation team also conducted in-depth interviews with seven contractors participating in the program. These interviews were conducted to gauge their satisfaction with the program, better understand program impacts on contractors' business and customer decisions, and identify which marketing strategies and promotional materials are used the most.

The evaluation team conducted telephone surveys with 384 customers who had participated in the HEER Program. This included 352 participants whose contact information was known, and 32 surveys with participants who were identified through the general population survey. These surveys covered a variety of topics, including: program awareness, motivations for participation, and satisfaction with program components.

4.1.3 Research Findings

This section describes detailed results of the process evaluation of the SoCalGas HEER Program and includes a review of PPMs. This review is followed by findings gleaned from staff interviews, retailer interviews, and contractor interviews. Results of the participant surveys are provided last.

Review of Program Performance Metrics

Table 12 shows the status of the PPMs for the SoCalGas HEER Program. This program has two PPMs: 1) tracking the percentage of rebates that are provided through the point-of-sale (POS) channel as opposed to the online and mail-in applications, and 2) the percentage of participating stores that are located in hard-to-reach ZIP codes. SoCalGas tracks both PPMs.

Table 12: PPM Summary and Status

PPM	Tracked?	Status Relative to Goal
Percentage of program rebates made through the point-of-sale (POS) mode relative to all rebates	Yes	In 2010, 46% of the total applications received were received through a POS transaction
Percentage of participating stores located in hard-to-reach (HTR) ZIP codes relative to all program participating stores	Yes	In 2010, 17% of POS participating stores were located in HTR ZIP codes zip codes

Staff Interview Results

The following issues were identified from the in-depth interviews with SoCalGas and OSS staff.

The program has been successful based on the number of POS rebates that have been submitted (approximately 40 percent of all rebates are through POS). A challenge with POS rebates, however, is that SoCalGas receives less information about the customer and the installation of the appliance. One way to collect customer information for those who receive POS rebates is to hold raffles for gift cards; customers who purchase qualifying appliances and receive the POS rebate can fill out a form with their contact information for the chance to win a gift card. The gift card raffle captures approximately five percent of participants for POS sales.

Smaller retailers no longer participate in the POS rebate element of the program because they could not wait to be reimbursed for rebates they had to give to customers at the time of purchase. Instead, smaller retailers opted to participate in the non-POS portion of the program and have customers fill out the application. In addition to the delay in receiving reimbursements from SoCalGas, smaller retailers cited the amount of reporting requirements. It is easier for larger national retailers to participate in the POS rebate offerings because their POS systems can track sales by model number.

Program staff said that it takes approximately six to eight weeks to process rebates. Required inspections can add two weeks to this process. The wait time was even longer (approximately 16 weeks) during "Cash for Appliances." Part of this is attributed to the introduction of the Customer Relationship Management (CRM) system, which increased processing time by 50 percent. The cost for SoCalGas to process one application was about $18, which did not include any inspection costs.

During the 2010 and 2011 program years, OSS provided informal retailer training once or twice per year during store visits. Staff reported that frequent retail staff turnover makes it more difficult to ensure that all or most store staff have been trained and have current program information. This is especially apparent with the larger national retailers. Program staff reported that smaller independent retailers have lower turnover rates, and these stores' staff generally are much more knowledgeable about the program.

At the current rate of in-store visits, a product could have an incorrect label or a qualifying product might be missing a label for several months. OSS staff reported that store visits ideally would be conducted more frequently, which would help ensure that qualifying products are labeled correctly. The in-store visits to refresh promotional material and provide retail staff training could coincide with bill inserts or other utility marketing efforts as well as retailer promotions, such as those that occur on holiday weekends. Beginning with the second quarter of 2012, OSS will visit each store once per quarter.

"Clings," or stickers placed on qualifying appliances to promote the rebates, are a relatively new addition to the program marketing materials. OSS staff reported that these stickers work well, and that OSS is careful to write the model number on the sticker to ensure that it is placed on the correct qualifying appliance. However, OSS staff indicated that the adhesive used by the vendor that prints them has made the clings difficult to remove, and sometimes has damaged the surface of some appliances. Obviously, this upset some retailers. This is not currently an issue, but SoCalGas may want to monitor how the adhesive used by a vendor

functions before having the clings printed. Ideally, the clings should not leave a residue when removed.

SoCalGas is the only utility currently offering a rebate for tankless water heaters. The rebate process for tankless water heaters operates somewhat differently than for the other measures. Customers contact the manufacturer to get the rebate application, and then manufacturers authorize a particular contractor to do the work. This helps ensure that a qualified technician does the work instead of the customer, which likely improves customer satisfaction. Manufacturers provide the rebate to the customer or contractor, and then submit monthly invoices to SoCalGas for reimbursement. Because this process is so different than that for the other measures, a research question naturally arose regarding the effectiveness of this process. However, as noted earlier, the evaluation team was not able to collect data on any customers or contractors who had participated in the rebate process for tankless water heaters.

Retailer Interview Results

The evaluation team completed ten in-depth interviews with retail staff: seven with store-level staff and three with corporate-level staff. SoCalGas provided corporate contacts and OSS provided the store-level contacts. Retailers contacted for this evaluation stocked the following qualifying products: clothes washers, dishwashers, and water heaters. Interviews were conducted in November and December 2011 and lasted approximately 30 minutes for corporate-level interviews and 10 minutes for store-level interviews.

These interviews were designed to explicate the retailer's experience with the program, including how they promote the rebates to customers, the extent of promotional materials displayed in participating store locations, and their general satisfaction with the program.

Retailer Satisfaction

All retailer respondents indicated they were "very satisfied" with the SoCalGas HEER program. Retailers were unable to identify anything specific about the program that was working well or that they would highlight as the greatest strength. One typical comment is that the program is a "win-win situation and [they] hope to keep it going for years to come."

Training and Promotion of the HEER Program

Most of the retailer respondents said that they incorporate the program into efforts to promote efficient products. Retailers reported that they promote efficient appliances from the perspective of improved lifecycle costs and long-term environmental benefits, and they promote the rebate to customers as a way to reduce the first costs of these more-efficient appliances. Retailers considered the rebates to be a tool in their sales "toolkit" to encourage customers to select more-efficient appliances. Retailers tended to agree that the rebates had influenced sales of rebated appliances.

Retailers indicated that rebate forms are not effective promotional materials, and that they would like to use promotional materials such as clings. One respondent summed up the influence of the rebate applications: "They are nice and necessary, but they don't sell appliances." Two retailers noted that customers like to see the brochure that tells them they will get a rebate. Two retailers who have signs and appliance clings (one created in-house and the other created on store templates provided by SoCalGas) indicated that they thought these were effective promotional materials.

Retailers said they often run out of promotional materials. Half (5 of 10) retailer respondents indicated that they did not have enough rebate forms. As one respondent said, "We always run out." They indicated that they did not have any other promotional materials. Two retailers specifically commented that representatives from other utilities were in their stores more frequently than those from SoCalGas, and that these other utilities' representatives provided more training, information, and materials. The OSS staff person interviewed explained that instructions for retailers to reorder more promotional materials are placed on the back of the gift-card raffle coupon pads at locations of one of the POS stores, as well as on the back of application holders at all non-POS stores.

None of the store-level retail staff recalled receiving training on the program from SoCalGas or OSS. However, retailers suggested that training was not necessary for their staff because they work with appliances and therefore are more knowledgeable about the products than the trainers. Three retailers reported that their stores conduct periodic training to ensure that sales staff are aware of current energy-efficient appliances. Three other retailers said they received annual or semi-annual training from manufacturers about new appliances, but received no training specific to appliance rebates.

Effect of ARRA Rebates

Most retailer respondents did not notice any effects on sales when ARRA-funded rebates ended. Retailers advised that appliance sales were depressed due to the economic downturn before and during the time that the ARRA funds were available, which makes it difficult to determine how the "Cash for Appliances" ARRA rebates affected sales. Only one retailer noted a marked difference in their business after the discontinuation of ARRA-funded rebates; this retailer said it would be safe to attribute about a 25 percent decrease in sales to the discontinuation of the rebates. Another retailer noted that the ARRA-funded rebates initially increased their business, but that effect had tapered off, and sales during and after the rebate period were indistinguishable, aside from those that occurred during that brief spike.

Contractor Interview Results

The SoCalGas HEER Program does not systematically track contractors that participate in the program. The program tracking database contains only the names of some contractor businesses that have assisted customers with rebates for insulation, water heaters, and furnaces, but does not have contact names or phone numbers for these contractors. To identify contacts for contractor interviews, the evaluation team identified participating contractor business names in the tracking data provided by SoCalGas and used web searches

to locate phone numbers. SoCalGas then researched some of the application forms to attempt to locate additional phone numbers for those the evaluation team was unable to locate on the web. The original goal was to complete 15 interviews. However, the tracking database contained phone numbers for only 11 contractors. A $50 gift card incentive was introduced mid-way through the data collection effort, which helped to increase the response rate. Of the 11 contacts, interviews were completed with seven contractors, for a completion rate of 63 percent.

Interviews were conducted in December 2011 and January 2012. The purposes of the interviews were to gauge contractor satisfaction with the program, determine the program's influence on contractors' businesses and customer decisions, and identify which marketing strategies and promotional materials participating contractors used most frequently.

Contractor Satisfaction

Contractors generally were satisfied with the HEER Program. They also suggested program improvements. Contractor respondents were asked to report their satisfaction with the program, on a scale of "very dissatisfied" to "very satisfied." Of the seven respondents, six gave a rating of "very satisfied," and one provided a rating of "somewhat satisfied."

Respondents were asked to report with which aspects of the program they were satisfied. Three reported that the rebate process (both online and mail-in) is easy and the forms are simple to complete. Another reason for high satisfaction was the value of the rebate in helping customers purchase energy efficient products.

Program Awareness & Promotion

None of the contractors interviewed reported participating in any training classes and interest in training classes appears to be extremely low.

Some, but not all, contractors appeared to be actively marketing the program to customers. Those that reported reaching out to customers about the program said they promoted the rebates on their company's website and on Facebook, educated customers during consulting appointments, and gave their customers rebate literature. While three of the seven respondents did not report having any program marketing strategies, contractors did not report that they needed any marketing assistance from SoCalGas. One contractor estimated that approximately half of their customers are aware of the HEER rebates before they begin working together.

Program Influence on Contractors' Business and Consumer Decisions

Contractors described how the current HEER Program design affects their business, and the influence of the rebates on customers' decisions to buy energy-efficient products or services.

Contractors said the program had had a variety of effects on their business. Four of the contractors stated that the impacts on their business were positive, while one contractor

described the influence as "moderate." The other three contractors did not report any noticeable increase in their client base as a result of the program.

Contractors widely agreed that the rebates greatly impacts customers' decisions to purchase energy-efficient products. Three contractors said that the availability of the rebate makes the price of the more expensive efficient models much more cost-competitive with entry-level models. One contractor mentioned that the rebates also allowed him to compete with lower-priced, online products. In addition, one contractor said that the availability of a rebate was enough to convince customers to decide to upgrade their insulation.

Participant Survey Results

In order to assess program performance from the participants' perspective, the evaluation team conducted structured telephone surveys with 384[3] program participants. Contact names were taken from the program-tracking data, with the exception of POS customers. Because the program does not track POS customers, contact information for these customers came from gift card raffle entry forms completed by customers who bought appliances and received POS rebates. Some POS customers also were identified through the general population survey. These surveys covered a variety of topics, including program awareness, motivations for participation, satisfaction with program components, and participant awareness of other SoCalGas programs. The surveys were conducted in November and December 2011 and lasted approximately 15 minutes.

In order to evaluate the effectiveness of the different delivery mechanisms, the evaluation team stratified the participant survey sample by the method customers used to participate. These methods include participant-initiated non-POS rebates (e.g., clothes washers), contractor-initiated non-POS rebates (e.g., water heaters), POS rebates, and Water Saving Kits. As this stratification oversampled some groups and under-sampled others, all program-level data presented in this report are weighted (according to number of respective measures in the population for each of the four strata) to correct for disproportionate sampling. Table 13 lists the population, the number of surveys completed, and sampling weights for each stratum.

Table 13: Participant Survey Stratifaction

Strata	Number of Measures in Population	Percent of Total	Number of Measures in Sample	Percent of Total	Weight
Clothes washer, dishwasher (non-POS)	84,169	25%	89	23%	1.06544

[3] 352 interviews were conducted as part of the participant survey. An additional 32 interviews were collected as part of the general population survey.

Strata	Number of Measures in Population	Percent of Total	Number of Measures in Sample	Percent of Total	Weight
Furnace, insulation (attic and wall), storage water heater, pool heater [a] (non-POS)	23,744	7%	88	23%	0.30397
POS customers	117,448	34%	120 [b]	31%	1.10263
Water Saving Kit	115,491	34%	87	23%	1.49553
Total	**340,852**	**100%**	**384**	**100%**	

Note: Measures not sampled included cold-water laundry detergent, a second showerhead for the Water Savings Kit, and tankless water heaters. Customer data were not available for cold-water laundry detergent and tankless water heaters. Second showerheads were not sampled because almost all of the customers who received a second showerhead had received the Water Saving Kit, and preference was given to the Water Saving Kit.

[a] Pool heaters are a very small portion (< 1%) of the measures for which rebates were received. By chance, none of the survey respondents was selected to report their experiences with the rebate for pool heaters.

[b] POS survey respondents included 32 surveys conducted as part of the general population survey and 88 conducted as part of the participant survey. Rebated measures reported by POS respondents included clothes washers (n = 70), dishwashers (n = 36), water heaters (n = 5), furnaces (n = 4), low-flow showerheads (n = 4), and insulation (n = 1).

Detailed findings are presented below.

Program Awareness

Program participants became aware of rebates offered by the SoCalGas HEER program through a variety of channels. The most frequently reported source of awareness was the in-store salesperson at the retail location where the product was purchased (38 percent). This channel was the most frequently reported source for both POS customers and customers who likely completed the rebate application on their own (54 percent and 67 percent respectively). This finding suggests that retail sales staff are acting as a "boots-on-the-ground" sales force for the program by actively promoting the program to customers that may not have heard of it.

The other frequently mentioned sources of program awareness include bill inserts (19 percent) and a variety of SoCalGas-sponsored advertisements, including in-store ads (15 percent), Internet ads (12 percent), newspaper ads (7 percent), and television ads (7 percent). Bill inserts were the most frequently reported source of program awareness among participants who received a Water Saving Kit. Participants who bought equipment that likely would need to be installed by a licensed contractor most frequently said that the contractor was the source of program awareness (47 percent), followed by bill inserts (32 percent). However, these participants make up a small portion of overall program participants.

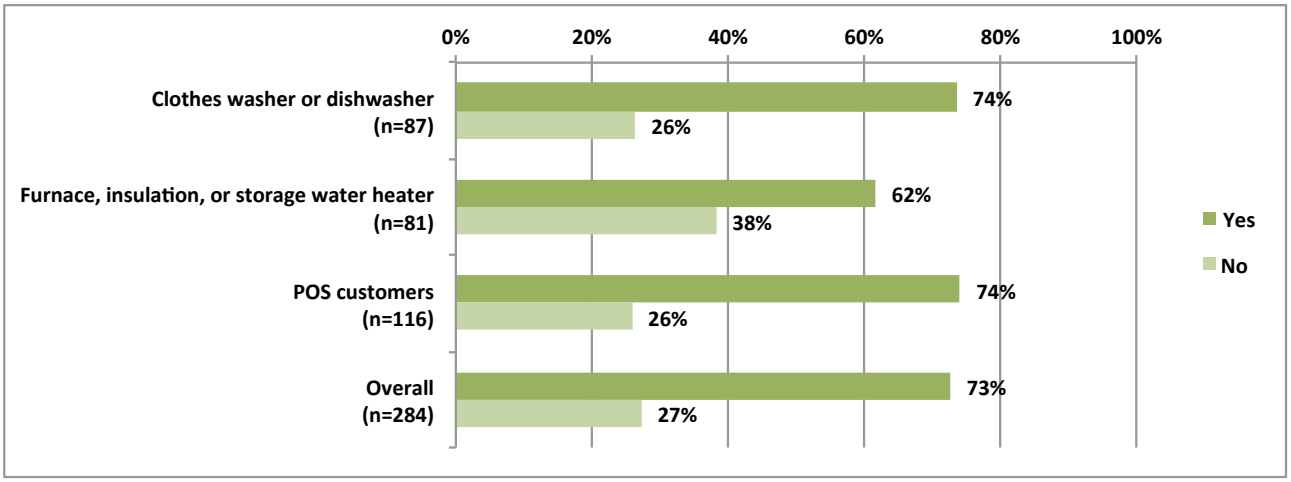
Table 14 displays the different methods by which participants became aware of the program.

Table 14: How did you find out about the rebates available from SoCalGas?

Source of Awareness	Clothes Washer or Dishwasher (n=89)	Furnace, Insulation, or Storage Water Heater (n=88)	Water Saving Kits (n=74)	POS Customers (n=118)	Overall (n=369)
Salesperson	67%	10%	0%	54%	38%
SoCalGas bill insert	10%	32%	31%	12%	19%
Retail store, ad or display on product	16%	5%	0%	31%	15%
Ad on Web	20%	10%	0%	15%	12%
Don't know	9%	8%	24%	3%	11%
Ad in the newspaper	15%	6%	4%	3%	7%
SoCalGas website	0%	0%	22%	0%	7%
Ad on TV	8%	13%	4%	5%	6%
Friend or family	5%	10%	5%	3%	5%
Community event	0%	0%	14%	0%	4%
Contractor	0%	47%	0%	2%	4%
Other SoCalGas event	0%	0%	7%	0%	2%
Ad on radio	5%	1%	1%	1%	2%
Other	1%	10%	0%	2%	2%

However, a majority of participants (73 percent overall) reported that they already had decided to purchase an ENERGY STAR or energy-efficient product before they became aware of the program. Since most participants hear about the program when they already are in the store, this finding may indicate that, by educating them at the store, the program may not be strongly affecting customers' behavior. This pattern was less strong among participants who likely worked with a contractor to install the equipment (62 percent). This may be due to the influence contractors can have participants' decision-making process. OSS staff also pointed out that retail sales staff have been able to influence sales of energy efficient appliances specifically in lower income areas, where customers may be replacing broken appliances and may be highly motivated by the utility bill savings. Figure 11 compares the percentage of participants who had already decided to buy an energy-efficient product to those that had not yet made a decision before hearing about the program.

Figure 11: Had you already decided to buy an energy-efficient model before hearing about the program?

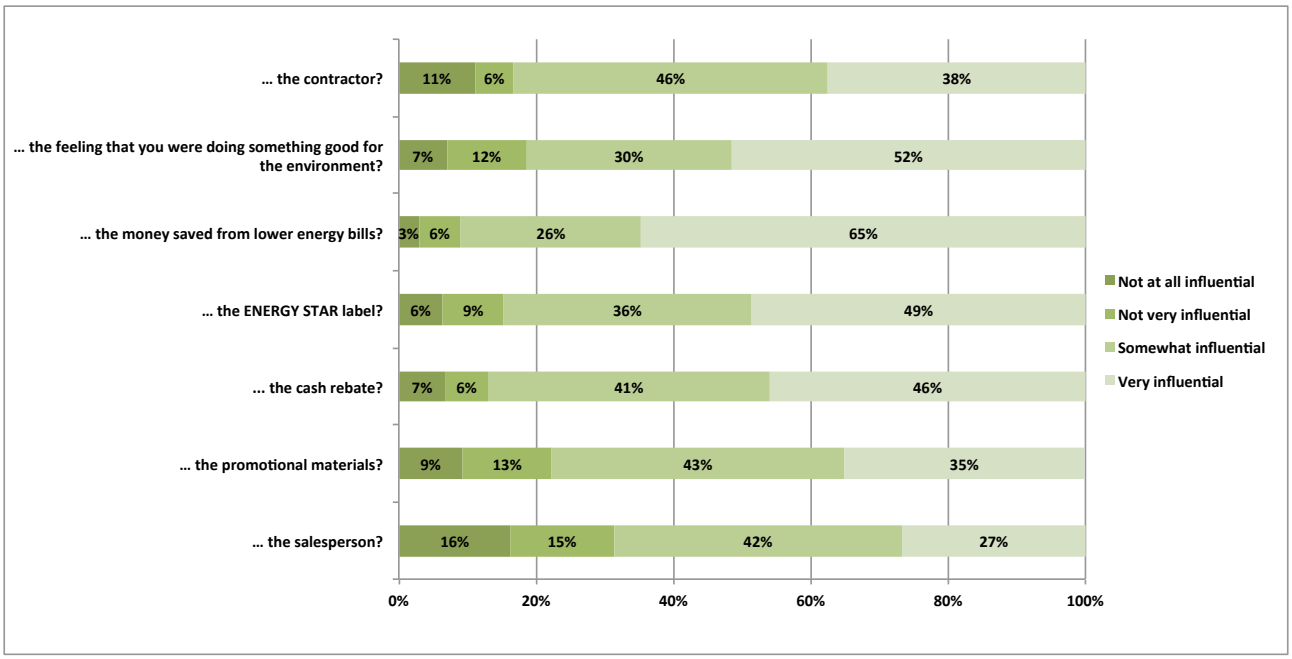


Motivations for Participation

Figure 12 illustrates the level of influence participants reported from a variety of factors. Overall, participants reported many factors that influenced their decision to buy the ENERGY STAR-rated or energy-efficient product. Expected energy savings and the program's cash rebate were the most influential.

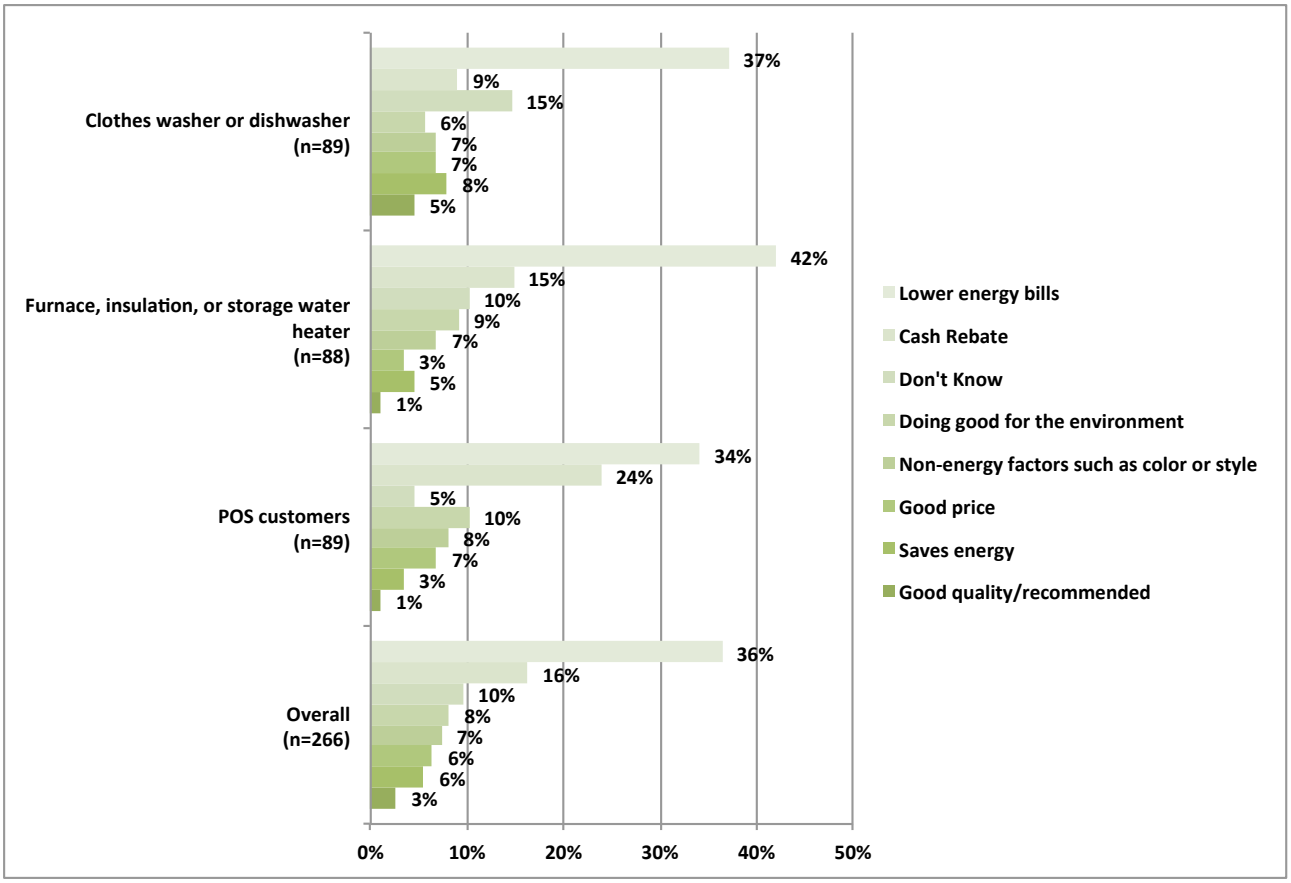
The money the participants expected to save on their energy bill was the most influential factor; 91 percent of participants reported that these expected savings were at least "somewhat" influential. Other factors participants reported as influential included the cash rebate, the ENERGY STAR label, and their contractors (where applicable). In-store sales staff were the least influential; only 69 percent of participants reported that they were at least "somewhat" influential.

Figure 12: In your decision to buy the efficient product, how influential was …



Likewise, when respondents were asked to pick the most influential factor in their decision to purchase the energy-efficient product, they mentioned lower energy bills and the cash rebate most frequently (36 percent and 16 percent, respectively). Lower energy bills consistently were the most influential factor for participants who bought home mechanical equipment or insulation (42 percent), while the cash rebate was most influential for POS participants (24 percent). Other frequently reported responses were a desire "do good for the environment," non-energy factors, and overall price. These findings corroborate the influence ratings discussed previously. Figure 13 lists the percentage of participants who reported each factor by survey stratum.

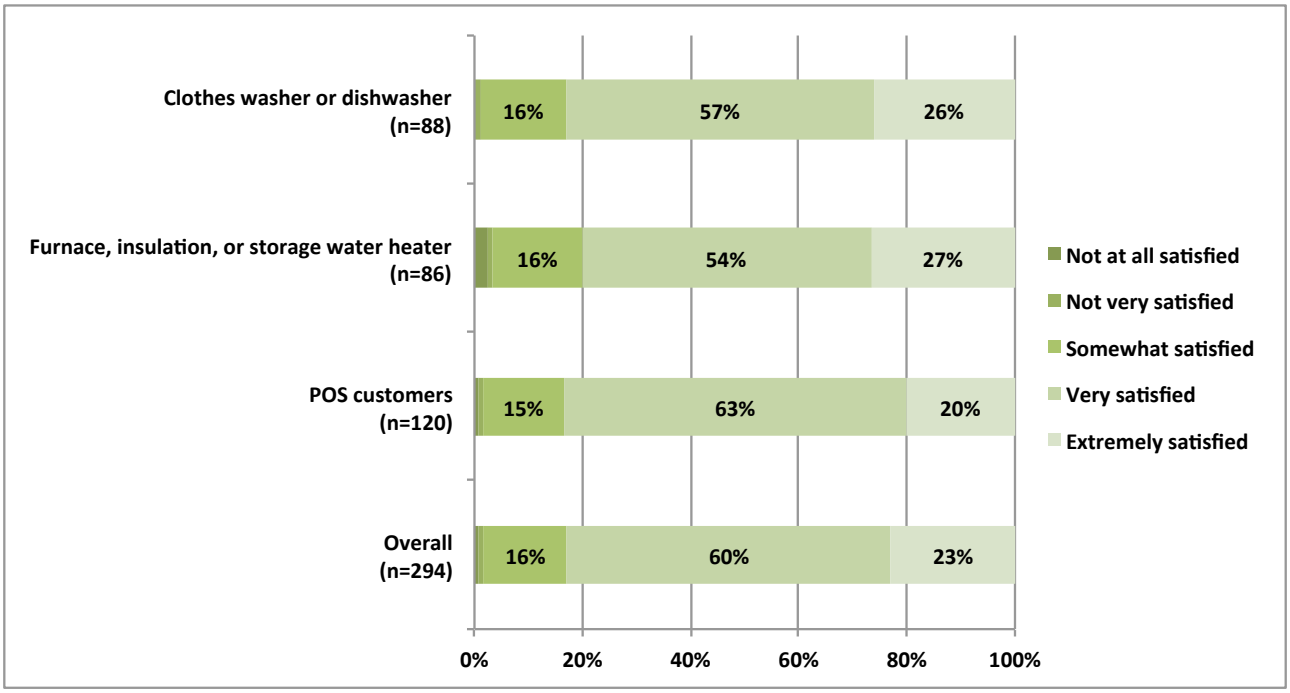
Figure 13: What was the most influential factor in the decision to purchase an energy-efficient product?



Program Satisfaction

Overall, 83 percent of participants reported that they were either "very satisfied" or "extremely satisfied" with the SoCalGas HEER Program. There were few differences by participation method. Only two percent of participants reported that they were either "not very satisfied" or "not at all satisfied." Those few participants who were less than "very satisfied" recommended several program changes that might have increased their satisfaction with it. The two most frequently requested changes were: offering a larger rebate and streamlining the application process. Figure 14 illustrates the overall reported satisfaction with the program by survey stratum.

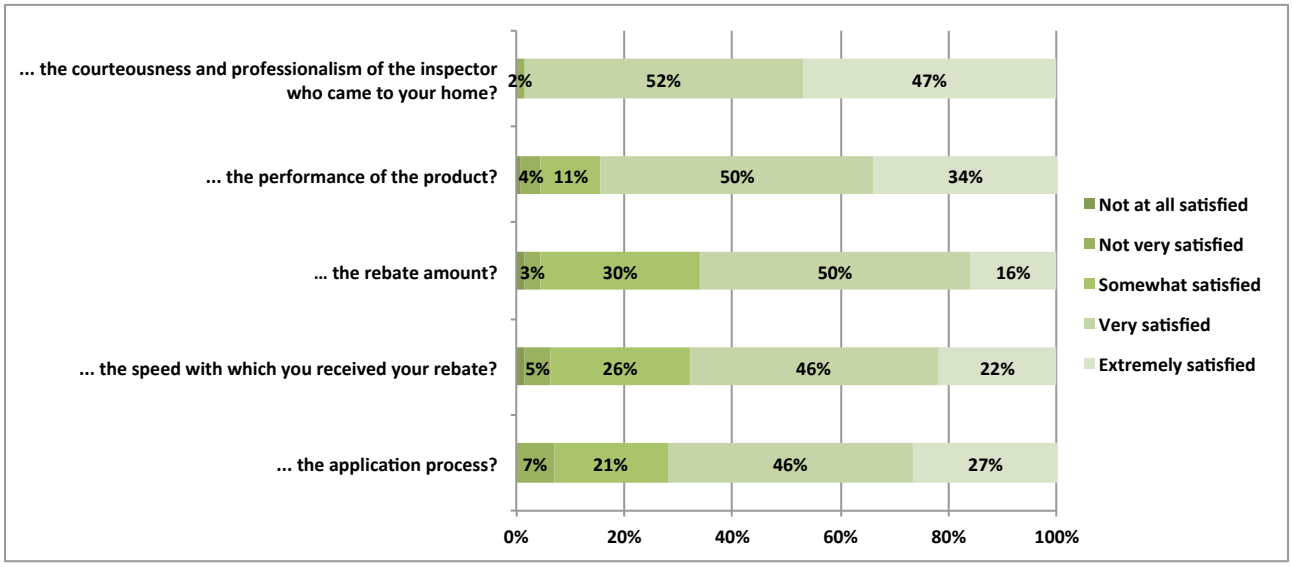
Figure 14: Overall, how satisfied were you with the SoCalGas rebate program for buying energy-efficient appliances and products?



Participants also were at least "very satisfied" with the SoCalGas inspection teams (98 percent). In addition, although only 51 percent of the participants had noticed a reduction in their energy bill since buying the product, 84 percent were at least "very satisfied" with the performance of the equipment.

Figure 15 illustrates the reported satisfaction with each of the program components. In general, satisfaction with the individual program components was quite high. Participants were comparatively less satisfied with the rebate amount and the amount of time it took to receive the rebate. Respectively, only 66 percent and 68 percent reported that they were at least "very satisfied" with each program component. Participants also were comparatively less satisfied with the application process; seven percent of participants reported that they were "not very satisfied" with the application process.

Figure 15: How satisfied were you with ...



Overall, when asked what changes they would make to the SoCalGas rebate program, participants most frequently responded that they would not make any changes (35 percent). Participants who would make changes frequently requested that the program increase program awareness through additional advertising (17 percent - desired channels were not specified) and increase the rebate amounts (15 percent). Other requests were mentioned by fewer than five percent of these respondents include: providing rebates for additional items, improving the rebate payment turnaround, providing online rebate applications, simplifying rebate applications, and applying the rebates upstream (i.e., have the retailers incorporate the rebate amount into the product's retail price). Since most participants requested no changes to the program, these recommendations echo the other findings that show a high level of satisfaction with the program.

Of the approximately seven percent of the program population who were likely to work with contractors (e.g., participants who installed insulation or water heaters), 71 percent reported that they were required to certify that the necessary permits were filed and that a certified contractor was used. Of those, a majority (93 percent) did not have any concerns about the process.

Water Saving Kit

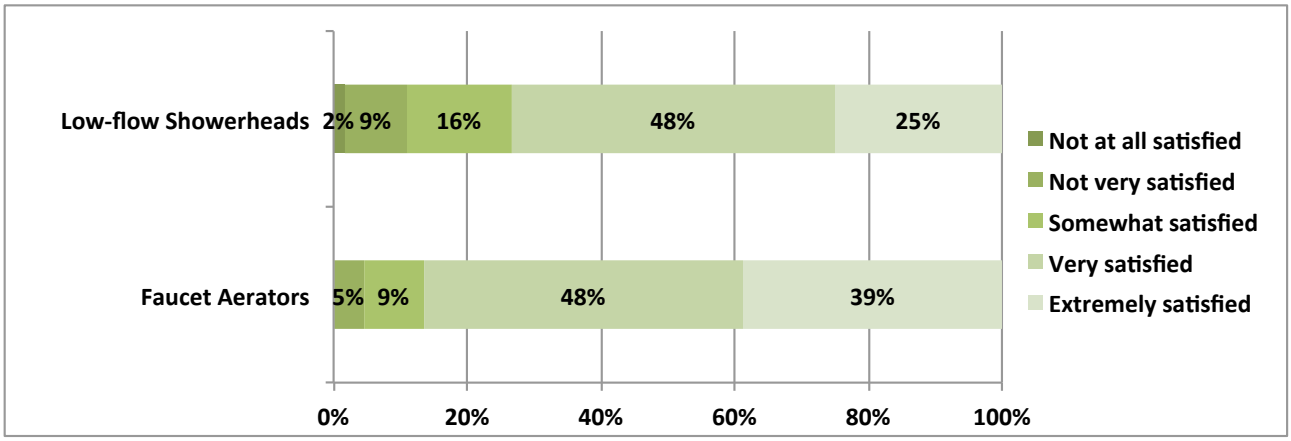
Of participants who received the water-saving kits, 76 percent had installed the low-flow showerhead, and of these, 88 percent still had it installed at the time of the survey.

Seventy-nine percent of customers who received the water-saving kit installed at least one faucet aerator, with 13 percent installing one aerator, 31 percent installing two aerators, and 36 percent installing all three faucet aerators. Thirteen percent of customers who received the water-saving kit did not install any faucet aerators (the remaining eight percent could not recall if they had installed the aerators). Their reasons for not installing the aerators included:

they didn't fit, they didn't think they were necessary (usually because their faucets already had aerators), they weren't included in the kit, they did not have time to install them, or they weren't able to install them. Of the 79 percent who installed at least one aerator, 93 percent still had at least one installed at the time of the survey.

Participants who received a water conservation kit as part of the HEER Program were asked about their satisfaction with the low-flow showerheads and faucet aerators included in the kit. Overall, participants were more satisfied with the faucet aerators than with the showerheads; 87 percent of the participants said they were at least "very satisfied" with the faucet aerators, while 73 percent were "satisfied" with the showerheads. Figure 16 illustrates the reported satisfaction with the showerheads and aerators.

Figure 16: How satisfied are you with the performance of the ...



4.1.4 Comparison to Best Practices

Program processes were compared to best practices as outlined in the Energy Efficiency Best Practices Self-Benchmarking Tool.[4] As described below, the evaluation team evaluated the SoCalGas HEER Program with respect to best practices in Program Theory and Design, Program Management, and Program Implementation.

Program Theory and Design

The program theory is well articulated in the Program Implementation Plan (PIP), and customers are satisfied with their participation in the program. Eighty-three percent of participants were either "very satisfied" or "extremely satisfied" with the program overall. However, surveys with participating customers suggest that 73 percent of participants already had decided to purchase an energy-efficient model before hearing about the program,

[4] Best Practices Benchmarking for Energy Efficiency Programs, Self-Benchmarking Tool. See http://www.eebestpractices.com/

which suggests that the program may not be influencing purchase decisions for most customers participating in the program.

Program Management

Project Management

Management responsibilities for the HEER Program are very well-defined. At the time of this evaluation, SoCalGas developed marketing materials, processed rebates, and mailed the rebate checks. OSS conducted in-store field services, including the placement of promotional materials and retailer training.

Reporting and Tracking

The program tracking database does not systematically track contractors participating in the program. Although the database contains a field for the contractor name, for the vast majority of records, this field contains the customer name. For those contractor names that are contained in the database, only the business name is recorded, while contractor contact names and phone numbers are not recorded. Tracking contractors that assist their customers with rebates is an important consideration for the program. Although contractors do not currently have a strong role in the SoCalGas HEER Program, the program may consider leveraging active contractors in the future to market the program rebates to their customers. At a minimum, systematically recording contractors in the database will allow the program to track contractor participation.

The program has two Program Performance Metrics (PPMs). For the first PPM, the program tracks the percentage of rebates made through the POS method, and for the second PPM, the program tracks the percentage of participating stores located in HTR zip codes.

It is worth noting that the program-tracking data do not contain a simple way of identifying POS rebates. The tracking data are set up so that each record is either a single rebate (non-POS) application submitted by a customer, or it is an invoice from a POS retailer or manufacturer for all the rebates for a particular measure that were provided in a particular month. There is no separate field indicating whether the record is POS or non-POS; therefore, making this determination is less than straightforward and involves examining various fields to determine if they contain a retailer name, manufacturer name, or a customer name.

The program recently implemented an electronic application process, and online forms are readily accessible, which is a recommended best practice that not only speeds the participation process, but simplifies reporting and tracking as the data entered in online forms do not need to be manually entered when rebates are processed.

Quality Control and Verification

SoCalGas verifies 5 percent of installations before issuing rebate checks. The exception is self-installed insulation, which is 100 percent inspected.

SoCalGas also verifies the retailer field services are conducted according to program requirements. OSS provides SoCalGas with a full report after each round of store visits, including photographs of each store, photographs of placed marketing materials, and a signature from an appliance department staff person at each store.

SoCalGas maintains extensive documentation regarding how rebates are to be processed, including procedures for verifying qualifying models and requiring proof of purchase and account number for all non-POS applications.

Products rebated by the program appear to be quality, as 84 percent of participants were either very satisfied or extremely satisfied with the performance of the purchased appliance or product.

Program Implementation

Participation Process

Participation in the program is relatively simple, especially for POS customers, as they receive the rebate instantaneously at the cash register. Customers can also apply for rebates online. The program involves both larger retailers that can comply with the POS sales reporting requirements and also allows smaller retailer to participate by stocking paper applications in their stores.

Marketing and Outreach

The program capitalizes on the ENERGY STAR brand recognition as part of the criteria for qualifying appliances. The program conducts training and provides rebate applications and promotional materials to participating retailers. Retailer respondents expressed a desire for more promotional material, such as appliance decals or "clings." Interestingly none of the retailers interviewed recalled receiving training on the program – however, they also felt that training was not necessary. On the other hand, the program does not appear to be leveraging contractors to market the program to their customers.

4.1.5 Conclusions and Recommendations

Conclusions

Primary research findings stemming from this process evaluation of the SoCalGas HEER Program are outlined below. Overall, customers, retailers, and contractors were satisfied with the program. However, the influence of the rebate on purchase decisions may have been limited, as the majority of participants reported that they decided to purchase an energy-efficient appliance or product prior to hearing about the program.

1. **Rebate processing times are still somewhat lengthy, ranging from six to eight weeks.** Over two-thirds (68 percent) of participants were "very satisfied" or

"extremely satisfied" with the wait time for receiving their rebate. An additional 26 percent were "somewhat satisfied." The waiting period could be reduced, since a four- to six-week waiting period is common for similar residential programs.

2. **Overall satisfaction with the program is quite good.** Customers are very satisfied with the SoCalGas program. They are generally satisfied with many of the program components, including the inspection process and the performance of the rebated product(s). Participants who received Water Saving Kits were satisfied with the low-flow showerheads and faucet aerators they received. Participating retailers and contractors also were generally satisfied with the program.
3. **Some retailers run out of promotional materials between store visits conducted by OSS.** Half of the ten retailer interview respondents reported that they were out of stock of the HEER promotional materials. OSS conducts stores visits only once or twice per year. One purpose of the store visits is to replenish promotional materials and rebate forms.
4. **The program does not leverage contractors to promote the program**, as evidenced by the fact that contractors are not systematically tracked in the program database and so few were included in the program-tracking data. Water heater, furnace, and insulation contractors praised the rebates as helping influence customers to buy more energy-efficient equipment. However, these contractors offered mixed assessments regarding any impacts the rebates had had on their business.
5. **Retailers had no awareness of any training for the HEER Program.** This could be due to staff turnover, or the fact that not all staff were present during quarterly store visits conducted by OSS. While retailers reported that they had not received training, they also noted that they did not think training was necessary. Retailers reported that they used the rebates to promote energy-efficient products, but this was not consistent and depended on the particular customer interaction.
6. **Retailers generally did not notice a drop in sales following the end of the statewide ARRA-funded "Cash for Appliances" rebates.** Only one retailer reported a small decrease in sales when the rebates ended. This suggests that the discontinuation of the ARRA-funded appliance rebates may not have adversely affected the program.
7. **In-store sales staff were the most frequent source of program awareness reported by SDG&E HEER participants,** particularly for equipment selected by the participant (e.g., POS rebates and white good, such as home appliances). Participants who were buying bigger-ticket items, such as furnaces, insulation, and domestic water heaters, most frequently reported that contractors were their source of program awareness. These participants and those who received Water Saving Kits also frequently mentioned bill inserts as a source of awareness of the program.
8. **The SoCalGas HEER program may be having a limited influence on participants' purchase decision.** While retail staff are good at increasing awareness of the rebate, and participating customers often learn of the rebate in the store, the rebates do not seem very powerful at influencing customers to buy energy-efficient equipment. Overall, 73 percent of the participants reported that they had already decided to buy an energy-efficient product before they were aware of the rebates offered by SoCalGas.

Recommendations

Recommendations stemming from these findings are below.

1. **Continue plans to hire an external firm to process rebates.** An external firm could decrease rebate processing times.
2. **If the purpose of the program is truly to influence consumers to purchase more energy-efficient products, then SoCalGas may want to consider redirecting the emphasis of program promotion away from retail stores.** The results of this evaluation suggest that customers often learn about the rebates inside the store, but a majority of customers make the decision to buy energy-efficient appliances and products before learning about the rebates. This was especially the case for customers who received POS rebates and those who purchased clothes washers and dishwashers. Because customers may conduct product research online and make much of their decision before entering the store, one way to influence the purchase decision is through online banner ads or Google-sponsored links. Then the utility would get credit for influencing customers who report they learned of the program online or through the utility website, before making their purchase decision. The program also could consider leveraging contractors to promote the program to their customers.
3. **Alternatively, if the true purpose of the program is to increase customer satisfaction by showing a "goodwill gesture" by offering rebates, SoCalGas should continue plans to increase the frequency of retailer store visits.** In-store promotion of qualifying products, including marketing materials and promotion by retail sales staff, appears to be an effective means of increasing awareness of the availability of the rebates. More frequent store visits will ensure that qualifying products are labeled correctly, promotional materials are available in all stores, and retail staff are appropriately trained. Reminding retail staff of how to order depleted promotional materials could also prove to be valuable.

Table 15 shows detailed recommendations, and includes a status update on the recommendation from the 2006-2008 evaluation.

Table 15: Summary of Issues and Recommendations for the SoCalGas HEER Program

Issue	Consequences	Steps SoCalGas Taking to Address Issue (if any)	Additional Steps We Recommend	Difficulty in Addressing (H/M/L)	Value in Addressing (H/M/L)
2006-2008 Evaluation Finding: Application processing takes too long.	Rebate processing is inefficient and wait times discourage participation.	SoCalGas has developed an online application and has decreased the wait time for rebate processing to six to eight weeks.	Continue plans to hire an external processing firm to process rebates and reduce wait times.	M	M
Most participating customers had decided to purchase an energy-efficient appliance or product prior to learning about the program.	The rebates may not be influencing customers' decisions to purchase an energy-efficient appliance or product.	None	Redirect the emphasis of program promotion away from retail stores. (However, if the true purpose of the program is to contribute to customer satisfaction, continue with plans to increase the frequency of retailer store visits.)	M	H

4.2 Multi-family Program

4.2.1 Background

The Southern California Gas Company (SoCalGas) has several programs that serve its customers residing in multi-family dwellings. This report examines the following five programs in detail:

- ***Multi-family Rebate Program (MFRP).*** This program is offered to all multi-family buildings (consisting of two or more dwellings) with gas service in SoCalGas service territory. Rebates are available for central system hot water boilers, central system water heaters, natural gas storage water heaters, attic and wall insulation, high-efficiency dishwashers, central natural gas furnaces, and central demand hot water controllers. Rebates are rewarded on a first-come, first-serve basis. MFRP instituted a reservation system for the central demand hot water controllers to hold money for 45 days after notification of acceptance by SoCalGas. Contractors who serve the multi-family sector often are responsible for recruiting participants, selecting and installing the equipment, and processing the rebate check.
- ***Multi-family Direct Therm Saving*.** This third-party program, operated by Honeywell, installs showerheads and aerators in tenant units in one half of the SoCalGas territory.
- ***Multi-family Home Tune-up Program.*** This third-party program, operated by Ecos Consulting, installs showerheads and aerators in tenant units located in the other half of the SoCalGas territory.
- ***On Demand Efficiency Program.*** This third-party program, operated by the Benningfield Group, installs a proprietary hot water controller in multi-family buildings.
- ***Solar Pool Heating Program.*** This third-party program, operated by Energx Controls, installs solar pool heating systems in multi-family properties.

4.2.2 Data Collection Activities

Data collection tasks for the evaluation of the multi-family programs included a survey of 50 participants across the programs and 51 non-participants. The evaluation also included in-depth interviews with SoCalGas staff and ten current and former contractors serving the program, and ride-along observations with the Quality Assurance/Quality Control (QA/QC) inspector.

The evaluation team also analyzed the program-tracking database (CRM) to compare the survey sample with all multi-family program participants.

4.2.3 Research Findings

This section summarizes the information collected from the telephone surveys and in-depth interviews. Key findings and program information are summarized at the end of the chapter and are followed by recommendations for program improvements.

Survey of Building Owners and Managers

Early in the survey, participants were asked what measures had been installed at their property. Table 16 shows this information and compares the measures installed by the survey sample to those installed by all participants of the multi-family programs tracked by SoCalGas. The survey instruments are included in appendix to the main report.

Table 16: Comparison of Measures Installed By Sample and Program

Measure	Percent of Sample Who Installed Measure	Percent of All Participants Who Installed Measure
ENERGY STAR dishwashers	20%	30%
Attic, wall, or pipe insulation	4%	2%
High-efficiency water heaters	43%	25%
Natural gas water heater or boiler controllers	2%	6%
Space heaters	0%	1%
Low-flow showerheads or faucet aerators	17%	14%
Pool heaters	13%	4%
Solar water heating system	0%	0%
Pump demand control	2%	19%

Table 17 displays the participant and non-participant contacts for the four types of buildings who were interviewed. Rental properties clearly dominate the sample. Neither the tracking database nor the survey provides ownership type so the evaluation team is unable to determine if condominiums are participating but were missed in the sample selection.

Table 17: Types of Multi-family Buildings Interviewed

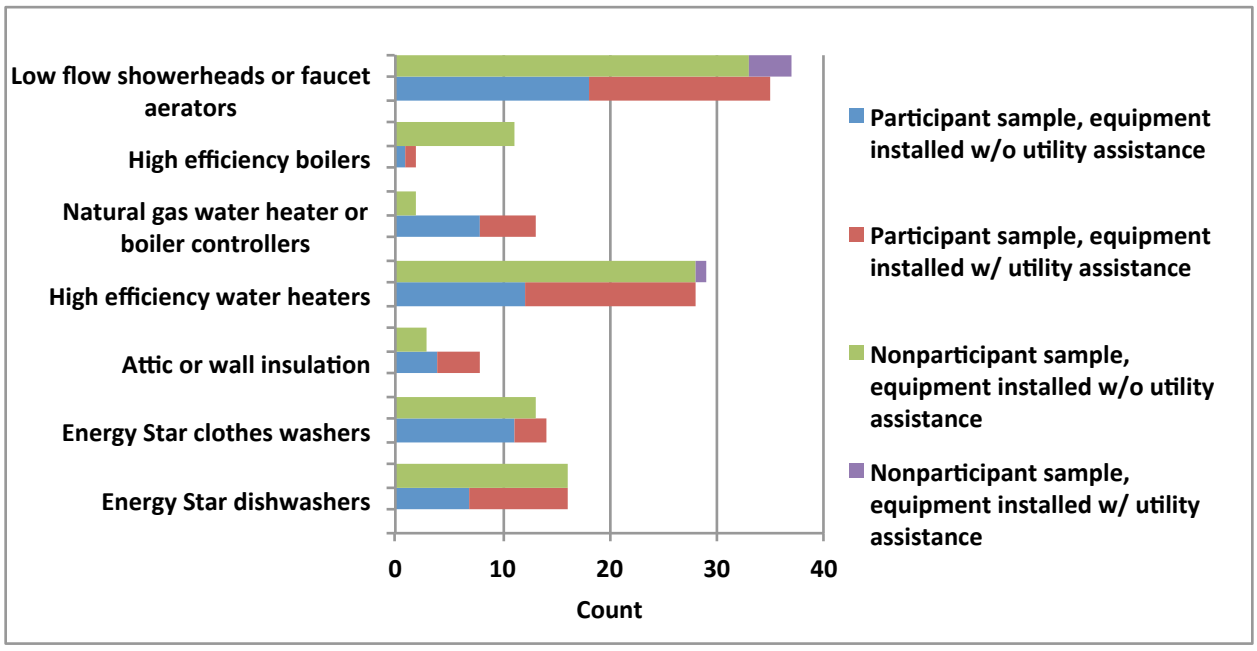
	Sample of Participants	Sample of Non-Participants
Rental property	43	42
Condominium	4	1
Owner-occupied	2	8
Public housing	1	0
Total	**50**	**51**

The tracking system only provides data for the Multi-family Rebate, Multi-family Direct Therm, and On Demand Efficiency programs. Because the five different programs serve the same population, it often is difficult to determine which buildings are participating and which are not. Most building owners and managers did not or were unable to identify the name of the programs they participated in, and most attributed the program to the installer rather than SoCalGas. One of the most confusing elements of this survey is that many of the contacts at both participating and non-participating buildings either had participated in more than one

of these programs, earlier versions of these programs, the Energy Saving Assistance Program, and/or programs offered by other utility efforts, including programs sponsored by Southern California Edison, municipal electric utilities, or water utilities.

Figure 17 shows the activity for buildings with gas measures covered by the various programs. It is worth noting that the non-program activity is equal to or greater than the program activity for all measures except attic insulation, dish washers and boiler controllers. For many of the measures, participants reported having installed more measures without utility support than with utility incentives.

Figure 17: Space and Water Heating Measures by Participant and Non-Participant Buildings



Participant respondents were asked how they found out about the program in which they had participated. Only 12 of the 50 said they had used a SoCalGas mailing or the SoCalGas website to find out about the program. Non-participants were asked if they knew about the different multi-family programs. Eight respondents said they knew about the showerhead and aerator replacement programs, five had heard of the rebate program, three knew about the low income program, and one had heard about the solar pool heater program.

Participant respondents were asked if they had used a contractor. A little more than half said they had. It is unclear if the other half did the work themselves or did not think of the firm that helped them as a "contractor." Of those using contractors, 26 percent said that the contractor approached them first about participating in the program. Most respondents (87 percent) were pleased with the work the contractors did. Only ten percent (5 of 50) of the participant respondents reported some problem with the equipment installed. Of those, three had problems with showerheads leaking, one with aerators jamming, and one with a non-working dishwasher. No one reported that they had problems with the contractors.

Table 18 displays the measures respondents said they plan to install in the next two to three years. There are not many measures on these lists. Non-participants appear to have plans for measures with more substantial potential energy savings. Of the 15 participant respondents who had plans to install energy-efficient measures, 12 said that participation in the program made them more likely to take these planned measures. Only one respondent said that the Multi-family Rebate Program experience made them less likely to take these actions.

Table 18: Future Energy Efficiency Plans

	Participants	Non-Participants
ENERGY STAR dishwashers	1	1
ENERGY STAR clothes washers	1	1
Attic or wall insulation	1	0
High-performance dual-paned windows	5	0
Cool or green roofs	3	0
High-efficiency water heaters	0	4
Natural gas water heater or boiler controllers	1	0
Space heaters	0	2
ENERGY STAR programmable thermostats	1	0
Low-flow showerheads or faucet aerators	2	2
Pool heaters	1	1
Solar water heating system	0	3
On-demand intelligent pump	0	0

Respondents were asked whether their properties have coin-operated clothes washers. They also were asked who owns the machines. Table 19 shows that half of the buildings have coin operated machines owned by outside firms.

Table 19: Ownership of Coin-Operated Washing Machines

	Participant		Non-Participant	
	n	Percent	n	Percent
Do not have coin-operated machines	9	18%	8	16%
Owned by property	13	27%	13	26%
Owned by outside firm	27	55%	30	58%
Total Known	**49**		**51**	

Table 20 shows respondents' interest in a program that would assist them in replacing clothes washers they own with energy-efficient washers. The level of interest is surprisingly low, since building owners pay the electricity, hot water, and water bills associated with the clothes washers. It appears that respondents are not fully aware of how much money that they could save by replacing their old machines.

Table 20: Interest in Replacing Clothes Washers

	Mention of $300 Rebate			
	Participant		Non-Participant	
	n	Percent	n	Percent
Not at all interested	0	0%	2	17%
Not very interested	1	10%	2	17%
Somewhat interested	1	10%	4	33%
Very interested	4	40%	2	17%
Extremely interested	4	40%	2	17%
Total	**10**		**12**	

Observations and Feedback from Contractor

This section combines discussions with staff, ride along observations, and interviews with contractors. Two days of ride-alongs were conducted with QA/QC verification staff who were doing pre and post inspections. Contact was made with ten contractors who now supply or provided services to the SoCalGas multi-family programs. A summary of the issues discussed follows.

The Compartmentalization of Measures

Most of the contractors contacted for this evaluation said they specialize in installing one type of measure. Most of them focus on controllers. Another group installs aerators and showerheads, and one contractor installs only dishwashers. No contractor addresses the needs of the buildings or its tenants with a comprehensive approach. Therefore, contractors tend to address the easiest measures but may not deal with others that can yield greater energy savings. In addition, each product effectively has its own salesperson. Due to this specialization, building owners are approached by a variety of salespeople who want them to install a specific product(s). This is bothersome for the building managers and inefficient for the contractors.

The evaluation team spoke with several contractors who no longer work in the SoCalGas MFRP. Most of the contractor respondents said they had stopped working for the program because they cannot work for it profitably. They offered several reasons for this. The main reason is that all of the larger buildings already have had some measures installed, which leaves a pool of smaller buildings or those that already have been served. Also, respondents said their sales costs have gone up, but profits have gone down, because the number of installations per sale and the incentive amounts have decreased.

Respondents expressed frustration that the program does not provide comprehensive multi-family solutions. Each salesperson promotes only the products they provide instead of addressing the buildings' overall needs or SoCalGas's concerns about finding deeper savings.

During site observations, the evaluation team witnessed the installation of new boilers and controllers, yet none of these systems had any pipe insulation, even when the boiler was

located outdoors. There are no incentives for service providers who provide advice to multi-family property owners/managers. Because the contractor receives rebate funds only for equipment installed, they receive no benefit for design assistance or for implementing behavioral changes such as changes to operations and maintenance procedures.

Interaction with Energy Savings Assistance Program

Contractors and SoCalGas staff said they had issues with the integration of MFRP and the Energy Savings Assistance Program (ESAP). Contractors that operate under the Direct Therm and Home Tune-Up programs mentioned similar issues. Contractors complained that they recruited a multi-family property for services, and then had to wait to deliver those services while SoCalGas determined if there were any ESAP-qualified households within the property. In some cases, the contractor refers potentially low-income multi-family buildings to ESAP. ESAP and the Direct Therm and Home Tune-Up programs have worked out a solution: ESAP determines if they will be able to treat the identified building, and if they will not, ESAP will allow the third-party programs to install aerators and showerheads in every unit regardless of the residents' income. This is a more efficient solution than forcing the third-party program implementers to do the buildings but skip the low-income units. The two contractors also expressed that they would like the ESAP release process to be completed more quickly.

Additional issues concern having the five different programs (six including ESAP) service the same buildings. There is no single tracking system to show which services have been provided to which buildings and units. Given the programs' overlapping missions, contractors may install energy-saving measures through one program that replace a measure installed under the other program. For instance, respondents involved with the Direct Therm and Home Tune-Up programs claimed that the showerheads they use are better than the ones installed by ESAP, because their showerheads use 1.5 gallons per minute instead of two gallons per minute. As a result, these contractors said they install their units as replacements for those installed by ESAP. This calls the programs' claimed savings into question, since deemed savings assume that the units that were replaced were less efficient.

Verification and Payments Issues

During one verification ride-along visit to a multi-family complex, the evaluation team checked the three boilers that had been installed and noted on the inspector's work order. However, after the inspection, the building manager said that four boilers had been installed through the program, and wondered why the inspector had not had to look at the fourth one. The inspector said that his work order covered only three of the boilers and that he likely would return soon to verify the fourth. After leaving the complex, the inspector said this kind of occurrence was fairly common.

Several contractors also said that their payments for jobs were similarly fractured. For instance, they would receive partial payments for a job at a single complex. These partial payments were difficult to track because they did not receive an itemized description of which job elements were included in the payment, and therefore had to spend time tracking payments without knowing if they were being paid fully for completed jobs.

Several of the contractors also said that SoCalGas took significantly longer to pay contractors than did PG&E and SCE. One contractor noted that the profit margin for these projects was not large enough to cover these delays and therefore no longer did SoCalGas jobs. Instead, he was concentrating his efforts in the PG&E MFRP because PG&E paid more quickly, even though PG&E's rebates were lower than SoCalGas's or SCE's.

Multi-family Direct Therm and Multi-family Home Tune-Up

These programs provide similar services across the SoCalGas service territory. In the current program cycle, Direct Therm has a goal of 1.32 million therms saved and had achieved 1.27 million therms as of February 2012.. Home Tune-up has a goal of approximately 870,756 gross therms saved and has achieved 459,000 gross therms as of February 2012. The evaluation team did not receive tracking data for either program.

The programs have developed an effective way to market and then install measures in multi-family tenant spaces. Each program has marketing teams that have recruited buildings into the program. Their strategy is to recruit property management companies and then to service all of the buildings controlled by that property manager. They also have worked with these property managers to schedule the showerhead and aerator installations when the managers are changing smoke detector batteries. Through this process the programs have overcome two of the most difficult challenges in working with multi-family properties. These programs can increase savings by installing more than showerheads and aerators. A more comprehensive approach would make these programs more desirable and cost-effective.

Replacing showerheads may not save as much energy as DEER assumes. The evaluation of the 2006 Low Income Energy Efficiency Program compared the amount of water used by the existing showerheads with the usage of the replacement showerheads. Results showed that the measured water savings were less than expected, primarily because minerals accumulated in the old showerhead delivered less water than they were designed to deliver. If these two programs are to continue only delivering showerheads and aerators, a similar study of actual flow rates should be conducted to prove savings assumptions.

On Demand Efficiency

The On Demand Efficiency program has a goal of saving 3.4 million therms and has realized 27 percent of this goal. This program installs a proprietary water pump controller. This program is very successful in recruiting buildings. The controllers are proprietary, so the evaluation team cannot assess if the savings are being achieved. It is important to do pre- and post-monitoring of systems to verify assumed savings.

The evaluation team also is concerned that this program only attempts to lower use by controlling the pump and does not approach water heating comprehensively. For instance, researchers observed treated sites where no insulation had been installed on hot water lines even when units were outdoors. The program also does not address the efficiency of the water heaters.

Multi-family Solar Pool Heater Program

The operator of the Multi-family Solar Pool Heater Program informed the evaluation team that he had suspended the program after only two installations. The economic calculations used by SoCalGas to justify the program required that the equipment last 15 years to be cost-effective. Although the operator believed that the equipment would last 15 years, equipment manufacturers would not offer a 15-year warranty. The operator explained that this is why they left the program. Based on this information, it appears that solar technology is being treated differently than other technologies, none of which have warranties that are as long as the technologies' assumed useful lifetime.

Opportunities

The Multi-family Rebate and third-party programs have been offered for many years. Many of the easier measures already have been installed across the service territory. Going forward, the program must identify new measures to include. Some possibilities are discussed below.

Clothes Washers

Most of the properties surveyed (79 percent) have coin-operated clothes washers on the premises. Survey results indicate that most apartment complexes with coin-operated washing machines (64 percent) do not own these machines. The evaluation team called several companies that advertise supplying laundry machine to apartments in California. Contacts with these companies suggested that it is common for the supply company to lease the space and own the machines. A smaller percentage of these companies lease the machines to the building, which shifts responsibility for maintenance from the apartment owner and managers to the equipment owner.

The on-site observations and subsequent calls to laundry suppliers revealed that machines maintained under leased-space arrangements seldom are energy-efficient or water-saving. One respondent said, "Most of the machines we install are older variety top loaders."

The leased-space arrangement is a major barrier to energy efficiency in apartments, where energy and water savings can be substantial. The owners of the machines have little incentive to install new machines, since they do not pay water, electricity, or hot water bills, and the small rebates are not enough to convince these laundry supply firms to install the more efficient units. In addition, the current incentive based on savings from changing from standard to high-efficiency clothes washers does not provide enough incentive to get laundry suppliers to install the newest technologies.

One way to get more efficient machines installed is to educate building managers about how much operating the older machines costs them. SoCalGas could implement an education program to put pressure on these suppliers to install the more efficient machines. SoCalGas also could distribute detailed reports to apartment owners about the value of signing leases with laundry firms that offer only high-efficiency units.

An alternative option might be attractive for owners, suppliers, and tenants: using cold-water-only washing machines. This alternate program design is described below.

- The owner of the machine (either the building management or the laundry-leasing company) is given one cold water-only machine for free.
- The owner of the machine has to agree to charge $0.25 less per load for this washer than for the other washers in the facility.[5]
- The facility must post a large sign explaining the benefits of cold water washing, including the reduced wear on clothes because the more-efficient machine does not use an agitator.
- Although manufacturers are experimenting with cold-water-only machines, they are both uncommon and more expensive than the usual washers. As a simple and cost-effective solution to test this program option, installers can connect only the cold water line on a regular machine.
- Pilot program staff/participants can post signs in multi-family laundry rooms with a phone number tenants can call if the machine is in such demand that tenants want a second one installed. The program should monitor some laundries to see how much the cold-water-only machines are used. Many suppliers operate via card machines instead of coins. These should be able to provide use data quite easily, as long as data are kept confidential.

Because the machine uses only cold water, it will cost substantially less to operate than a regular energy-efficient machine. It is difficult to predict the savings, as some loads would have been washed in cold water anyway. In fact, people needing to wash multiple loads still could use the other machines for their hot water loads. This is why the education component is essential to the program. Part of the justification for the free unit is the educational benefit of promoting cold water washing. People need to experience the benefits of cold water washing, and laundries should differentiate by charging more for loads done in hot water. Tenants have a choice: wash their clothes in a new unit that treats their clothes more gently and costs less to operate or use the old unit and pay more.

Dishwashers

The evaluation team discovered one issue with the SoCalGas program. One contractor who is installing dishwashers in SoCalGas territory said that SoCalGas does not check to ensure dishwasher is working. This means that SoCalGas may be incenting some units that would have been replaced anyway. A bigger issue is that the installer does not handle removal and

[5] $0.25 is about the savings that EPA estimates a typical household will save per load by switching to an energy-efficient washer. Actual savings to laundries could be higher in SoCalGas territory because rates for electricity, gas, and water are higher than average, and because the EPA estimate does not include savings from using only cold water for washing.

recycling of the old units. If the replaced units are re-installed, the assumed savings are not realized. Based on this, it is recommended that the program have a mandatory recycling component.

Condensing Water Heaters

Current program requirements allow gas water boilers that achieve 82 percent efficiency. Newer condensing water heaters achieve 94 percent efficiency. The program should consider discontinuing the promotion of conventional boilers and instead qualify only condensing units.

4.2.4 Comparison to Best Practices

Of all of the residential sectors, multi-family is the most difficult for which to provide energy efficiency services. The split incentive represents a barrier that programs have found nearly impossible to address. Existing programs have picked at the edges of multi-family potential by offering incentives that generally attract interest from building management for common areas where the management pays the utility bills and benefits directly from any energy savings that are generated. Any measures that are done in tenant spaces generally are limited to those that can be offered to owners for free. These efforts capture the "low-hanging fruit," but make it much more difficult to obtain investments in the bigger-ticket items.

The California IOUs have not published a best practice report for the multi-family sector in several years. Since then, several new programs have been developed that surpass the SoCalGas program offering. The elements of a best practice multi-family program generally contain the following features.

- **Whole building assessment.** Current programs tend to address one, or at best, two, building elements. The better programs recognize the costs in repeated marketing to building management and provide services that can address all cost-effective measures in one intervention.
- **Incentives for plan implementation.** Current incentives are attached to equipment only. This means that only equipment sales generate incentives. Services that seek to develop a whole building plan will not be covered. This strategy reduces the likelihood that opportunities to capture changes related to behavior change will be implemented. The better programs have found that some of these incentives must be paid up-front to encourage the building owner to engage in the process. The balance of the incentives is tied to performance, and incentives are graduated based on percentage of energy saved.
- **Incentives to go deeper.** Programs recognize the lost opportunities when programs incent only the most cost-effective measures/approaches and leave less cost-effective measures undone. These programs offer graduated incentive levels in order to encourage projects to increase the percentage of savings they achieve.
- **Program requirements or boosted incentives for measures installed in tenant spaces.** The real challenge for multi-family programs is to generate substantial

investments in the tenant spaces where owners usually do not directly benefit from energy savings. Programs either need to offer higher incentives for measures done in tenant spaces or tie the incentives for common-area measures to a commensurate level of investment in tenant-space measures.

- **Best practices also can include more novel approaches, including: targeting rehab opportunities, supporting social marketing campaigns, and driving the market by recognizing the most-efficient buildings.** While most programs allow rehabs to qualify for program services/incentives, they do not look for these types of projects. A building owner or manager planning a remodeling project will be able to consider a broader range of measures if the project is identified before major design decisions have been made. Programs also can increase interest by creating a buzz about exceptional buildings.

The Multi-family Energy Upgrade California program (EUC) that is under development addresses some of these features. EUC seeks to establish a comprehensive approach, with incentives for an audit and project design and other incentives that increase as savings percentages increase. The movement to EUC is a positive step.

4.2.5 Conclusions and Recommendations

The MFRP has been in existence for a number of years. According to the contractors serving the program, most of the prime locations have been treated with at least some of the eligible measures. Contractors are finding it harder to participate and earn a profit for their services due to shrinking opportunities, smaller projects that still require the same amount of marketing, reduced rebates amounts, and continued payment issues. Those still participating generally are not pursuing comprehensive solutions, especially ones that maximize the savings in tenant spaces.

Primary research recommendations stemming from this process evaluation of the SoCalGas Multi-family Programs are outlined below.

- **Provide support for Energy Upgrade California.** The EUC Multi-family Program features most of the best practices for a multi-family program. It will need support while the service provider infrastructure is developed and more comprehensive solutions to saving energy in multi-family buildings are perfected.
- **Develop a system for designating buildings, not units, as low income.** The fracturing of buildings between low income and market-based units is problematic for programs, building owners/managers, tenants, and service providers. The programs should adopt the definition that is used in New York and elsewhere that defines a building as low income if 50 percent of the tenants qualify as low income. Implementing this recommendation has a medium to high level of value for addressing with a medium difficulty level.
- **Implement a cold-water washer program.** As described above, this could entail providing one machine to willing owners and laundry-machine leasing companies.

Implementing this recommendation has a medium to high level of value for addressing with a medium to high difficulty level.

- **Consider adding other new technologies such as condensing water heaters.**
- **Fix payment system and tracking systems so that building verification and payment are at the same time, and shorten the payment process.**

4.3 Comprehensive Mobile Home Program

This section presents the results of process evaluation activities conducted for the Comprehensive Manufactured and Mobile Home Program (Mobile Home Program) provided by Synergy Companies (Synergy) in the SoCalGas service territory. This section includes an assessment of the program's success to date and provides recommendations for improvement.

4.3.1 Background

The Mobile Home Program is designed to provide energy efficiency measures to owners and renters of manufactured and mobile homes. The program has worked continuously statewide for over five years.

According to Synergy contacts, many of the customers in this market segment are senior citizens on fixed incomes and often are physically unable to install the measures themselves. Program documents indicate that this segment is unlikely to take advantage of energy efficiency programs because of barriers associated with cost, split incentives, park management directives, income, and language. The Mobile Home Program seeks to overcome or reduce these barriers through direct marketing and direct installation of some or all of the following energy efficiency measures in residents' homes:

- Duct test and seal
- Water heater pipe wrap
- Energy-efficient faucet aerator
- Low-flow showerhead

Air-conditioning tune-ups had been available to SoCalGas customers who also were customers of SCE through SCE's Mobile Home Program. Air-conditioning tune ups currently are not available for SCE participants. Program contacts believed could affect both programs' overall participation rate.

4.3.2 Research Overview

Evaluation research tasks sought to assess the program's effectiveness and identify possible recommendations for improvement.

As a first step in the evaluation, the process evaluation team reviewed program documentation (e.g., PIPs, logic models, previous Mobile Home Program evaluation, etc.). This

review yielded a list of eight researchable issues, from which the team developed hypotheses and research questions for Synergy program staff and program participants.

4.3.3 Research Objectives

In May 2011, the evaluation team met with representatives from SoCalGas and Synergy to discuss the program and identify potential areas for evaluation research. The researchable issues identified included:

- Opportunities to improve program marketing and outreach
- Opportunities for the program to reach more mobile home residents or more parks
- Opportunities to leverage local government partnerships
- Additional measures that could be included or opportunities to get even more comprehensive savings from these residences
- How does Synergy manage this program's overlap with California Alternate Rates for Energy (CARE)? Are there opportunities to improve the process around referrals to other programs?
- What are participant expectations for their upgrades? Are the upgrades meeting these expectations?
- Are participants satisfied with Synergy staff, as well as the work performed?
- Are customers satisfied with the upgrades? Do customers believe they got a good value for their upgrade?
- Why did customers agree to participate? Did they have any concerns? How did Synergy persuade them to participate?

4.3.4 Data Collection Activities

This evaluation consisted of the following activities:

- Review of program documentation (PIPS, logic models, previous Mobile Home Program evaluation, etc.);
- In-person interview with SoCalGas Program Manager at evaluation kick-off meeting;
- In-depth telephone interviews with seven Synergy program staff;
- Telephone survey with a sample of program participants
- Ride-along, on-site visits with Synergy technicians in Southern California

Table 21 displays data collection activities completed by the evaluation team.

Table 21: Sample Populations

Sampling Target	Sample
SoCalGas Program Manager	1
Synergy staff	7
Synergy technicians	4

Sampling Target	Sample
Mobile Home participants	100

Interviews

The evaluation team conducted an in-depth, in-person interview with the SoCalGas Program Manager of the Comprehensive Mobile Home Program and telephone interviews with seven Synergy staff In September and October 2011. The team also spent one day interviewing Synergy technicians on the job.

In addition, between October 24 and November 5, 2011, the team completed surveys with 100 SoCalGas customers who had participated in the program between January 2010 and June 2011.

4.3.5 Research Findings: Program Staff

This section describes implementation of the program and the experiences of program staff and technicians with program marketing, program management and customer response.

Program Marketing

The evaluation team explored the program marketing activities regarding the general marketing strategy, role of technicians and the utility, and approach to saturation.

During the 2006-2008 program cycle, Synergy used the California Department of Housing and Community Development website to locate all manufactured and mobile home parks and residences within Southern California. Synergy tracked interactions with the parks in an *Excel* database. For the 2010-2012 program cycle, Synergy transitioned to a comprehensive tracking database—the Synergy Technical System database (STS)—that compiles information and a history of the marketing activities and completed projects at each site. Synergy contacts said this enhancement enabled marketers to cover the targeted parks within each geographical area more efficiently.

The STS compiles data that inform Synergy's marketing efforts. These efforts include: outbound telephone outreach and (when authorized) door-to door canvassing, distribution of flyers and mailers, and open-house presentations. Recently, Synergy began promoting the program in collaboration with local government initiatives.

In addition to the Mobile Home Program, Synergy also enrolls customers in SoCalGas's Energy Savings Assistance Program (ESAP) and California Alternate Rates for Energy (CARE) programs, which target a similar market segment. Synergy contacts explained that each of these three programs can be presented to income-qualifying customers simultaneously. Presentations can include information about enrollment in the Mobile Home Program.

Synergy contacts reported that, although door-to-door marketing was the most effective approach to enrolling customers in the program, the majority of mobile home parks in

Southern California traditionally have not allowed door-to-door canvassing. Because of this, in prior program years Synergy's marketing strategy focused on introducing the program to park managers and offering to explain the opportunity to park residents during neighborhood meetings. This strategy changed for the 2010-2012 program cycle. Because Synergy has implemented the Mobile Home Program statewide for over five years, program contacts said that mobile home property owners, managers, and park managers are very aware of the program. Furthermore, contacts reported that the program has established a well-developed and respected reputation throughout Southern California. For these reasons the current marketing activities rely less on neighborhood meetings to introduce the program. Instead, Synergy's 2010-2012 marketing activities emphasize increasing saturation within participating parks through customized, targeted outreach to specific mobile home park managers, mobile home parks, and individuals. Synergy also emphasized that neighborhood meetings continue to play an important role when interfacing with parks in which program awareness is low.

Role of Technicians in Marketing

According to Synergy contacts, communication within mobile home park communities is well-developed and the potential for customer referrals is very high. Because so many residents hear about the program through word-of-mouth, the program strives to preserve Synergy's reputation by ensuring that technicians are doing good work and that residents are satisfied.

In addition, Synergy encourages technicians to market the program as they work in the parks. Technicians have a checklist containing all of the steps necessary to complete a service appointment. The list includes obtaining customer referrals, which is one of the tools to increase saturation. Technicians are reminded to obtain referrals at their monthly meetings and receive a $5 bonus per customer sign-up.

In 2010-2012, Synergy added logos, a toll-free number, and calls to action on its fleet of vehicles to support program marketing and credibility. One Synergy technician said that mobile home park residents had noticed the signage on Synergy trucks and learned that other residents of the park were receiving free services and measures. According to this technician, "That is when the residents approach technicians to ask about the program."

Utility Support

Synergy staff noted that the utilities play very important roles in program marketing efforts. Overall, Synergy and the utilities reported maintaining a good working relationship.

Program staff reported that the authorization to use utility logos on an introductory letter had helped reduce customer skepticism about the program, but these contacts said they would like to be able to use utility logos on a wider range of Synergy marketing materials, including ID badges or shirt patches. Program contacts also said they seek to cross-market multiple utility programs at each mobile home park. Synergy currently cross-markets SoCalGas's ESAP and CARE programs to income-qualifying residents when promoting the Manufactured and Mobile Home Program in each neighborhood. Synergy contacts said the utilities could achieve

additional benefits by enlisting the organization to implement other programs (particularly outreach, education and smart meter efforts).

Local Government Partnerships

For 2010-2012, Synergy began partnering with local governments' energy saving and carbon reduction initiatives. According to program contacts, these partnerships have helped to increase the visibility and legitimacy of their mobile home programs while simultaneously helping the municipalities meet their carbon reduction goals. SoCalGas utility account representatives assigned to municipalities helped forge these partnerships with local governments, acting as liaisons to city officials engaged in carbon reduction initiatives and representing the mobile home programs to decision-makers. One Synergy contact noted that the SoCalGas utility account representatives "opened doors we are not able to open on our own."

Program Management

The evaluation team reviewed several components of program management: technician training, quality control, and data tracking and reporting.

Technician Training

Synergy program staff said they were able to recruit and retain qualified technicians. All of the four Synergy technicians interviewed for this study reported receiving sufficient training to install program measures correctly. Training protocols included all aspects of duct testing and sealing and installation of energy-efficient measures. Technicians also reported receiving training in customer service and marketing that included information about the importance of looking and acting professionally and building customers' trust in the program and its representatives.

At monthly technician meetings, Synergy staff give technicians updated information about installation techniques, data-tracking protocols, and customer service approaches. A representative from the evaluation team attended one technician meeting and observed that program staff reminded technicians that they are the "face" of the organization and encouraged them to pay close attention to their personal appearance and the level of customer service they provide.

Quality Control

Synergy's five Quality Production Managers physically inspect a minimum of five percent of all completed jobs. In addition, Synergy contracts with a third party firm to call 20 percent of customers after the work is complete to assess customer satisfaction with the installed measures and their experience with the installation process. Synergy provides customers self-addressed customer satisfaction cards and refrigerator magnets displaying Synergy's toll-free number. The Operations Manager and Production Specialist analyze the data and use the

findings from the inspections to improve training procedures and measure installation processes.

Technicians receive copies of the project inspection reports so they can review feedback about their performance. If a technician's numbers are inaccurate, Synergy staff recommend how best to complete the work, or take disciplinary action. Synergy offers productivity bonuses to qualifying technicians at the end of each month. If technicians receive any quality assurance failures, they are ineligible for the bonus.

Data Tracking and Reporting

Technicians record customer and project information electronically while at the customers' homes and upload information from duct testing and sealing and air conditioning tune-ups directly from handheld data loggers. These loggers eliminate potential errors and data manipulation. These data are processed and analyzed to verify the quality of the measure implementation.

The most important development in tracking and reporting for Synergy in this program cycle is the Synergy Technical System database (STS) system. The STS uses information from electronic forms completed by technicians to automatically populate files required for utility reports, invoices, and status reports. This system has reduced the number of errors associated with handwritten forms, and is used to create statistical samples for on-site inspection and verification. STS also has increased the speed with which this information can be matched to utility Customer Information Systems because STS enables Synergy to upload program-tracking data directly into the utility database, where it is automatically verified.

Because of these enhancements, tracking errors tend to be limited to instances when account information is recorded incorrectly. Allowing Synergy to access utility customer databases through their STS could eliminate these errors by allowing technicians to confirm account numbers before they install the measures, but concerns about customers' privacy and confidentiality limit this access to customer account information. Synergy contacts noted that their organization continues to discuss this issue with partner utilities to find and implement an acceptable solution.

4.3.6 Research Findings: Customer Experience

This section presents the results of telephone surveys with 100 Mobile Home Program participants in SoCalGas territory. The survey sought to understand how customers heard about the program, their reasons for participating in it, their satisfaction with various program elements, and whether they promoted the program to others.

Program Outreach

Eighty-five participant contacts were able to recall how they heard about the program. Most of them (29%) said this first contact occurred when a program representative came to their door. As noted in Table 22, another 24 percent cited outreach through mobile home park

management, while 18 percent identified telephone marketing as their first contact with the program.

Table 22: Source of Program Awareness (n=85, Multiple Responses Allowed)

Source of Awareness	Percent
Program representative came to door	29%
Through park office or management	24%
Via phone	18%
Through a neighbor	16%
Through advertising or the mail	13%
Other	5%

When prompted, nearly two-fifths (39 percent) of contacts said they initially had concerns about the program's legitimacy.

The evaluation team asked all participant contacts what convinced them that the program was legitimate (Table 23). Participants most frequently said that interactions with program representatives (23 percent) and/or knowing others who had participated (22 percent) addressed their concerns. In addition, participants frequently said that the presence of utility logos on Synergy staff members' identification and program marketing materials (16 percent) reduced their skepticism. Although just less than one-half of contacts (48 percent) reported having internet access, only 4 percent of those (2 of 48) reported accessing the internet to obtain program information.

Table 23: Factors that Convinced Participants of Program Legitimacy (n=100, Multiple Responses Allowed)

Convincing Factor	Percent
Interaction with representative	23%
Knew others who had participated	22%
Utility information on ID or paperwork	16%
Park management	12%
Don't know	9%
Contact called to verify	7%

Convincing Factor	Percent
No cost	7%
Prior knowledge of program, including advertising	5%
No reason/not a concern	4%
Other	3%

Reasons for Participation

Contacts rated the influence of potential benefits and program features on their decision to participate in the program (Table 24). Over three-fourths of contacts rated "saving energy," "lowering utility bills," "keeping cooler in the summer," and "keeping warmer in the winter" as "very important" factors in their decisions (88 percent, 81 percent, 82 percent, and 78 percent, respectively). Similarly, over three-fourths of contacts rated each of the three program features (participation was free, the program was sponsored by SoCalGas, participation appeared simple) as being "very important" factors in their decisions (87 percent, 71 percent, and 77 percent, respectively).

Table 24: Reasons for Program Participation

Benefit	Very Important	Somewhat Important	Not at all Important
Benefit to Household			
Saving energy (n=100)	88%	8%	4%
Keeping your home cooler in the summer (n=96)	82%	5%	13%
Lowering your utility bills (n=98)	81%	13%	6%
Keeping your home warmer in the winter (n=98)	78%	14%	8%
Addressing health concerns (n=96)	55%	20%	25%
Increasing the value of your home (n=99)	37%	31%	31%
Decreasing noise in your home (n=92)	33%	21%	47%
Benefit of Program Feature			
Participation was free (n=100)	87%	9%	4%
The program was sponsored by SoCalGas (n=96)	79%	16%	5%
Participation appeared simple (n=100)	77%	20%	3%

Program Experience

All but two contacts reported being present during measure installation. Most (95 percent) of the contacts reported allowing the technician to complete all of the recommended improvements to their home. Over three-fourths of contacts "strongly agreed" that the time

required to complete the work was reasonable, scheduling was simple, and that technicians effectively informed them about the work to be conducted (85 percent, 81 percent, and 77 percent, respectively)(Table 25).

Table 25: Installation Process Experience

	Rating				
Element	**Agree Strongly**	**Agree Somewhat**	**Neither Agree nor Disagree**	**Disagree Somewhat**	**Disagree Strongly**
The time required for the work was reasonable (n=95)	85%	13%	1%	1%	0%
It was simple to schedule the installation (n=95)	81%	16%	0%	3%	0%
My technician told me what would be installed and what work would be conducted (n=97)	77%	14%	3%	1%	4%
I learned valuable things about my home from the technician (n=97)	48%	25%	12%	10%	4%

Thirteen contacts said that unexpected issues occurred during the installation process. Seven of the 13 contacts reported finding loose or leaky ducts when Synergy technicians completed an air-conditioning duct test and seal, and that technicians subsequently repaired the faulty ductwork. Two contacts reported difficulty scheduling a return visit with Synergy technicians. Two contacts reported general dissatisfaction with their technicians; one of the two said that the technician blew out a fuse and did not return as scheduled. In addition, seven contacts commented about measures that were not available through the Mobile Home Program but actually were delivered through SoCalGas's ESAP and/or CARE programs. As noted above, Synergy presents these measures to income-qualifying customers as an overall package that includes Mobile Home enrollment.

Satisfaction

Program participants rated their degree of satisfaction with six program elements (Table 26). Overall, participants provided very high ratings; 90 percent of contacts reported being "extremely" or "very" satisfied with each of the program elements. Less than three percent of contacts reported being "not very" or "not at all" satisfied with each program element.

Table 26: Program Satisfaction (n=100, unless otherwise noted)

Element	Rating			
	Extremely or Very Satisfied	Somewhat Satisfied	Not Very or Not at All Satisfied	Don't Know/ Refused
Interactions with program representatives	94%	6%	0%	0%
Overall services provided by this program	90%	9%	1%	0%
Quality of the work performed in your home	90%	8%	1%	1%
Time between signing up for the program and when the technician came out	86%	12%	1%	1%
Overall comfort of your home since participating in the program	86%	7%	3%	3%
Performance of your ductwork after it was checked by the program (n=94)	80%	6%	2%	12%

Additionally, nearly two-thirds of contacts who reported receiving air conditioning[6] and/or heating tune-ups (56 of 89, or 63 percent) reported noticing reduced utility bills after the tune-up was complete. The remaining 33 contacts were uncertain about whether the service had resulted in energy savings.

When prompted, only four contacts provided feedback about elements of the program that did not work well. Three of the four contacts reported dissatisfaction with the performance of low-flow showerheads, aerators, or lighting measures.[7] The remaining contact reported difficulty scheduling an appointment with Synergy and said they had been told that the program was offered for a fee.

Contacts also provided feedback about what they considered the best aspects of the program (Table 27). Contacts most frequently reported valuing the measures they received (56 percent) and the ability to participate in the program for free (24 percent).

6 SoCalGas customers who are also SCE customers may qualify for AC measures through SCE's Mobile Home Program.

7 Mobile Home Program lighting measures available to SoCalGas customers who also are SCE customers.

Table 27: Best Aspects of Program, Per Participants (n=85, Multiple Responses Allowed)

Program Aspect	Percent
Desirable measures and services/Useful program	56%
Free program	24%
Quality technicians/Good customer service	18%
Saves money/energy	13%
Increased comfort	7%
Increased safety	2%

Nearly all contacts (90 percent) indicated they would be "very" or "somewhat" likely to use SoCalGas efficiency programs in the future, if the opportunity arose. In addition, contacts offered feedback about SoCalGas's efficiency services in general. When prompted, eight of 100 contacts (8 percent) reported having contacted SoCalGas about energy efficiency services and/or ways to reduce their bills; five of the eight said it was easy to locate the appropriate SoCalGas contact and four of the eight said the information provided was helpful.

Table 28: Agreement with Statements about Contacting SoCalGas about Efficiency (n=8)

Statement	Strongly or Somewhat Agree	Neutral	Strongly or Somewhat Disagree	Refused
It was easy to find the right person to speak with	5	0	2	1
The information provided by SoCalGas helped me understand what else I could do in my home	4	3	1	0

Outreach

Over one-half of contacts (61 percent) reported having recommended the program to someone else. Table 29 displays the program aspects these respondents reported sharing with others.

Table 29: Program Aspects Respondents Shared with Others (n=61, Multiple Responses Allowed)

Program Aspect	Percent
Desirable measures and services/Useful program	69%
Free program	21%
Saves money/energy	20%
Quality technicians/Good customer service	7%
Offered through utility	5%
Other or not specified	20%

One-fourth (25 percent) of contacts who reported speaking to their technician said the technician asked for a referral. Of those who recalled being asked for a referral, over one-half (14 of 25, or 56 percent) said they provided the technician with contact information.

Nine of the 11 respondents who recalled being asked for a referral but did not provide one explained they either did not know any likely prospects or that everyone in their neighborhood already was aware of the program; the remaining two said they were not comfortable providing contact information to program representatives. Only two contacts reported that they knew of others who had considered participating in the program, but had decided not to.

4.3.7 Comparison to Best Practices

The Comprehensive Mobile Home Program is consistent with many programmatic best practices and was included in the residential weatherization chapter during the *National Best Practices Study* in 2004.

- The program has a clear target market and the implementer possesses substantial expertise in the targeted market.
- The program delivers a suite of measures at eligible homes with relatively low hassle for homeowners.
- The program employs multiple marketing strategies, and has evolved in sophistication and approach as the limitations of prior strategies became evident.
- The use of utility logos in marketing materials helps Synergy, verifying its role as a direct contractor to the utilities.

Of particular note is the ability of the implementer to leverage neighborhood contact by delivering multiple programs in targeted neighborhoods through one delivery approach. Synergy also has developed an effective tracking system that informs outreach activities, tracks participants, and reduces invoicing errors through automation.

4.3.8 Conclusions and Recommendations

Conclusions

- **Synergy has developed an effective marketing strategy,** which addresses the major hurdles affecting the target market, including barriers related to cost-effectiveness, split incentives, park management directives, income, and language.
- **Synergy is systematic in providing training and oversight to installation technicians.**
- **Adding visual information, such as Synergy's logo and toll-free number, to its fleet of vehicles has improved visibility and credibility.** Customer survey responses confirm Synergy staff opinions of the value of prominently displayed utility logos in establishing credibility and reducing customer skepticism.
- **Synergy demonstrated the benefits of cross-marketing and delivering the Energy Savings Assistance Program (ESAP), California Alternate Rates for Energy (CARE), and Manufactured and Mobile Home programs to the same neighborhood.**

Recommendations

Given the program's progress to date and recent enhancements in marketing and tracking, this evaluation finds only a few opportunities for improvement.

- **Synergy should look for opportunities to further leverage the program's presence and increase awareness of it.** Yard signs, window clings, or other "leave-behinds" could further spur word-of-mouth awareness. Implementing this recommendation has a medium level of value for addressing with a medium level of difficulty.
- **SoCalGas should continue to work with contractors to identify additional ways utility logos could be used to support their outreach efforts.** Implementing this recommendation has a medium level of value for addressing with a low difficulty level.
- **SoCalGas should consider other ways to leverage Synergy's presence in mobile home neighborhoods.** Additionally, SoCalGas should consider if there are ways to replicate this success in other types of programs and/or with other contractors.

4.4 Home Energy Efficiency Survey

4.4.1 Background

The Home Energy Efficiency Survey (HEES) Program comprises a survey instrument that SoCalGas makes available to residential customers. The goal of the program is to prompt customer implementation of more energy efficiency measures and behaviors by helping participants understand how their household energy use varies throughout the year and how it compares to characteristically similar households.

HEES provides SoCalGas customers the opportunity to take an online survey that generates an analysis of their home energy usage.[8] The home energy assessment tool uses a series of questions to determine the opportunities for energy savings in the participant's home and offers measure and behavioral recommendations based on customer input. The survey report provides information on additional SoCalGas rebate and program opportunities and web links for further information.

The HEES instrument used in 2011 is being replaced in the 2012 calendar year. As a result, the evaluation team focused on evaluating the effectiveness of each recommendation in "funneling" HEES participants into other energy efficiency programs offered by SoCalGas. The evaluation team did not evaluate the content of the survey instrument.

4.4.2 Data Collection Activities

The evaluation team conducted in-depth interviews with the SoCalGas Program Manager and the prior Program Manager. The interviews were based on a series of open-ended questions. Discussion topics included:

- How the program actually works;
- The program's key challenges;
- Who is and is not participating;
- Planned program changes; and
- Coordination with other SoCalGas programs.

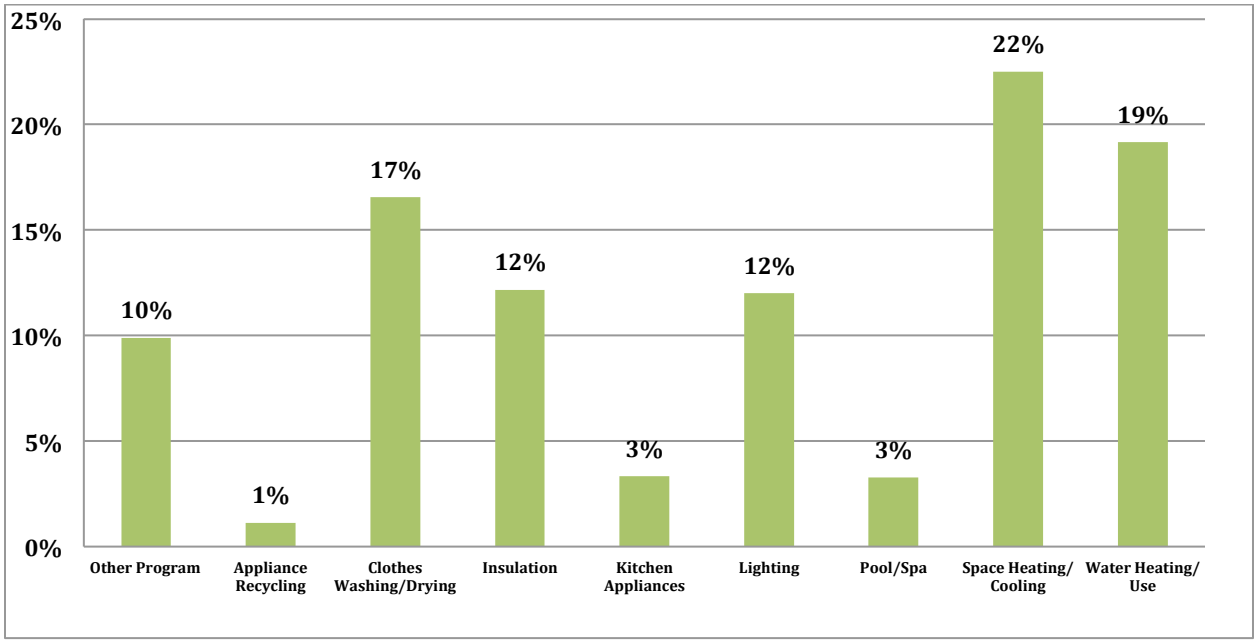
The evaluation team also analyzed the database of HEES participants and the program tracking database (CRM) to compare the volume of survey respondents who subsequently participated in a resource program.

4.4.3 Research Findings

HEES generates recommendations or "tips" to each respondent based on their answers to the survey questions. There were 72 unique recommendations that appeared in the sample. A total of 323,752 recommendations were provided—an average of 19 recommendations per respondent. Figure 18 shows the distribution of these 323,752 recommendations in the sample and contains lighting measures since the HEES study was a joint venture between SoCalGas and Southern California Edison. The leading recommendations were: space heating/cooling, water heating/use, and clothes washing/drying. The remaining categories are distributed fairly evenly, except for pool/spa and appliance recommendations, which appeared substantially less frequently than the others. It is important to note that, while each recommendation was given at most once only per survey, many respondents received more than one recommendation per category.

[8] The great majority of HEES participants take the survey online. Less than two percent use the paper form of the survey.

Figure 18: HEES Recommendations by Category



The evaluation team investigated if the HEES motivated participants to implement the recommended energy savings actions/measures. To perform this analysis, the evaluation team collected and matched survey participant data with measure tracking data. There were 137,412 individual SoCalGas customers in the HEES database and 212,794 in the tracking database. After matching the two datasets, the evaluation team found an overlap of 16,870 customers, as shown in Table 30. The analysis shows that 12 percent of the customers who took the survey participated in some energy efficiency program at SoCalGas. The analysis also shows that eight percent of all resource program participants completed a HEES. HEES Program participation was driven primarily by the free water savings kits. For most of these participants, they are indicated as having taken the HEES and installing the measure (receiving a kit) on the same day.

Table 30: HEES and Tracking Data Overlap

Dataset	Number of Individual Households	Overlap	Overlap (%)
HEES Survey	137,142	16,870	12%
Program Tracking	212,794	16,870	8%

The evaluation team identified the individual energy efficiency programs in which the HEES takers participated. Table 31 shows the number of individual customers who took the HEES and participated in a program. The evaluation team then focused on those customers who participated in a program *after* taking the HEES. This smaller figure is one measure of how well the HEES directed its participants to other energy efficiency programs.

This analysis revealed that the 16,870 individual customers enrolled in three different programs, for a total program-participation count of 19,355. Nearly all HEES takers participated in the Home Energy Efficiency Rebates program *after* completing the survey.

Table 31: SoCalGas Program Participation Summary

SoCalGas Program Title	Participated and Took HEES	Participated After Taking HEES	
		Count	Percent of Participants
Multifamily Energy Efficiency Rebates	3	1	33%
Home Energy Efficiency Rebates	19,269	16,858	87%
Manufactured and Mobile Home	84	3	4%
Total	**19,356**	**16,862**	**87%**

The evaluation team identified the recommendations that could lead a respondent to the Home Energy Efficiency Rebate (HEER) Program sponsored by SoCalGas. Table 32 shows the list of these recommendations and the number of individual customers who participated.

The evaluation team also analyzed how effective HEES recommendations are at directing survey participants to the relevant measures. The team identified six HEES recommendations that could lead the survey taker to participate in the Home Energy Efficiency Rebate Program. There were 7,918 HEES takers who received at least one of the recommendations that included text regarding measure incentives available through the program. Table 32 shows the number of times each recommendation was given to the HEES takers and the number times a related measure subsequently was installed.

The recommendation upon which the largest portion of HEES participants acted was installation of low-flow showerheads and faucet aerators; 84 percent of the customers who received the recommendation then received the measure through the HEER Program. SoCalGas customers were able to request a Water Saving Kit at no cost. For SoCalGas, it appears that implementation occurs most often when the cost is free. The remainder of the recommendations led two percent or fewer of the survey takers to pursue the relevant measure through the HEER Program.

Table 32: Home Energy Efficiency Rebate Program Recommendations and Participation

Recommendation	Participated in Program after Received Tip	Count	Percent
If your water heater is over ten years old, it may soon need replacing.	928	1	<1%
Install low-flow showerheads and faucet aerators to save on water and energy costs.	7,797	6,527	84%
Install additional insulation in your home.	109	1	1%
Your household does a considerable amount of laundry. Consider purchasing an ENERGY STAR® labeled model.	2,994	251	8%
Since your furnace is more than 15 years old, consider replacing it.	1,044	16	2%

The HEES also included one recommendation suggesting that certain customers enroll in the Energy Upgrade California (EUC) Program; there were no such customers included in the tracking database. However, to participate in EUC, the customer is required to take the HEES. EUC is a new program, and the tracking database provided to the evaluation team did not yet capture the participants in that program.

Table 33 shows the Program Performance Metrics (PPM) associated with the HEES Program. The only PPM for this program is the percentage of HEES participants who enroll in other program offerings supported by SoCalGas.

Table 33: PPM Summary and Status

PPM	Tracked?	Status relative to Goal	Comment
Percentage of HEES participants who enroll in (a) whole-house and (b) other resource programs	Not actively tracked	(a) Tracking database shows no participants yet in the whole-house programs. (b) 12% of HEES takers who received recommendations also participated in other resource programs	Program staff indicated that the new survey tool is supposed to feed into the CRM tracking database.

The evaluation team was able to determine that 12 percent of HEES participants enrolled in at least one other SoCalGas resource program (two percent of the overall tracked population). Within this 12 percent, most (87 percent) program participation occurred after a customer completed the HEES. This finding suggests that the HEES Program succeeded in encouraging

participants to participate in other energy efficiency programs in which they might not have participated. The HEES is quite successful at directing customers to receive a Water Saving Kit.

The bulk of the recommendations for resources programs in the HEES are measures implemented by SCE. This evaluation did not include any analysis of those programs.

4.4.4 Comparison to Best Practices

The evaluation team evaluated the SoCalGas HEES Program with respect to best practices in Program Theory and Design, Program Management, and Program Implementation, as outlined in the Energy Efficiency Best Practices Self-Benchmarking Tool for audit programs.[9]

Program Theory and Design

Articulate a program theory that clearly states the target for the program. The PPMs do not clearly state a goal, but instead simply ask for a reporting of participation. The HEES should identify specific goals regarding the portion of HEES takers who subsequently participate in SoCalGas resource programs, and what portion determines a "successful" program.

Program Management

Project Management

Utilize electronic project management. All of the data from the HEES Program are electronic, but the Program Manager is unable to easily access information. The only report the system generates includes the number of customers who take the survey, the number who started the survey, and the number who did not finish it. The Program Manager also is unable to easily access reports from the data and is unable to access customer response data. Because the data are not easily accessed, the Program Manager's ability to track customers' further participation and satisfaction is limited.

Reporting and Tracking

Make the audit recommendations, including energy-saving potential, part of the program tracking database. The HEES recommendations are not tied to the tracking database. Although good records are kept on HEES participation, the program does not systematically track which measures participants subsequently implement as a result of the survey.

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[9] Best Practices Benchmarking for Energy Efficiency Programs, Self-Benchmarking Tool. See http://www.eebestpractices.com/

Use databases that fully integrate audit participation and results with other energy efficiency program information systems. The version of HEES reviewed in this evaluation did not integrate the survey with the tracking database. The program staff has limited access to data from the HEES and the results do not automatically tie to the tracking database.

Design the program tracking system to support the requirements of evaluators as well as program staff. The current HEES system limits the ability of program staff and evaluators to access participant data.

Quality Control and Verification

Conduct follow-up analysis and interviews with participants to estimate the number of measures installed and actions taken. The current HEES limits the ability of program staff to regularly audit participation in resource programs by the HEES takers. Program staff indicated that the new version of HEES will connect directly to the program tracking database.

Program Implementation

Participation Process

Provide a range of options. The HEES does provide a range of recommendations for participants to pursue.

Make the audit flow seamlessly into the adoption of recommended measures. The current HEES provides information about where to go to get information about rebated measures, but it does not take the HEES taker directly to the program website.

Marketing and Outreach

Feature links to residential audits prominently on utility web sites. The HEES survey is easily found on the SoCalGas website.

Make market materials and audit instruments multi-lingual. The existing online survey is available only in English, although the paper version is available in many languages. The new HEES is expected to be available in multiple languages online.

4.4.5 Conclusions and Recommendations

Conclusions

Program theory expects the HEES will encourage its participants to implement more energy-efficient behaviors and equipment and participate in other energy efficiency programs. The goal of this evaluation was to determine if the HEES Program were effectively motivating these actions. The following are some of the key findings of this program evaluation.

- **The participant survey results indicate that the HEES Program prompts participants to implement energy-efficient behaviors**. Twelve percent of HEES participants who received recommendations participated in a resource program
- **A very large portion (84 percent) of HEES participants follows the recommendation to receive a Water Saving Kit.**
- **A trivial portion of HEES participants follow any other recommendation directly related to a measure in a resource program implemented by SoCalGas.**
- **The current data system does not allow the Program Manager to track HEES participants' follow-up participation in resource programs, or to follow up with survey takers to encourage further participation.**

Recommendations

Potential program changes that should be considered include the following.

- **Develop a PPM that identifies a specific goal.** The current PPM asks only for the percentage of HEES participants who enroll in other resource programs. It does not have a goal that explicitly defines "success."
- **Develop systems that allow the Program Manager to easily access reports about HEES takers and their subsequent participation in resource programs**, so the Program Manager can assess the rate of HEES participants implementing other energy efficiency measures and determine the efficacy of a specific recommendation.
- **Develop systems that allow the Program Manager to follow up with HEES takers.** The new HEES tool is supposed to connect with the program tracking database. The data should support efforts to implement follow-up activities to verify which of the recommended HEES measures each customer actually has implemented. Implementing this recommendation has a medium level of value for addressing with a medium level of difficulty.
- **Directly link HEES results and recommendations to relevant SoCalGas energy efficiency programs.** This could increase the rate at which HEES Program participants implement HEES equipment upgrade recommendations.

4.5 Community Language Efficiency Outreach (CLEO) Program

4.5.1 Background

The Community Language Efficiency Outreach Program (CLEO) is a mature program that started in 2002. The program focuses on residential energy efficiency marketing, outreach and education. It targets joint SCE and SoCalGas customers in demographic belts in Los Angeles, San Bernardino, and Orange counties that have a high concentration of ethnic Asian customers, specifically the hard-to-reach Vietnamese-, Indian-, Chinese- and Korean- (VICK) speaking customers. In the current program cycle, the program was expanded to include Hispanic and African American communities, and now serves all parts of the SoCalGas territory.

The program's goal is to educate residential customers about energy efficient behaviors and available SCE/SoCalGas programs via educational seminars, community event information booths, and printed/website materials. In the current program cycle, the program enhanced its Green Schools element, whereby students compete in Energy Artist Contests and bring home HEES surveys for their families to complete. The program also has added a Green City Partnerships element, to expand CLEO program outreach and complement existing city programs.

Program outreach relies on well-respected community officials and local ethnic media that are readily accessible to the target communities. Most program offerings (e.g., energy efficiency classes, take-home materials, and phone assistance) are in-language. The program strongly emphasizes personal interaction in its marketing and education, and participants are encouraged to ask questions during classroom training and then share their knowledge with family and friends in their communities.

Participants can receive CFLs and LED nightlights, although for SoCalGas, CLEO is a non-resource acquisition program with no explicit energy savings goals. Whenever possible, the program attempts to close the energy information loop by encouraging the installation of energy efficiency measures and providing personalized customer assistance.

Based on the program goals and an initial interview with the SoCalGas Program Manager, the following key research issues were identified:

- Is participation in the CLEO outreach events leading to energy efficiency activities?
- Is the program missing any significant segments (e.g., ethnic or geographic) of the target population? (Note: The program does not have formal participation goals by ethnicity.)

4.5.2 Data Collection Activities

The evaluation team conducted in-depth telephone interviews with the program implementer, Global Energy Services (GES), and the SoCalGas Program Manager. These interviews were based on a series of open-ended questions. Discussion topics included:

- How the program actually works
- What is working well, and not working well
- Who is participating, and who is not
- Potential program changes
- Coordination with other SoCalGas programs.

In addition, CIC Research fielded a telephone survey of program participants in English in November and December 2011, and completed 101 surveys.[10] Each survey took about 15 minutes to complete. Last, the evaluation team analyzed program participation data and other program materials (e.g., marketing brochures), which were provided in October 2011.

4.5.3 Research Findings

Table 34 displays the program's quantitative performance goals and the program's progress toward meeting them. According to the program implementer, the program reached over 35,000 households through October 2011. Table 35 details the participants' ethnic backgrounds.

Table 34: CLEO Progress Towards Goals Though November 2011*

Deliverable	2010-2012 Goal	Number Completed	Percent Completed
Seminars	125	87	70%
Community event booths	82	67	82%
HEES surveys	6,500	5,627	87%
Presentations to faith-based organizations/senior centers	25	17	68%
Green Schools programs	15	10	66%
City partnerships	14	9	64%

* Data provided by GES, January 2012. Over 10,000 customers had completed HEES surveys. However GES has not yet entered the data from all of the surveys, and some surveys were disqualified due to missing information.

Table 35: Ethnicity of CLEO Program Participants

Ethnicity	Percent
Chinese	40%
Hispanic	20%
Korean	18%
Vietnamese	12%
Indian	5%

[10] Due to evaluation budget constraints and the number of programs covered, we were not able to translate the CLEO phone survey into languages other than English.

African American	5%

The program supports multiple State Strategic Plan goals (e.g., promoting whole-house energy solutions, reducing plug loads, participating in low-income programs) but does not report any formal Program Performance Metrics (PPMs) through SoCalGas.

Program Delivery

According to both the SoCalGas Program Manager and the program implementer, program delivery is going smoothly, and regular and consistent communications between GES and SoCalGas have contributed to high staff satisfaction. Previously, SCE and SoCalGas co-funded the program, but now SoCalGas contracts directly with GES and the two utilities' programs have separate goals and budgets. Overall, it has been easier to contract with the IOUs separately than collectively. The program's combined goals and budget have been increased since the last program cycle.

SCE has continued to direct the translation of the program materials. Contacts expressed no problems with this process. English-language rebate applications are available at program events. Although SoCalGas has considered translating its application forms into the various languages spoken by the targeted populations, it has not done so for two primary reasons: the cost of the translation services, and potential challenges involved in translating technical details appropriately. Instead, English-language applications are distributed by CLEO staff, who can then help the customers in their own language. Program handouts also include phone numbers applicants can call for help from CLEO representatives in-language. As a result, the one-hour program information seminars do not have to spend much time on detailed application instructions.

The implementer's marketing, expenditures, and participation reporting are going well and are meeting SoCalGas's needs. Each progress report shows detailed activities, spending by task, and running goals and budget balances. Reporting requirements for third parties were significantly increased during the last program cycle. For this program cycle, the implementer had to adapt to additional reporting formats for the SMART system; training has facilitated this transition.

Regarding the program outreach, CLEO has developed new city partnerships in Santa Ana, San Gabriel, Monterey Park, West Covina, Boardwalk, Rancho Cucamonga, Covina, Hawaiian Gardens, and Gardena. As reflected in the Table 35, the program has made significant inroads into Hispanic communities (in Norwalk and Gardena in particular), and is making concerted efforts to attract African Americans. Participation by individuals within these two groups is expected to increase, although there have been some short-term marketing challenges described next.

Overall, the program's outreach and marketing have become more cost-effective over time. Newspapers (all groups) and radio (for Chinese) have been the most effective media. However, the costs for advertising in these conventional media in Hispanic markets have

increased recently, which has limited the implementer's ability to conduct additional broad-based promotions. Similarly, African American customers have been more difficult to reach due to the high cost of television advertising; most of these customers have been reached through event booths in cities with high proportions of African Americans, and at events celebrating Martin Luther King Day and Black History Month.

Program Effectiveness

Early in the phone survey, respondents were asked if they are aware of SoCalGas rebate programs for energy-efficient equipment. The purpose of this was to measure how much they recalled about their participation in the CLEO Program. As shown in Table 36, 70 percent of the respondents were aware of the general availability of SoCalGas rebates, which is a large increase from the 44 percent previous evaluation, when only 44 percent were aware of the rebates.

Table 36: Awareness of Gas Company Rebates After Participation

Response	Percent (n=101)
Yes	70%
No	30%
Don't Know	1%

Nine percent of the respondents said that they had received SoCalGas rebates prior to participating in the CLEO Program. Table 37 shows the reasons why respondents had not tried to receive rebates in the past (multiple responses were accepted). Thirty-seven percent of respondents were not aware that rebates for energy efficiency equipment were available, while 22 percent were unsure why they had not tried to receive rebates in the past. These data also confirm that the program has increased customer awareness of SoCalGas rebate programs.

Table 37: Reasons For Not Getting Rebates Before Participation

Reason	Percent (n=86)
Not aware that rebates existed	37%
Didn't buy any appliances	12%
Did not want/need energy-efficient equipment	8%
Did not try to apply	7%
Didn't qualify/didn't think I qualified	6%
Didn't understand rebate program/applications	3%

Forgot/lost paperwork/too late to apply	3%
Too much hassle to get rebates	1%
Efficient equipment is too expensive	1%
Don't know	22%

Fifty-six of the 101 respondents visited an energy efficiency information booth at a community event as part of their participation in the program. When asked about their reasons for visiting a booth, most visitors (75 percent) indicated that they wanted to learn about ways to save energy and about SoCalGas programs. Additionally, about half of respondents indicated they were simply curious or wanted to get free prizes or equipment, (50 percent and 46 percent, respectively). Most non-visitors said they simply had not seen the booths at community events or did not have time to visit them; very few of them said they were not interested in the information.

Table 38 shows that the majority of booth visitors perceived the information they received to be "very" or "extremely useful." When asked if the information helped them understand how to use SoCalGas rebate programs specifically, 64 percent said the information did help them, 15 percent said it did not, and 21 percent did not know.

Table 38: Usefulness of Booth Energy Efficiency Information

Rating	Percent (n=47)
Extremely useful	18%
Very useful	51%
Somewhat useful	27%
Not very useful	4%
Not at all useful	0%
Don't know	2%

Fifty-five of the respondents were aware of the energy efficiency training classes offered through the program, and 43 of these respondents chose to attend a class. As shown in Table 39, the majority of respondents learned about the classes through presentations at faith-based organizations (27 percent) or newspaper advertising (25 percent), while 18 percent learned about them through radio advertising.

Table 39: Source of Energy Class Awareness

Source	Percent (n=55)
Church or faith-based organization presentation	27%
Newspaper advertising	25%
Radio advertising	18%
Energy booth at community event	7%
From friend or family member	7%
Community or cultural organization	6%
Brochure	5%
CLEO staff told me	2%
Information from children's school	2%
Bill insert	2%
SoCalGas website	2%
Internet	2%
Don't know	9%

Table 40 shows that the majority of respondents chose to attend a class in order to learn about how to save energy (84 percent), to learn about SoCalGas programs (51 percent) or simply because they were curious (51 percent). An additional 42 percent attended because someone else had recommended the energy class to them, and 40 percent were attracted by the prospect of free incentives.

Table 40: Reasons for Attending Energy Class

Reason	Percent (n=43)
To learn about ways to save energy	84%
To learn about Gas Company programs	51%
You were curious	51%
Someone recommended it to me	42%
To get free prizes or equipment	40%
Because friends/family did	21%

As shown in Table 41, 65 percent of the class attendees stated that the information they received was "extremely" or "very useful"; in the previous program evaluation only 32 percent of respondents gave these high ratings. Similarly, 65 percent of the respondents identified no problems with the classes, while 12 percent would have preferred a longer class and/or more detailed information about energy-saving behaviors and strategies. In a separate question, 65 percent of the respondents indicated that the class had helped them understand how to use SoCalGas rebate programs very well, compared to 21 percent who said the classes were either "not very useful" or only "slightly useful"; 14 percent were not sure. Seventy percent of the respondents said they recommended the class to others.

Table 41: Usefulness of Energy Class Information

Rating	Percent (n=43)
Extremely useful	9%
Very useful	56%
Somewhat useful	28%
Slightly useful	0%
Not very useful	5%
Don't know	2%

Fifty-three percent of all respondents recalled completing a Home Energy Efficiency Survey (HEES). Most of these respondents (89 percent) completed a written survey in person, while 6 percent completed Internet or mail-in surveys. Many participants (49 percent) indicated that the survey was "very easy" to complete, followed by 40 percent who said it was "somewhat easy" to complete, and four percent said it was "somewhat hard." As shown in Table 42, 77 percent of the respondents who took the survey wanted to learn about specific energy-saving opportunities, and 64 percent wanted to better understand their home energy use.

Table 42: Reason for Completing HEES Survey

Reason	Percent (n=53)
To learn about energy-saving opportunities for my home	77%
To better understand my home energy use	64%
You were curious	36%
To get free prizes or equipment	26%
Friends/family recommended it	25%
Don't know	4%

Table 43 shows that 52 percent of the respondents thought that the HEES survey was "extremely" or "very useful" for improving their understanding of energy-saving opportunities (only eight percent said this in the last evaluation), while 35 percent thought the survey was "somewhat useful." In a separate question, 63 percent of the respondents said they had recommended the HEES survey to others.

Table 43: Usefulness of HEES Survey

Reason	Percent (n=52)
Extremely useful	12%
Very useful	40%
Somewhat useful	35%
Not very useful	4%
Not at all useful	2%
Have not received survey report yet	6%
Don't know	2%

Importantly, all of the survey respondents were asked to describe any energy use behaviors and equipment they had changed after participating in the CLEO Program. Note that since this program is implemented in conjunction with SCE, survey responses also included electric measures to avoid confusing the respondents by only asking about gas measures. Table 44 shows that the greatest changes pertained to installing efficient lighting, reducing lighting use, and installing efficient appliances. Overall, participants are changing a wide range of behaviors to small degrees. The previous evaluation reported more significant behavior changes. It is possible that the program target population has modified its energy

consumption patterns over time due to the CLEO Program and other energy education efforts.[11]

Table 44: Changes in Energy Use Behavior

Type of Change	Percent (n=101)
No changes	58%
Replace bulbs with CFLs, LEDs	20%
Reduce lighting use/turn off lights more	9%
Replace appliances with energy-efficient models	8%
Lower thermostat setting for heat	7%
Weather-stripping	5%
Reduce water usage (shorter showers, irrigation, etc.)	5%
Unplug things when not being used	3%
Lower hot water temperature	3%
Wash with cold water	2%
Use appliances in off-peak hours	2%
Raise thermostat setting for cooling	2%
Cut down/be more conscious	2%
Use the microwave whenever possible	1%
Use space heater rather than central heat	1%
Use fans instead of A/C	1%
Turn on pool heater less	1%
Run dishwater w/full loads	1%
Keep refrigerator full	1%
Have heating and cooling system cleaned and tuned	1%
Close windows	1%
Always wash with full load	1%

[11] In the previous evaluation, respondents often said "reduced lighting use" (88 percent), "raised thermostat" (33 percent), and "always wash with a full load" (31 percent).

Type of Change	Percent (n=101)
Other (specify)	5%
Don't know	9%

Table 45 shows the energy-efficient equipment respondents installed after participating in the program. Not surprisingly, the most common type of new equipment they installed was new CFL or T-8 lighting (65 percent). In addition, 32 percent of the respondents installed low-flow showerheads, and over 10 percent installed water faucet aerators, an efficient refrigerator, an efficient clothes washer, clothes dryer and/or efficient windows. Overall, program participants are installing new efficient equipment at a greater rate than they did during the previous evaluation, when participants mainly installed efficient lighting (99 percent) and efficient refrigerators (23 percent).

Table 45: New Energy-Efficient Equipment Installed

Type of Equipment	Percent (n=101)
Compact fluorescent (CFL) or T-8 lighting	65%
Low-flow showerheads	32%
Water faucet aerators	18%
None	16%
Efficient refrigerator	15%
Efficient clothes washer	14%
Efficient clothes dryer	14%
Efficient windows	14%
Efficient water heater	8%
High-efficiency gas furnace	6%
Efficient central air conditioner	4%
More wall insulation	3%
Whole-house fan	3%
Efficient window unit air conditioner	3%
Efficient dishwasher	3%
Efficient stove	3%
Efficient television	1%

Type of Equipment	Percent (n=101)
More attic insulation	1%
Digital thermostat	1%
Other (specify)	1%
Don't know	1%

Program participants also were asked to rate their satisfaction with the energy savings resulting from installations of new energy-efficient equipment. Table 46 shows that 67 percent of the respondents were either "extremely" or "very satisfied" with their energy savings, and 25 percent were "somewhat satisfied." In comparison, the majority of respondents in the previous evaluation (57 percent) were only "somewhat satisfied" with their energy savings.

Table 46: Satisfaction with Energy Savings

Rating	Percent (n=101)
Extremely satisfied	15%
Very satisfied	52%
Somewhat satisfied	25%
Not very satisfied	1%
Not at all satisfied	1%
Don't know	6%

Twelve respondents recalled getting English-language rebate applications directly from the CLEO Program, and only one of these remembered submitting an application. The primary reasons for not submitting applications were: logistics (e.g., misplaced applications, too busy) and not comprehending the issues. Conversely, six of eight participants who had used the SoCalGas website to obtain an application successfully applied for rebates.

Eleven respondents said they had called the CLEO telephone help line to get additional information or assistance; five called specifically to get help applying for a rebate. Nine of the 11 respondents indicated that the help they received was sufficient. Table 47 shows that 82 percent of those who called the help line thought the service was either "extremely" or "very helpful." These ratings have increased significantly since the previous evaluation, when only 28 percent said the assistance was "extremely" or "very helpful."

Table 47: Value of Phone Assistance

Rating	Percent (n=11)
Extremely helpful	18%
Very helpful	64%
Somewhat helpful	0%
Not very helpful	9%
Not at all helpful	9%
Don't know	0%

Table 48 shows that the CLEO Program received generally positive reviews from program participants, with 62 percent of the survey respondents saying they were "extremely" or "very satisfied" with the program. In comparison, only 33 percent of program participants gave ratings this high during the previous evaluation, while 53 percent were only "somewhat satisfied."

Table 48: Overall Satisfaction with CLEO Program

Rating	Percent (n=101)
Extremely satisfied	12%
Very satisfied	50%
Somewhat satisfied	30%
Not very satisfied	4%
Not at all satisfied	1%
Don't know	3%

4.5.4 Comparison to Best Practices

This section presents a comparison of how the current program implementation aligns with best practices for this type of program.

- **Is the program design effective?** The overall program design is achieving strong results. Participants appear to be adapting their behavior to save energy, and many have purchased energy-efficient equipment since they participated in the program. Program participants also reported that the information they received generally was useful, and their awareness of SoCalGas programs had increased.

- **Is the market well-understood?** GES recognizes the inherent challenges in targeting specific ethnic groups. Over the years, this implementer also has developed a good understanding of which media are most effective for reaching different ethnic groups, and has developed relationships with key media providers.
- **Are responsibilities defined and understood?** Yes. GES has had no problems delivering the program.
- **Is there adequate staffing?** No staffing deficiencies were described to the evaluation team.
- **Are data easy to track and report?** There are no significant reporting challenges.
- **Does the Program Manager have a strong relationship with vendors involved in the project?** Yes. SoCalGas's Program Manager receives regular and informative reporting from GES, and *ad-hoc* communications are effective in addressing immediate issues. The Program Manager is very satisfied with the working relationship with GES.
- **Does the program verify reporting systems (e.g., rebates, invoices)?** This was not assessed (e.g., for seminar attendance).
- **Are customers satisfied with the product?** Participant satisfaction with the overall program is positive.
- **Is participation simple?** No significant participation barriers were described to the evaluation team, and it appears that most customers who want to participate in the program are able to do so. Customers can take part in the program by visiting an information booth at a community event or attending an educational presentation and filling out a HEES survey.
- **Are participation strategies multi-pronged and inclusive?** Yes. CLEO program services are offered in-language for multiple ethnic communities. Customers can complete home energy surveys in person at community events and education seminars, and by phone, mail, and the internet.
- **Is participation part of routine transactions?** No. By design, customers must proactively choose to visit an energy booth or attend an energy seminar.
- **Does the program facilitate participation through the use of internet/electronic means?** Yes, the CLEO website provides program information and customer assistance to actual and prospective participants, and the program also refers customers to the online version of HEES.
- **Does the program offer a single point of contact for their customers?** Yes. All inquiries and issues are addressed by GES.
- **Are incentive levels well understood and appropriate?** Yes. Seminar attendees and booth visitors can receive free CFLs and LED night lights, which helps to improve attendance.
- **Does the program use target-marketing strategies?** Yes. GES has a good understanding of the best ways to reach each distinct ethnic group based in part on its past experience delivering this program.

4.5.5 Conclusions and Recommendations

The CLEO Program has been offered for several years and the implementer, GES, has run the program since 2002. CLEO has become a core SoCalGas program and GES has many established relationships in the Gas Company's service territory. This has made city partnering and customer recruitment less onerous with each program cycle. The program has no critical delivery problems, and no significant changes are required in the short term.

Moreover, GES recently re-designed its class handouts, web content, and downloadable brochures (using its own company budget) to include more detailed information, improved aesthetics, and user-friendliness, which may further increase program effectiveness. The program's main challenge is recruiting the new targeted ethnic groups (Hispanics and African Americans), which will require time and likely more funding for marketing.

Conclusions

In addition to being on-track to meet the program's quantitative goals, the program appears to be meeting many of the qualitative goals. Following are some of the key findings of this program evaluation.

- **Participant satisfaction with the energy classes and overall program is high, and has improved over time.**
- **Program participants are adopting desired energy efficiency behaviors.** Based on the survey, participants have installed a wide range of wide range of energy-efficient equipment since they participated in the program. Participants have made fewer behavior changes, and this may reflect the cumulative effects of CLEO and other energy education over time.
- **Participants are sharing their program experience and energy knowledge with others.** The majority of participants are recommending the energy classes and HEES surveys to their friends and family, which should help develop a critical mass of energy awareness within these communities.
- **Participant awareness of other SoCalGas programs has increased**. The survey results suggest that 70 percent of the participants are aware of utility programs to help them acquire energy-efficient equipment. In comparison, only 37 percent of customers were aware of the rebates *before* their participation, and the previous evaluation found that only 44 percent were aware of the rebates *after* their participation.
- **Participants are very satisfied with the program phone support and are getting adequate assistance regarding rebate applications and other questions.** This is another area where the program has improved markedly since the previous evaluation.

Recommendations

Based on the evaluation findings presented above, we make the following recommendations.

- **Refer ethnic customers in other SoCalGas programs to CLEO if this is not already occurring.** SCE, SoCalGas's program partner, often directs high-bill complaint customers to the program for in-language assistance, and this has increased program participation. In addition, CLEO Program inquiries often increase when SCE launches other concerted program campaigns.
- **Integrate in-home audits into the program.** According to the implementer, this program element was inadvertently removed after SCE misinterpreted a CPUC directive. CLEO could qualify and enroll ethnic customers for in-home audits as part of whole-house programs, since it already has developed a high level of trust in the CLEO program areas and has engaged captive audiences at its energy efficiency classes.
- **Provide additional funding for expensive media markets.** The program has made successful inroads into Hispanic communities. However, participation could be increased among both the Hispanic and African American communities with additional funding to cover increasing/specialized media costs.
- **Consider enhancing the program to target other ethnicities (e.g., Thai, Cambodian, Hmong).** The program is well-positioned to expand its activities to address other ethnic groups, and further drive participation in SoCalGas programs.
- **Integrate CLEO with other third-party programs (e.g., at Energy Resource Center) to deliver information in ethnic languages.** This could further increase participation in existing SoCalGas programs.
- **Develop methods to easily track subsequent participation in other SoCalGas programs.** Tracking mechanisms should be implemented to better understand how participants actually behave after participating in the CLEO Program. This is particularly true if ethnic customers are sometimes confused regarding in which programs they have participated.

Table 49: Summary of Issues and Recommendations

Issue	Consequences	Steps SoCalGas Is Taking to Address Issue (if any)	Additional Steps We Recommend	Difficulty in Addressing (H/M/L)	Value in Addressing (H/M/L)
Potentially missed outreach opportunities	Reduced program participation	None	Additional marketing funding	M	M
		None	Target more ethnic groups	M	M
		None	Integrate CLEO with other 3P programs	M	M
		Not sure	Refer other ethnic program participants to CLEO	L	M
CLEO does not enroll in-home audits	Missed energy savings opportunities	Not sure	Allow CLEO to enroll participants for home audits	M	M
CLEO participants not linked to other programs	Incomplete understanding of longer-term CLEO impacts	None	Develop cross-programs tracking methods	H/M	M

4.6 PACE Energy Savings Project (PACE) Program

4.6.1 Background

The PACE Program is a mid-stage program (started in 2006) that promotes SoCalGas programs in Chinese, Korean, Vietnamese, and Hispanic ethnic communities, which have had low program participation rates. In the current program cycle, PACE expanded its outreach to include Filipino populations and target other geographic areas, including Orange, Riverside, San Bernardino, and Ventura counties. This evaluation focused on the residential customer program element, although the program also targets small ethnic businesses (e.g., restaurants, beauty salons).

The program's goal is to educate ethnic residential customers about energy-efficient behaviors and SoCalGas programs (e.g., ESAP low-income program) via community event information booths, and formal presentations and seminars. Presentations generally are shorter in duration, are focused on SoCalGas rebate programs, and often are coordinated with organizations to reach their members. Seminars are longer in format, may include collaborating organizations, and also target specific ethnic communities.

Program outreach uses PACE's existing network of programs and ethnic community contacts and the networks of other hard-to-reach service providers in Southern California, and penetrates specific ethnic communities via trusted local citizen leaders and ethnic media. Most program offerings (e.g., energy efficiency presentations, take-home information, and phone assistance) are available in-language.

Program participants can receive energy efficiency kits that include faucet aerators and low-flow showerheads, however the PACE Program is a non-resource acquisition program with no explicit energy savings goals. The program does encourage the installation of energy efficiency measures and provides personalized customer assistance as needed.

Based on the program goals and an initial interview with the SoCalGas Program Manager, the following key research issues were identified:

- Is participation in the PACE outreach events leading to energy efficiency activities?
- Are there significant segments of the target population (either ethnic or geographic) that are being missed by the program? (Note: The program does not have formal participation goals by ethnicity.)

4.6.2 Data Collection Activities

To conduct the evaluation, the evaluation team conducted in-depth telephone interviews with the program implementer (PACE) and the SoCalGas Program Manager. These interviews were based on a series of open-ended questions. Discussion topics included:

- How the program actually works
- What is working well, and not working well

- Who is participating, and who is not
- Potential program changes
- Coordination with other SoCalGas programs

In addition, CIC Research fielded a telephone survey of program participants in English and Spanish in November and December 2011, and completed 100 surveys (six in Spanish). The survey took about 15 minutes to complete. Last, the evaluation also analyzed program participation data and other program materials (e.g., marketing brochures), which were provided in October 2011.

4.6.3 Research Findings

Table 50 shows the original 2010-2012 goals plus 2011 additional goals for the PACE Program, the actual goals completed through 2011 and Remaining Balance for 2012 goals. PACE was awarded Potential Additional Funds (PAF) and additional goals for 2011 due to meeting their 2010 goals. However, for 2012 PACE did not meet their goals or budget for 2011 and did not receive PAF or additional goals for 2012. This is only a partial list of the deliverables. Table 51 details the participants' ethnicity.

Table 50: PACE Progress Towards Goals Though 12/31/11

Deliverable	Original 2010-2012 Goal	Completed Through 12/31/11	Remaining Balance for 2012
Seminars	24	8	16
Presentations	10	7	3
Community event booths	77	82	0
HEES: on-line surveys	680	650	30
HEES: paper surveys	5,600	5,435	165
Customers reached	12,175	6,842	5,333
Efficiency kits distributed	10,000	6,051	3,949

Table 51: Ethnicity of PACE Program Participants

Ethnicity	Percent
Hispanic	36%
Unknown	25%
Korean	11%
Chinese	10%
Vietnamese	7%

Ethnicity	Percent
Other	7%
Filipino	5%

The program supports multiple State Strategic Plan goals (e.g., promoting whole-house energy solutions, reducing plug loads, participation in low-income programs) but does not have any formal Program Performance Metrics (PPM) to report. Estimated savings from the energy efficiency kits that are distributed are reported to CPUC by other residential programs' staff.

Program Delivery

According to both the SoCalGas Program Manager and program implementer, the program delivery is going smoothly, and both parties have high satisfaction levels. The contract was developed (and reviewed by a SoCalGas subcontractor) before the current Program Manager took over, and there have been no changes to responsibilities or scope. The current contract has added market strategy details that were perceived to be lacking in the 2006 cycle contract. As reflected in the Table 51, the program has been particularly effective at engaging Hispanic participants.

The implementer's marketing, expenditures, and participation reporting are going well and meeting SoCalGas's needs. Each progress report shows detailed activities, spending by task, and running goals and budget balances. For this program cycle, the implementer had to adapt to additional reporting formats for the SMART system, and after receiving training, reported that this has gone smoothly. No invoices have been rejected, although some have been paid late. In the 2006 program cycle, screening of HEES participants (for eligibility and payments to PACE) took longer than four weeks, and turnaround has been improved markedly because of SoCalGas's new HEES contractor. SoCalGas also has consistently delivered energy efficiency kits and press releases to PACE on time.

PACE's relatively minor delivery challenges have pertained to internal SoCalGas issues. In December 2011, the communications group still was working on developing final brochure templates, which affected all third-party programs. PACE has been able to promote the program, but has not been able to use the SoCalGas logo on distributed materials. Some of these materials have required relatively minor updates to past program materials.

During the 2006 program cycle, PACE used a translation company subcontractor, which caused production and approval delays due to work quality issues. In the current cycle, PACE staff translate the materials, which has shortened the development process, although SoCalGas approvals are not always timely. Rebate applications are available at program events. However, SoCalGas and PACE do not translate the forms (although they have considered doing so) due to concerns about costs and the challenges in translating technical details. Instead, applications are distributed by PACE staff who can help customers in-

language. Program handouts also include phone numbers to contact for help with completing applications from PACE in-language.

PACE also offers $10 gift cards to seminar and presentation participants who return evaluation forms; to date, the response rate has been low, in part because customers move, so the post office returns many mailers. However, the evaluations that have been returned often recommended additional organizations to contact, which has broadened the program's outreach.

Program Effectiveness

Early in the telephone survey, respondents were asked if they were aware of SoCalGas rebates for energy-efficient equipment. The goal was to measure how much they recalled about their participation in the PACE Program. As shown in Table 52, 55 percent of the respondents were aware of the general availability of SoCalGas rebates, while 44 percent were not. These results are virtually identical to results reported in the previous program evaluation.

Table 52: Awareness of SoCalGas Rebates After Participation

Response	Percent (n=100)
Yes	55%
No	44%
Don't know	1%

Nine percent of the respondents indicated they had received rebates from SoCalGas prior to participating in the PACE Program. Table 53 shows the reasons why 83 percent of the respondents had not received rebates in the past (multiple responses were accepted). Thirty-two of these respondents were not aware that rebates for energy-efficient equipment were available, 14 percent did not apply for other reasons, and 34 percent replied "don't know." Taken together, the responses in Table 52 and Table 53 suggest that customers' awareness of SoCalGas rebate programs has increased, although there is still room for improvement.

Table 53: Reasons for not Getting Rebates Before Participation

Reason	Percent (n=83)
Not aware that rebates existed	32%
Did not try to apply	14%
Did not want/need energy-efficient equipment	8%
Did not qualify	6%
Did not buy any appliances/equipment	%4

Reason	Percent (n=83)
Too busy	2%
Too much hassle	1%
Other	1%
Don't know	34%

As shown in Table 54, program participants are becoming aware of the PACE Program through a wide variety of sources. The largest share of participants (68 percent) learned about the program by visiting or observing an energy efficiency information booth at a community event or street fair. The second and third most common sources of program awareness were brochures provided by PACE (32 percent) and information mailed to the home (25 percent). Additional leading sources of information included: recommendations from family and friends, radio and television advertising, children's schools, and the internet.

Table 54: Source of PACE Program Awareness

Source	Percent (n=100)
Community event information booth	68%
Brochure	32%
Information mailed from the PACE Program	25%
From a friend or family member	22%
On internet	14%
Information from children's school	13%
Radio show announcement or advertising	12%
Adult learning center announcement	12%
Someone from PACE came to my house or apartment	10%
TV show announcement or advertising	8%
Newspaper advertising or article	8%
Senior citizen center announcement or notice	6%
PACE office	6%
Community center or cultural organization	6%
Job fair/unemployment agency, etc.	4%
Church or faith-based organization presentation or announcement	4%

Source	Percent (n=100)
Adult daycare presentation or announcement	3%
In my gas bill	2%
Other	4%
Don't know	2%

Sixty percent of the respondents visited an energy efficiency information booth at a community event as part of their program participation. Most of these respondents simply noticed a booth while attending an event, while a few learned of the booths in advance from community center announcements or school information. The most common reason for *not* visiting was a lack of awareness or participation in community events generally, and not lack of interest, which shows that the booths have a high "attraction rate."

When asked about their reasons for visiting a booth, most visitors (77 percent) said they wanted to learn about ways to save energy in general (Table 55). Additionally, 58 percent generally were curious about the information that would be presented and 57 percent of the visitors wanted to specifically learn about SoCalGas Company programs.

Table 55: Reasons for Visiting Energy Booth

Reason	Percent (n=60)
To learn about ways to save energy	77%
Was curious	58%
To learn about Gas Company programs	57%
To get free prizes or equipment	45%
Because friends/family did	35%
Someone recommended it to you	30%
Other	2%
Don't know	2%

Among the respondents who visited a booth, 51 reviewed or took home energy efficiency information, while 24 also received information in the mail or from PACE staff who visited

their homes.[12] As shown in Table 56, the majority of participants who received information in the mail and/or from booths thought it was "extremely" or "very useful." When asked if the information helped them understand how to use SoCalGas rebate programs specifically, 61 percent said the information did help them, 28 percent said it did not, and 11 percent did not know.

Table 56: Usefulness of Program Energy Efficiency Information

Rating	Percent (n=54)
Extremely useful	19%
Very useful	54%
Somewhat useful	24%
Not very useful	2%
Not at all useful	0%
Don't know	2%

Sixteen respondents said they were aware of the energy efficiency training classes offered through the program; ten of these respondents chose to attend a class in order to learn how to save energy and to get information about SoCalGas programs. As noted earlier, the primary means of customer outreach/education for this program are community event booths and distributed program literature.

Eight of the ten class attendees said the information they received was either "extremely" or "very useful"; two said it was "somewhat useful." In a separate question, nine respondents indicated that the class helped them understand how to use SoCalGas rebate programs either "extremely" or "very well," while one said that the session was "somewhat helpful." That said, three attendees would have preferred more time to discuss additional details of the application process and/or filling out an application. Seven of the attendees recommended the presentation to others.

Thirty-four percent of all respondents recalled completing a Home Energy Efficiency Survey (HEES) as part of their program participation. Most of these respondents (87 percent) completed a written survey in person, while six percent completed internet surveys, and the remainder completed phone and mail-in surveys. Fifty-three percent of the survey takers reported that the survey was "very easy" to complete; 29 percent said it was "somewhat easy" to complete, and six percent said it was "somewhat hard" to complete. As shown in Table 57,

[12] Eight respondents received information at PACE's offices. Some respondents received the information from multiple sources.

the majority of survey takers took the survey to learn about energy-saving opportunities in their homes, and to better understand their home energy use.

Table 57: Reason for Completing HEES Survey

Reason	Percent (n=34)
To learn about energy-saving opportunities for my home	82%
To better understand my home energy use	71%
Was curious	65%
To get free prizes or equipment	50%
Friends/family recommended it	21%
Other	3%

Table 58 shows that 78 percent of the respondents thought the HEES survey was "extremely" or "very useful" for improving their understanding of energy-saving opportunities, while 22 percent thought the survey was "somewhat useful."[13] In a separate question, 72 percent of the HEES participants said they recommended the HEES survey to others.

Table 58: Usefulness of HEES Survey

Rating	Percent (n=34)
Extremely useful	9%
Very useful	69%
Somewhat useful	22%
Not very useful	0%
Not at all useful	0%

Importantly, all of the survey respondents were asked to describe any energy-use behaviors and equipment they changed after participating in the PACE Program. Table 59 shows that the greatest changes pertained to installing low-flow showerheads and faucet aerators and replacing incandescent light bulbs with CFLs. Overall, participants are changing a wide range of behaviors to small degrees. The previous evaluation reported more significant behavior

[13] In the previous evaluation, 52 percent said the survey was "very useful."

changes. It is possible that the program's target population has modified its energy consumption patterns due to the PACE Program and other energy education. [14]

Table 59: Changes in Energy-Use Behavior

Type of Change	Percent (n=100)
No changes	37%
Install low-flow showerheads and faucet aerators	28%
Replace light bulbs with CFLs	20%
Turn off lights in unused rooms	14%
Turn off or unplug items when not in room or not using	9%
Lower thermostat setting for heat	8%
Replace appliances with energy-efficient, ENERGY STAR-rated models	8%
Use less water	8%
Use washers at night	6%
Lower hot water temperature	3%
Dry clothes on line or rack	3%
Fix leaky faucets	3%
Close doors and windows when heat is on	3%
Raise thermostat setting for cooling	2%
Always wash with full load	2%
Take shorter, cooler shower	2%
Weather-stripping/caulking	2%
Minimize opening fridge door	2%
Replace windows/cover with foam	2%
Do all cooking for whole day at one time	2%
Reduce lighting use	1%
Wash with cold water	1%

[14] In the previous evaluation, respondents most often said "reduced lighting use" (56 percent) and "use air conditioning less/fans more" (22 percent). It is likely that the installed showerheads and aerators are those distributed by the program, although additional equipment also could have been installed. The survey did not inquire about this.

Type of Change	Percent (n=100)
Always dry with full load	1%
Install wall and/or attic insulation	1%
Use appliances less	1%
Don't know	4%

Table 60 shows the energy-efficient equipment respondents installed after participating in the program. Overall, participants installed a wide range of efficient equipment. Not surprisingly, the most common types of new equipment they installed were CFL or T-8 lighting (63 percent). Furthermore, 62 percent of the respondents installed low-flow showerheads, 33 percent installed water faucet aerator, and 16 percent purchased efficient clothes washers and/or efficient refrigerators.

Table 60: New Energy-Efficient Equipment Installed

Type of Equipment	Percent (n=100)
Compact fluorescent (CFL) or T-8 lighting	63%
Low-flow showerheads	62%
Water faucet aerators	33%
Efficient clothes washer	16%
Efficient refrigerator	16%
None	13%
Efficient clothes dryer	9%
More attic insulation	7%
Efficient windows	6%
Efficient window unit air conditioner	5%
High-efficiency gas furnace	4%
More wall insulation	3%
Whole-house fan	3%
Efficient central air conditioner	3%
Efficient water heater	3%
Efficient dishwasher	2%
Caulking and weather-stripping	2%

Type of Equipment	Percent (n=100)
Eco-friendly toilet	1%
New door	1%
New ducts	1%
Efficient stove	1%

Program participants also were asked to rate their satisfaction with the energy savings resulting from installations of new energy-efficient equipment. Table 61shows that 46 percent of the respondents were "somewhat satisfied" with their energy savings and 29 percent were "very satisfied"

Table 61: Satisfaction with Energy Savings

Rating	Percent (n=87)
Extremely satisfied	13%
Very satisfied	29%
Somewhat satisfied	46%
Not very satisfied	1%
Not at all satisfied	0%
Did not install/cannot say	5%
Don't know	7%

Twenty-two respondents obtained English-language rebate applications directly from the PACE Program, and 11 of them submitted the applications. The primary reasons for not submitting applications were logistics (e.g., misplaced applications, too busy) and poor comprehension of the information. In addition, two of three participants who had used the SoCalGas website to obtain an application successfully applied for rebates.

Five respondents had called the PACE telephone help line to get additional information or assistance. Three of these respondents called specifically to get help applying for a rebate, and all of them said that the help they received was sufficient. Overall, four callers thought the phone assistance was "somewhat helpful," and one thought it was "very helpful." According to PACE staff, participants, especially senior citizens, preferred interpersonal contact to phone assistance.

Table 62 shows that the PACE Program receives positive reviews from program participants, as 51 percent of the respondents were "very" or "extremely satisfied" with the program

compared to four percent who were not satisfied. Overall, these ratings are very similar to those from the previous evaluation.

Table 62: Overall Satisfaction with PACE Program

Rating	Percent (n=100)
Extremely satisfied	12%
Very satisfied	39%
Somewhat satisfied	37%
Not very satisfied	4%
Not at all satisfied	0%
Don't know	8%

4.6.4 Comparison to Best Practices

In this section, the evaluation team compares how the current program implementation aligns with best practices for this type of program.

Is the program design effective? The overall program design is achieving positive results. Participants appeared to be adapting their behavior to save energy, and many had bought energy-efficient equipment since they participated in the program. Program participants also reported that the information they received generally was useful. Awareness of SoCalGas programs has increased.

Is the market well-understood? Yes. PACE recognizes the inherent challenges in targeting specific ethnic groups. Over the years, PACE has developed a better understanding of which media are most effective for reaching different ethnic groups, and has developed relationships with key community contacts in multiple cities.

Are responsibilities defined and understood? Yes. PACE has had no problems delivering the program.

Is there adequate staffing? No staffing deficiencies were described to the evaluation team.

Are data easy to track and report? There are no significant reporting challenges.

Does the program manager have a strong relationship with vendors involved in the project? Yes. SoCalGas's Program Manager receives regular and informative reporting from PACE, and *ad-hoc* communications are effective in addressing immediate issues. The Program Manager has high satisfaction working with PACE.

Does the program verify reporting systems (e.g., rebates, invoices)? Except for the HEES processing, this was not assessed (e.g., for seminar attendance).

Are customers satisfied with the product? Participant satisfaction with the overall program is generally positive.

Is participation simple? No significant participation barriers were described to the evaluation team, and it appears that most customers who want to participate in the program are able to do so. Customers can take part in the program by visiting an information booth at a community event or attending an educational presentation, and filling out a HEES survey.

Are participation strategies multi-pronged and inclusive? Yes. PACE program services are offered in-language for multiple ethnic communities. Customers can complete home energy surveys in person at community events and education seminars, and by phone, mail, and the internet.

Is participation part of routine transactions? No. By design, customers must proactively choose to visit an energy booth or attend a presentation.

Does the program facilitate participation through the use of internet/electronic means? Yes, the PACE website provides program information and customer assistance to actual and prospective participants, and the program also refers customers to the online version of HEES.

Does the program offer a single point of contact for their customers? Yes. All inquiries and issues are addressed by PACE.

Are incentive levels well-understood and appropriate? Program participants can receive free low-flow showerheads and water faucet aerators, and PACE has noted that people attending the community events are very attracted to the equipment, which leads them to take the HEES surveys.

Does the program use targeted marketing strategies? Yes. Compared to the 2006 cycle, the program is conducting a broader range of marketing activities and relying less on current PACE clientele. The survey results indicated that participants are learning about the program from a wide variety of sources.

4.6.5 Conclusions and Recommendations

The PACE Program has been offered since 2006. The program implementer interviewed for this evaluation said that community outreach and customer recruitment "continue to get easier." Importantly, past issues pertaining to the implementation contracting and materials translations have been resolved. Reaching out to new communities (e.g., Orange County) has necessitated some longer trips by PACE staff. Overall, the outreach techniques that have been used for other groups are working in these new communities, where PACE staff have existing relationships with leading ethnic organizations. The program has no critical delivery problems, and no significant changes are required in the short term.

In addition to being on track to meeting its quantitative goals (e.g., number of seminars conducted), the program is meeting many of the qualitative goals.

Conclusions

Following are some of the key findings of this program evaluation.

- **Participant satisfaction with the overall program generally was positive.** Half of the survey respondents were "very satisfied" or "extremely satisfied" with the program, and relatively few were dissatisfied.
- **Program participants are adopting desired energy efficiency behaviors.** Based on the survey, many participants bought energy-efficient equipment after they participated in the program, and to more modest degrees, have adapted their behavior to save energy.
- **The energy efficiency event booths are doing a good job of attracting participants and providing useful information.** Most respondents who were aware of the energy booths chose to visit one. Moreover, participants generally had positive perceptions

about the usefulness of the materials they received, and these ratings have increased since the previous evaluation. Sixty-one percent of the visitors said the information helped them understand how to use SoCalGas rebate programs.

- **The HEES surveys are very informative and generally easy to complete.** Sixty-nine percent of the survey respondents stated that the surveys were "extremely" or "very useful" in helping them understand their energy-saving opportunities. Seventy-two percent recommended the survey to others.
- **Participants generally are satisfied with the program phone support.** Relatively few participants had used the phone line, although the survey results suggest it was helpful to them.
- **Customers' awareness of other SoCalGas programs improved after their participation in PACE, but this can be increased.** The survey results show that roughly half of the participants still were not aware of SoCalGas programs to help them acquire energy-efficient equipment.

Recommendations

Based on the evaluation findings presented above, the evaluation team provides the following recommendations.

- **Refer ethnic customers in other SoCalGas programs to PACE if this is not already occurring.** PACE offers valuable in-language interpersonal contact with ethnic customers, which often is a key factor in improving comprehension of energy efficiency issues and resources.
- **Provide additional funding for schools outreach.** The Green Schools element of the CLEO Program has been well-received and could be replicated in the PACE Program. Providing energy efficiency information and HEES surveys to children to share with their parents can be another effective way to reach adults who are not fluent in English.
- **Consider enhancing the program to target other ethnicities (e.g., Thai, Cambodian, Hmong).** The program is well-positioned to expand its activities to address other ethnic groups, and drive additional participation in SoCalGas programs.
- **Integrate PACE with other third-party programs to deliver information in ethnic languages.** This could further increase participation in existing SoCalGas programs.
- **Develop methods to easily track subsequent participation in other SoCalGas programs.** Tracking mechanisms should be implemented to better explicate how participants actually behave after participating in the PACE Program. This is particularly true if ethnic customers are confused regarding in which programs they already have participated

Table 63: Summary of Issues and Recommendations

Issue	Consequences	Steps SoCalGas Is Taking to Address Issue (if any)	Additional Steps We Recommend	Difficulty in Addressing (H/M/L)	Value in Addressing (H/M/L)
Potentially missed outreach opportunities	Reduced programs participation	None	Additional funding for schools outreach Target more ethnic groups Integrate PACE with other 3P programs	M	M
		None	Refer other ethnic program participants to PACE	M	M
		None		M	M
		Not sure		L	M
PACE participants not linked to other programs	Incomplete understanding of longer-term PACE impacts	None	Develop cross-programs tracking methods	H/M	M

4.7 LivingWise Program

This section describes the LivingWise Program (LivingWise) in the SoCalGas service territory. The chapter includes an assessment of the program's success to date and provides recommendations for improvement.

4.7.1 Background

LivingWise is a school-delivered residential energy savings program offered to eligible teachers as an elective educational program. The program provides classroom activities, a take-home retrofit kit (*Activity Kit*), and home-based audit guidelines designed to encourage 6th-grade students and their families to install measures that conserve energy and water. The program sponsors expect that, through these activities, families will become more informed about resource efficiency and, as a result, take advantage of other opportunities for conservation in their homes.

LivingWise is provided by Resource Action Programs (RAP), which delivers similar programs in jurisdictions throughout the United States. RAP provides a variety of materials to participating teachers, including a *Teacher Guide*, a chart mapping the LivingWise content to California State Education Standards, classroom posters, a set of six additional activities to augment the lessons (available in English and Spanish), a program video for students, letters prepared for parents about the program, and data collection instruments. The program also is supported by the *GetWise* website (*www.getwise.org*), designed for teachers and students.

The program comprises lessons in six topic areas, implemented through a *Teacher Guide* and a *Student Guide*. The topic areas are:

- Natural Resources
- Water
- Natural Gas
- Energy (including electricity)
- Conservation
- Conservation At Home

Teachers can cover the topics in a single lesson or over multiple lessons by conducting the activities included in the *Teacher Guide*. The *Conservation At Home* topic includes activities for students to do at home using the program-provided *Activity Kits*. Students, with help from their parents, install the devices from the *Activity Kits* in their homes and complete a home audit report, called a *Home Check-Up*. In addition to the *Activity Kits*, each student receives a *Student Guide;* a *Home Energy & Water Use Workbook*; a *Certificate of Achievement*; and a coupon for a free *Get Wise* wristband.

The materials in the *Activity Kit* vary somewhat from year to year to reflect program budget allocations or directives from funding partners. Contacts from RAP reported that they anticipate the content of the take-home kits could change as the effects of EISA lead program sponsors to drop bare spiral CFLs under 30 Watts. Items can be added or removed from the

kits depending on the sponsors involved and their interest in obtaining savings in electricity, water, or natural gas. Contacts from RAP noted that the organization monitors developments in residential efficiency in order to identify additional measures that could be included.

LivingWise staff rely on the results of several surveys to help them assess program achievements and identify opportunities for improvement. Teachers provide feedback about the materials and report the number of students they taught through a 10-question program evaluation survey. On the survey, teachers can indicate whether they want to participate again the next year.

In addition, a double-sided second sheet—a Scantron form—collects information from students and their parents. The Scantron form includes a 13-question *Home Check-Up* survey, which solicits household demographic and home energy use data, such as the number of children in the home and the main source of heating fuel. In addition, the form includes a 23-question *Home Activities* survey, which explores which of the items in the *Activity Kits* families installed, requests pre-and-post data on water flow rates associated with the showerhead and aerators, and poses questions to gauge the extent to which students and their families modified their behavior to conserve energy and water. Finally, the Scantron form includes a ten-question *Pre Survey* and *Post Survey* (comprised of identical questions on each side of the form) designed to assess student learning.

RAP will leverage funding from multiple utilities whenever possible and will include resource conservation measures that address electricity, natural gas, and water if possible. In areas of SoCalGas territory that are served by SCE, LivingWise is sponsored through collaboration between SCE and SoCalGas. In areas of SoCalGas territory not served by SCE, LivingWise is sponsored through a separate contract between SoCalGas and RAP. In addition, water agencies provide additional funding for more than 50 percent of program locations.

4.7.2 Correlation with Content Standards

As noted, LivingWise materials include a chart mapping the LivingWise content to California State Education Standards. The chart identifies specific pages in the LivingWise materials that provide content that relates to state standards for science and math.

RAP contacts clarified that, although LivingWise correlates to state standards, it is not a curriculum in itself. RAP contacts explained that school districts typically select curricula (e.g. textbooks) that best support California Department of Education standards; RAP offers LivingWise to teachers as an elective program to enhance or supplement approved curricula.

4.7.3 Program Enhancements

RAP contacts reported making several improvements to LivingWise content, that RAP released beginning in fall 2011, including:

- Increasing the extent to which pre and post survey questions refer to specific LivingWise content;
- Including additional workforce, education, and training content; and,

- Introducing an improved layout and reduced number of required calculations in *Workbooks*.

RAP contacts reported conducting a study, which revealed the improved layout and reduced number of required calculations in *Workbooks* correlated with increased measure installation; RAP contacts inferred that simplifying the calculations increased their accessibility, thereby prompting students and their families to complete measure installation.

4.7.4 RAP's Assessment of Energy Savings Attribution

Energy savings are based on the amount of natural gas saved in a year by the average participating family as a result of installing the provided measures. The current kits have a deemed natural gas saving value of 11.99 therms. Over time, the program adjusts savings values based on student surveys that report measure installation rates.

4.7.5 Teacher Recruitment

SoCalGas identifies the geographic area in which it wants to deliver the program. Implementation staff identify eligible schools in the targeted area and begin the outreach process. This happens in phases throughout the year, with the program implementer targeting successive areas.

RAP has a program coordinator responsible for recruiting teachers and provides support to participating teachers. The program coordinator places calls to teachers directly with information about the program and encourages them to consider participating. The coordinator sends a teacher packet and sample kit to interested teachers and follows up with them to determine if they plan to use the lessons with their classes and, if so, how many sets of student materials they need. The coordinator discusses with the teachers when they might best teach the lessons and arranges for the materials to be shipped to the teachers.

RAP contacts explained that, due to its contractual obligations to achieve annual targets for installed measures, it manages the timeline for distribution of LivingWise materials to facilitate teachers' completing the program and returning program data by specific dates. Regarding RAP's distribution timeline, contacts noted that it is not always possible for RAP to grant teacher requests to receive LivingWise materials during specific periods of the school year (e.g. fall or spring semesters) because its requirement to meet annual targets frequently supersedes such requests. In addition to managing its distribution timeline, RAP includes numerous, strategically placed reminders, as well as incentives on all of the teacher, student, and parent materials to encourage participants to return the data by specific dates.

Research Overview

This document presents findings from process evaluation activities to support the LivingWise program. This evaluation sought to assess the program's effectiveness and identify possible recommendations for improvement.

As a first step in the evaluation, the evaluation team reviewed program documentation (including PIPs, logic models, and previous LivingWise evaluations) and conducted an in-depth, in-person interview with the SoCalGas Program Manager of the LivingWise program. Following these activities, the team identified potential researchable issues and used them to guide subsequent questions for RAP program staff and a survey of participating teachers.

4.7.6 Research Objectives

The researchable issues identified early in the evaluation include:

- Are the teacher and student surveys sufficient for estimating behavior or savings?
- What are the teacher experiences with the curriculum: accessibility, usability, relevance, supporting equipment?
- Are there opportunities or recommendations to improve the curriculum?

The research issues and survey topics reflected prior experience with the program and recommendations from a 2008 evaluation of SCE's LivingWise program, which included several recommendations specific to curriculum and measurement of educational outcomes.

Data Collection Activities

This evaluation consisted of the following activities:

- Review of program documentation (PIPs, logic models, previous LivingWise evaluation, etc.)
- In-person interview with the SoCalGas Program Manager at the evaluation kick-off meeting
- In-depth telephone interview with implementation Program Manager
- Email survey with a sample of participating teachers

Table 64: LivingWise Interview Samples

Interview Group	Sample
SoCalGas Program Manager	1
RAP Staff	2
Teachers	102*

* Only 86 of the 102 surveys fully completed

The evaluation team conducted an in-depth, in -person interview with the SoCalGas Program Manager of the LivingWise program in September 2011 and a telephone interview with two managers from the implementation contractor team in December 2011.

The evaluation team also conducted a web-based survey with participating teachers, using a list provided by RAP that had contact information for 968 teachers participating in LivingWise in 2010 and 2011. The evaluation team drew a random sample of 400 of the 968 teachers to create the survey list. In November 2011, the team emailed a series of requests, asking each of

the 400 teachers to complete the web-based survey. Between November 18 and December 9, 2011, the evaluation team received 112 non-blank submissions to the web-based survey, from which the evaluation team identified a total of 102 unique respondents. Table 65 displays final dispositions from the teacher survey.

Table 65: Teacher Survey Final Disposition

Disposition	Count
Sample frame	968
Teachers solicited	400
Surveys submitted[1]	112
Unique respondents[2]	102
Complete responses	*86*
Incomplete responses	*16*

[1] An additional 11 blank (no responses) surveys were submitted.
[2] Nine teachers submitted the survey more than once. The evaluation team kept the most complete responses.

To avoid discarding potentially meaningful responses, the evaluation team elected to analyze all unique, non-blank surveys, regardless of whether respondents completed each of the questions. Therefore, sample sizes vary throughout the report, and are noted where applicable.

4.7.7 Research Findings: Teachers

This section presents the results of the teacher survey and discusses their reported experiences with LivingWise materials. The process evaluation examined teachers' experiences regarding the accessibility and relevance of LivingWise program materials and their impressions regarding program outcomes. In addition, one section asked teachers to assess the extent to which LivingWise content correlates with California State Educational Standards. The survey also estimated teacher satisfaction with their experience.

Courses and Students Taught; Interactions with RAP

Teacher contacts reported having taught LivingWise between one and 15 times; however 52 percent reported having taught the program just once. On average, each teacher reported having taught LivingWise to 81 students (Table 66).

Table 66: Number of Classes and Students Taught LivingWise (n=102)

	Mean	Minimum	Maximum
Number of times taught LivingWise	2	1	15
Number of students taught LivingWise	81	5	650

Most teachers (88 percent) reported either being "somewhat" or "very" satisfied with their interactions with RAP.

Accessibility of Program Materials

The majority of teachers reported that LivingWise "content" and "reading level" were "just right" (80 percent and 76 percent, respectively) (Table 67). Teachers' responses varied regarding the appropriateness of the level of difficulty of *Workbook* calculations. Nearly half (48 percent) of teachers reported that the calculations were either "somewhat difficult" or "too difficult" and nearly half (48 percent) rated the difficulty of the calculations as "just right."

Table 67: Teachers' Rating of Level of Difficulty of LivingWise Program Materials

	Too Difficult		Just Right		Too Easy
Material	**1**	**2**	**3**	**4**	**5**
LivingWise content (n=100)	3%	12%	80%	5%	0%
Reading level (n=101)	2%	16%	76%	3%	3%
Workbook calculations (n=99)	8%	40%	48%	2%	1%

About three-quarters (72 percent) of teacher contacts reported including *Workbook* calculations in their delivery of LivingWise. Those who reported the calculations as "too difficult" were significantly less likely to report having used the *Workbook* calculations (Mann-Whitney $p<.05$). Of the teacher contacts who reported including *Workbook* calculations in their delivery of LivingWise (57), 61 percent reported using "some" class time to go over students' calculations (Table 68).

Table 68: Use of Class Time To Review Student Calculations (n=54)

Amount of Time	Percent
A little	17%
Some	61%
A lot	20%
None	2%

Relevance of Program Materials

Most teachers said they either "somewhat" or "strongly" agreed that *Activity Kits* were "useful learning tools" (87 percent) and were easy for students to use (71 percent). In open-ended comments, 12 teachers reported being aware that students may not install the *Activity Kits* measures, either because students' guardians are unavailable to help them (4 of 12), because

families who rent their homes assume they cannot install the measures (4 of 12), or because low-flow showerheads and/or aerators do not fit their fixtures (4 of 12).

The *Teacher Guide* includes eight optional classroom activities. Teachers most frequently reported using the "Water: Mini Water Cycle Experiment," the "Conservation at Home: Heat from Light Bulbs," and the "Water: Pollution Clean Up" activities (Table 69).

Table 69: Reported Use of Optional Classroom Activities (n=72)

In the Classroom Activities	Percent
Water: Mini Water Cycle Experiment	57%
Conservation at Home: Heat from Light Bulbs	56%
Water: Pollution Clean Up	44%
Water: Global Apple Activity	36%
Energy: Solar Power at Work	33%
Conservation at Home: Insulation Tests	33%
Conservation: Conservation Cookie	29%
Water: Soap Powered Boat Activity	19%

At the end of each of the six sections in the *Teacher Guide* is an optional "Make the Connection" discussion idea. Most teachers (64 percent) reported engaging their students in "two or three" of the discussion ideas (Table 70). The *Teacher Guide* appendix includes a set of six additional activities to augment the lessons (available in English and Spanish). Most teachers (64 percent) reported engaging their students in "two or three" of the six additional activities. Fifteen percent of teachers could not recall how many of these discussions and activities they had conducted.

Table 70: Number of 'Make the Connection' Discussions and Appendix Activities Conducted (n=74)

	Supplementary Activity	
Number Conducted	Make the Connection Discussions (n=74)	Additional Teacher Guide Appendix Activities (n=71)
None	9%	28%
One	7%	17%
Two or three	64%	45%
Four or five	18%	8%
Six	3%	1%

The program is supported by the *GetWise* website (*www.getwise.org*), designed for teachers and students. The website provides information on how to use the materials and a teacher hotline. Less than one-fifth of responding teachers (12 of 87, or 14 percent) reported accessing the program website; these 12 rated the usefulness of various website features (Table 71). Features that the teachers most frequently rated useful (a "4" or a "5" on a 5-point scale) included the "FAQ section," the "additional English classroom activities," the "resource links," and the "Kit Installation Instructions."

RAP contacts said they do not expect high website traffic, because the website is not a key component of the program and using the LivingWise materials does not require teachers to access the site.

Table 71: Teachers Ratings of Utility of Website Features (n=12)

Feature	Number of Teachers Rating Useful (a "4" or "5" on a 5-point scale)
FAQs	9
Additional classroom activities (English)	8
Resource links	8
Kit installation instructions	7
Additional classroom activities (Spanish)	4
Video instructions	4
Teacher hotline	1

The evaluation team sought to understand the extent to which teachers considered LivingWise photos and interactive content appropriate for their students' demographic and socio-economic characteristics. Close to three-quarters (70 percent) of respondents said they either "somewhat," or "strongly" agreed that the LivingWise photos and interactive content were appropriate.

Correlation with California Content Standards

A majority of surveyed teachers agreed that the program is aligned with California standards (76 percent reporting a "4" or a "5" on a five-point scale) and that the materials facilitated accurate assessments of students' progress (64 percent) (Table 72).

Table 72: Alignment with California Math and Science Content Standards

	Strongly Disagree		Neutral		Strongly Agree
Statement	**1**	**2**	**3**	**4**	**5**
I think LivingWise is fully aligned with the standards. (n=91)	2%	5%	16%	42%	34%
Program materials provide sufficient opportunity for an assessment of student learning with respect to the correlated math and science standards. (n=89)	2%	11%	22%	43%	21%

Most teachers said they either "somewhat" or "strongly" agreed that the program materials "engaged students in learning," "invite students to engage in analytical thinking," and "invite students to engage in synthesizing ideas" (84 percent, 80 percent, and 77 percent, respectively; Table 73).

Table 73: Effectiveness of Program Materials as Learning Tools

	Strongly Disagree		Neutral		Strongly Agree
Statement	**1**	**2**	**3**	**4**	**5**
The kit was a useful learning tool. (n=96)	2%	7%	4%	22%	65%
The materials engaged students in learning. (n=96)	1%	7%	8%	41%	43%
Program materials invite students to engage in analytical thinking. (n=94)	1%	5%	14%	51%	29%
Program materials invite students to engage in synthesizing ideas. (n=92)	2%	5%	15%	48%	29%

Eighty-six percent of teachers reported that they liked having a set of optional activities and 73 percent appreciated having the activities of the *Activity Kit* and *Workbook* in a single lesson, as opposed to being integrated into multiple lessons (Table 74).

Table 74: Teacher Opinions about Integrating Optional Activities (n=96)

	Strongly Disagree		Neutral		Strongly Agree
Statement	**1**	**2**	**3**	**4**	**5**
I like that the Teacher Guide listed activities as optional, as opposed to	2%	4%	10%	38%	46%

integrating them into the base curriculum.					
I like that the activities of the *Activity Kit* and *Workbook* were in a single lesson, as opposed to integrated into multiple lessons.	3%	6%	18%	33%	40%

Twenty-three teacher contacts commented that it is challenging to find time to implement aspects of LivingWise, because meeting California State Education Standards consumes most of their time. Eight of the 23 clarified that it would be possible to cover more LivingWise material, if the LivingWise materials were provided at the point in the school year when the LivingWise content would best support the existing curriculum (e.g. fall vs. spring semesters).

Representative remarks from teachers, concerning the timeline for distribution of LivingWise materials, included:

- "The kit covers topics that we normally cover at the end of the year, so it is hard to use it at this time of the school year."
- "If we were allowed to do these when they fit into our passing guide and benchmark testing, I would do more of them. But, since we have to have them done so early, I don't. These topics are at the end of our book and the end of the year."
- "I feel the materials were not used as they should be. We received materials late in the year so it was very quick.
- "Try to connect the time you send out the kits with the earth week in April. This is the time we cover this material."

4.7.8 Student Motivations and Outcomes

Teachers believed that the themes of both environmental stewardship and cost savings appear to appeal strongly to students; 87 percent of teachers reported that students were motivated to save energy as a means "to save the environment," and 81 percent of teachers reported that students were motivated to save energy "to save on household expenses."

LivingWise uses *Pre* and *Post Surveys* to measure student knowledge with respect to key LivingWise concepts. Teachers administer *Pre* and *Post Surveys* during class time; the teacher materials include answer keys. Most (70 of 88, or 79 percent) teachers said they either "somewhat" or "strongly" agreed that the ten questions in the *Pre* and *Post Surveys* are sufficient to assess student learning (Table 75).

Table 75: Teacher Agreement that *Pre* and *Post Surveys* Measure Student Knowledge (n=88)

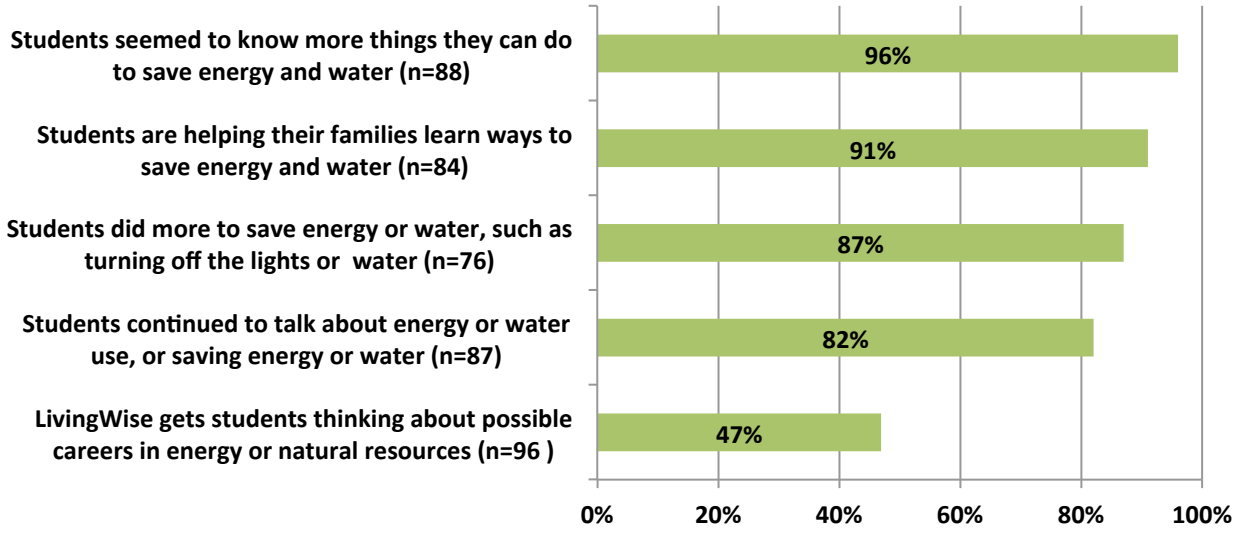
Statement	Strongly Disagree		Neutral		Strongly Agree
	1	2	3	4	5

The *Pre* and *Post Surveys* provide a good assessment of student knowledge.	3%	1%	16%	43%	36%

Students, with help from their parents, install the devices from the *Activity Kits* in their homes, complete *Workbook* calculations that generate energy savings estimates, and complete home audit reports (called a *Home Check-Up)*. Students complete the *Home Activities* survey to indicate which items in the *Activity Kit* their families installed, to record the pre and post water flow rates associated with the showerhead and aerators, and to respond to program assessment questions such as "Did your family change the way they use energy?" and "How would you rate the LivingWise program?" Most (85 percent) teachers reported that they discussed with students their answers to the *Home Activities* survey.

The evaluation team asked teachers to rate the extent to which they agreed with several statements about the effect of LivingWise on their students (Figure 19). Most teachers said that after their students completed the LivingWise activities, they appeared to exhibit all of the targeted behaviors asked about in the current research.

Figure 19: Student Behavior Changes after Course Completion (Percent "Agree")[1]



[1] Percent of teachers rating each item a "4" or a "5" on a 5-point scale.

4.7.9 Comparison to Best Practices

LivingWise is a mature program that meets or exceeds best practices for the development and delivery of educational programs. RAP has successfully delivered similar programs in

jurisdictions throughout the United States for several years. The program is typically over-subscribed in the SoCalGas territory.

LivingWise activities reflect a focused program theory that allows RAP to provide materials that engage 6th-grade students in specific activities around understanding energy efficiency. The kits and information provided by the program are attractive to the target market (teachers and their students) and offer an opportunity for students to engage their families.

The program has sufficient tracking and is able to provide detailed contact lists of participating teachers. RAP has access to experts on curriculum and has made adjustments to content and difficulty of the program over time, including incorporating new technologies and energy efficiency practices.

The program has a structure for obtaining feedback necessary for continuous improvement. Surveys and focus groups with participating teachers and adjustments to the measure mix included in the take-home kits are part of ongoing program planning.

RAP revised the LivingWise materials during 2010. The revised materials should be assessed to gauge the difficulty of the *Workbook* and the extent to which the materials acquaint students with careers in energy or natural resources. To help maximize the extent to which teachers use the materials, the program could offer the materials to teachers when the teacher prefers receiving them during the school year.

4.7.10 Conclusions and Recommendations

Conclusions

- **Teachers are highly satisfied with the LivingWise program materials and appreciate having access to the *Activity Kits* and other supplemental materials,** which stimulate student interest and might otherwise be difficult to obtain.
- **Strengthening LivingWise alignment with California standards would not necessarily increase its efficacy, particularly if doing so would increase the amount of time necessary for teachers to implement the program.** Instead, teachers appreciate that LivingWise content is concise, provides strong supplemental material for science and math standards, provides real-world examples, enhances teachers' capacity to address natural resource conservation issues, and connects students to career opportunities.
- **Although less than one-half of teachers agreed that LivingWise gets students thinking about possible careers in energy or natural resources, and about half of teachers rated the *Workbook* calculations as "difficult," the revised program materials distributed in the fall of 2011 are intended by RAP to better address both of these areas.**
- **A tension may exist between RAP's contractual obligations to meet the annual targets and its ability to provide teachers with program materials when teachers could best make use of them.** Teachers can best integrate LivingWise program

materials when the materials are provided at what they believe to be the appropriate time in the school year. Teachers' lack of access to the program materials at teachers' chosen point in the school year appears to limit their use of the materials, thus reducing the program's overall effectiveness.

Recommendations

- **Assess the revised LivingWise materials by obtaining teacher response to the difficulty of the *Workbook* and the extent to which students start thinking about possible careers in energy or natural resources.** Because LivingWise targets students in the pre-teen years – an age where few students have career interests – this program objective might be better framed as "acquaints students with careers in energy or natural resources."
- **As part of RAP's ongoing feedback and teacher surveys, as part of their next survey of participating teachers, program staff should ask directly about the on-site introductory presentation given at participating schools.** Questions about the need for this emerged too late in this evaluation to be included in the teacher survey, but could be included on subsequent surveys with participating teachers.
- **Ideally, the program could offer the materials to teachers at teachers' chosen point in the school year.** SoCalGas might consider strategies to provide additional flexibility for RAP, concerning its timeline for achieving targets for installed measures. In addition, SoCalGas should encourage the program implementer to offer more flexibility to teachers regarding when teachers receive program materials and return program data. SoCalGas might explore with the CPUC whether an opportunity for regulatory flexibility exists for programs focused on schools, given the ramp-up time every school year and an established curricular schedule.

Table 76: Summary of Issues and Recommendations

Issue	Consequences	Steps SoCalGas Is Taking to Address Issue (if any)	Additional Steps We Recommend	Difficulty in Addressing (H/M/L)	Value in Addressing (H/M/L)
Fewer than half of teachers agreed that LivingWise gets students thinking about possible careers in energy or natural resources	Shortfall in extent to which program acquaints students with careers in energy or natural resources	Revised program materials distributed in the fall of 2011 included additional workforce, education, and training content	(1) Post-2011, assess if increase in teachers' agreement about LivingWise and students' career thoughts (2) Work with CPUC to adjust program metric to "acquaints students with careers in energy or natural resources"	(1) L (2) H	(1) M (2) H
About half of teachers rated the *Workbook* calculations as "difficult"	Decreased usability among students across a wide range of aptitudes	Revised program materials distributed in the fall of 2011 included an improved layout and reduced number of required calculations in *Workbooks*	Assess whether the revisions address teachers' concerns about the level of difficulty of *Workbook* calculations	L	M
Teachers' lack of access to program materials at their chosen point in the school year appears to limit teachers' use of the materials	Reduction in the program's reach and overall effectiveness		Facilitate offering program materials to teachers at teachers' chosen point in the school year. May have consequence for program reporting cycle.	M - H	H

4.8 Home Energy Rater System (HERS) Rater Training Advancement

4.8.1 Background

The Home Energy Rating System (HERS) Rater Training Advancement Program began in 2011 to "promote, develop, and deliver training to currently certified Home Energy Rating System (HERS) raters and energy analysts involved in new housing in SoCalGas service territory" (from Program Implementation Plan). The program is in the early stages of program implementation, with one full year of program activities completed to date.

SoCalGas identified the need for HERS Rater Training Advancement in response to existing performance rating inconsistencies among HERS Raters in the region and statewide. Additionally, as the market for new energy efficiency technologies, systems, and practices continues to grow, as well as the reality of evolving codes and standards, ongoing training among HERS Raters provides a platform to ensure consistent rating methodologies now and in the future.

This program is delivered by a group of three third-party HERS Providers. The first third-party Provider, Conservation Services Group (CSG), is the administrator. The two other agencies – CHEERS and CalCERTS – are rating organizations and course providers for the HERS Rater Training Advancement Program[15]. The program is the same among the Providers, and consists of three distinct elements:

- Online "Knowledge Verifier" and Rater Basics Primer
- Classroom Courses
- Online Classroom

The Online "Knowledge Verifier" and Rater Basics Primer component of the program serves two purposes. First, in order to attend the training, a Rater must be able to pass the "Knowledge Verifier" quiz. This ensures that all attendees have a good understanding of Home Energy Rating and do not require basic training. Second, it provides a knowledge baseline for each Rater. After successful completion of a training course, trainees are able to retake the quiz in order to assess what they learned as a result of the course.

The Classroom Courses are the central component of the HERS Rater Training Advancement Program. They provide attendees with in-person training on advanced Home Rater subjects. Based on program attendance data as of October 2011, there is an average of nine attendees per Classroom Course. There are both full-day and half-day courses.

The full-day courses offered through October 2011 included the following:

[15] CalCERTS is a California Energy Commission-approved HERS Provider, but CHEERS is currently listed as "inactive" as of October 4, 2010. This did not affect their ability to provide HERS Rater Training Advancement during 2011.

- Refrigerant Charge Measurement (RCM)
- California Green Building Standards Code (CALGreen)
- Advanced Energy Pro
- New Home Solar
- EPA Section 608 Certification
- Advanced Combustion Safety
- Building Pressure Diagnostics
- Commercial CalGREEN
- Manual D: Residential Duct Design
- Infrared Thermal Imaging

The half-day courses offered through October 2011 included:

- Refrigerant Charge Measurement (RCM)
- Advanced Quality Insulation Installation (QII)
- HERS II Overview
- HERS II Multi-Family
- HVAC System and Air Flow
- Manual J: Residential Load Calculation and Equipment Selection
- Manual S: Residential Equipment Selection

The Online Classroom component of the program consists of videos of Classroom Courses, relevant presentation materials, and links to primer materials.

4.8.2 Research Overview

HERS Rater Training Advancement program-specific research issues identified in the final research plan include:

- How effective is the HERS training? Do attendees feel the training is worthwhile? Do they use the information from the training in practice?
- How do contractors respond to the quality of the trainers' efforts, now that they have completed the training?
- Is demand for training greater than the program anticipated?
- Is there a need for more training than program is going to be able to provide?
- How is the new online training working? Have the early implementation issues been worked out?
- Do trainees prefer online to in-person training? Is there any difference in perceived value between the online and in-person training content?

4.8.3 Data Collection Activities

As shown in Table 77, below, the evaluation team completed three data collection activities for the HERS Rater Training Advancement Program evaluation. The data collection activities

included both qualitative and quantitative data collection, including: program staff interviews, interviews with course attendees, and attendance of a classroom course.

The evaluation team designed the data collection activities in response to the researchable issues, mentioned above. Table 77 shows which data collection activities aimed to answer each researchable issue. As shown, the program staff interviews were designed to inform researchable issues 3, 4, and 5 (from above). The training attendee interviews were to inform researchable issues 1, 2, and 6. The classroom course visit provided invaluable "real-life" program context, but did not attempt to address any of the identified researchable issues.

Table 77: HERS Rater Training Advancement Program Data Collection Activities

Tasks	Achieved Sample	Research Issue(s)	Objective
Program staff in-depth interviews	2	3, 4, 5	To gain familiarity with the HERS Rater Training Advancement Program and to learn first-hand how this program is being implemented
Training attendee (participant) in-depth interviews	20	1, 2, 6	To gauge participants' experiences and perceptions of the training courses, and to collect information on the participating HERS Raters and their companies
Classroom Course visit	1	N/A	To gain familiarity with the HERS Rater Training Advancement Program and to learn first-hand how this program is being implemented

4.8.4 Research Findings: Program Staff

This section discusses findings from the evaluation team's interviews with key program staff regarding the HERS Rater Training Advancement Program, including the program marketing and management strategies.

Program Marketing

The HERS Rater Training Advancement Program employs a targeted marketing strategy. The HERS rating organizations – CSG, CHEERS and CalCERTS – maintain lists of certified HERS Raters. All marketing efforts are directed at these certified HERS Raters. The marketing efforts were described as "surgical", as there is no mass media outreach. This approach works well for the program, as the target participant group is relatively small and very well-defined.

Program Barriers to Success

The program faces several challenges for successful implementation. Identified by program staff, these barriers include:

- Finding suitable training facilities
- Serving a geographically dispersed clientele

- Lack of qualified trainers
- Short amount of time between course announcement and course date

Despite program staff identifying these potential barriers to program success, training attendees overwhelmingly disagreed with them. As shown in the section below, most attendees felt that the courses were not too difficult to attend due to location, and most respondents believed the information presented by the trainers was delivered well.

The one barrier that appears to have affected the program's success is the amount of time between course announcement and course date. Courses do not fill up because potential attendees do not have enough time to plan for attendance. According to program staff, they are required to meet an attendee-per-course annual average, and therefore are forced to cancel courses with low attendance.

4.8.5 Research Findings: HERS Rater Training Attendees

In December of 2011, the evaluation team contacted 20 people who attended HERS Rater Training Advancement courses. The team collected data in order to profile the types of companies that were represented at the trainings, and to gather information on their opinions regarding the value of the classes. The majority of respondents found the classes valuable, useful, and worthwhile, although respondents repeatedly made requests for additional hands-on teaching and supplemental materials. All but one of Southern California's counties is represented in the course attendee sample; the highest concentration of attendees performs work in Los Angeles. These companies generally were small; 60 percent consisted of only one employee (with an average of three per firm) and all of them had no more than one office (25 percent of which were in-home offices). Among the respondents surveyed, an average of 79 percent of company revenues came from single-family inspections and ratings, while just four percent came from multi-family inspections.

Respondents whose businesses consisted heavily of HERS work said they used the information learned in the classes "daily" to "weekly." The few who use the information on a monthly basis or less have primary work outside of providing HERS ratings. This other work includes weatherization, LEED and green building activities, HVAC, energy consulting, and solar photovoltaic installation.

Over three quarters of the respondents noted that the class location and time were "somewhat" or "completely" convenient. Most of the time, participants were able to attend all of their chosen trainings, but on occasion they were either busy, could not make the trip, or the class was canceled due to low participation.

When they were able to attend, a high majority (83 percent) of the respondents felt that the course material was either "effective" or "very effective." The two respondents who mentioned that it was "not very effective" said they prefer different styles of learning; one prefers learning from books, and the other would like more hands-on interaction. Other respondents mentioned their desire for more hands-on training, but this did not affect their

rating of course effectiveness. Hands-on training is a valued component of the HERS Rater Training Advancement Program.

Overall, the HERS Rater Training Advancement courses were highly rated. Ninety-five percent of those who remembered attending the particular HERS Rater Training Advancement course said that the course was both worthwhile and that information was presented effectively. All attendees understood the concepts presented, and felt that their questions were answered. A large majority of the attendees reported that they left the class with a sufficient understanding of the subject matter.

The hands-on teaching and ability to interact with others were highly valued by the two participants who took the online course as well as the in-person class. Both respondents monetarily valued the online course at 25 to 50 percent of the in-person classroom trainings. When asked to explain their assessment, the respondents reported a preference for instructor feedback and learning within the classroom setting. This aligns with the findings mentioned above: that participants value hands-on interaction when attending these trainings.

Attendance Statistics

The evaluation team analyzed HERS Rater Training Advancement attendance data provided by the program. The data included records for 218 attendees, including the total number of courses they attended, as well as the specific courses and dates of attendance. Table 78 provides a summary of the records. As shown, the course with the highest average attendance in 2011 was the half-day Refrigerant Charge Measurement (RCM) course, which had an average of 20.3 attendees over three courses (half-day RCM also had the highest total attendees, with 61). Other courses with above-average attendance included: full-day California Green Building Standards Code (CALGreen) and Manual D, as well as half-day Quality Insulation Installation (QII), HVAC System and Airflow, Manual J, and Manual S.

The average number of trainees at HERS Rater Training Advancement courses in 2011 was 9.7, with a slightly higher mean attendance of half-day courses than full day courses (10.3 and 9.0 attendees per course, respectively). It is unclear if this difference is due to the different content offered in the half-day and full-day courses, if half-day courses better fit HERS Rater schedules, or if other factors affect attendance of particular courses (e.g., it is possible a higher proportion of half-day courses were offered in more convenient locations). In addition, participants attended a mean of 2.1 courses each.

Table 78: HERS Rater Training Advancement Program Courses, 2011

Course Length	Course Title	Classroom/ Training Sessions	Mean Number of Attendees
Full-Day	Refrigerant Charge Measurement (RCM)	3	9.3
	California Green Building Standards Code (CALGreen)	3	15.3
	Advanced Energy Pro	5	7.8
	New Home Solar	3	5.7
	EPA Section 608 Certification	2	8.5
	Advanced Combustion Safety	2	8
	Building Pressure Diagnostics	1	9
	Commercial CalGREEN	1	7
	Manual D: Residential Duct Design	3	10.33
	Infrared Thermal Imaging	1	8
Half-Day	Refrigerant Charge Measurement (RCM)	3	20.3
	Advanced Quality Insulation Installation (QII)	3	10
	HERS II Overview	5	5.8
	HERS II Multi-Family	5	6.4
	HVAC System and Air Flow	2	11.5
	Manual J: Residential Load Calculation and Equipment Selection	3	11.7
	Manual S: Residential Equipment Selection	3	12.33
Overall		**48**	**9.7**

4.8.6 Research Findings: Program Status Relative to Goals

The HERS Rater Training Advancement Program does not have any savings goals, as it is a non-resource program. Additionally, there are no Program Performance Metrics (PPMs) identified in the PIP or by the Program Manager.

However, the program does have goals for the number of courses developed and number of classroom / field training sessions. The goals and the program's status relative to their goals are presented in Table 79. During 2011, the program delivered more course curricula than it had proposed (17 out of 16), but had not delivered the number of classroom / field training sessions it had planned. This likely is due to low interest in certain courses at certain locations and a relatively brief amount of time between course announcement and course date.

Table 79: HERS Rater Training Advancement Program Goals and Status

Metric	2011 Goal	Status relative to Goal (through end of 2011)
Courses developed	16	17 (106%)
Classroom / field training sessions	72	48 (67%)

4.8.7 Comparison to Best Practices

This program employs many of the best practices for education and training programs identified on the www.eebestpractices.com website. While this program falls within the residential portfolio, the target audience is nonresidential in nature. The program participants are receiving training for their business, which consists of (at least in part) activities related to the Home Energy Rater System.

The scope of this evaluation did not permit a complete assessment of best practices, as the evaluation team did not assess the specifics of the curriculum. However, where the team was able to evaluate the program, the HERS Rater Training Advancement program largely was in line with best practices. The program theory describes the objectives expected outcomes of the program, details the target market, and through its design provides training in specific areas identified as knowledge gaps or in which inconsistencies within the HERS Rater community exist.

As mentioned above, the program is delivered by third-party HERS Rater agencies. Conservation Services Group (CSG) is the administrator. CHEERS and CalCERTS are rating organizations and course providers for the HERS Rater Training Advancement Program. Courses are held at a variety of locations, including utility and other energy showrooms. These strategies – using a cooperative approach with other stakeholders and partner organizations – are in line with best practices. The program also maintains an accurate and comprehensive program participant tracking system.

The marketing and outreach component of the HERS Rater Training Advancement Program is in line with best practices, by marketing existing HERS Raters and promoting the purpose of the training explicitly. The program implementers maintain accurate contact lists and require a small payment for participation (both best practices).

While participation is relatively simple, there is one main challenge: course access. Courses are offered only a few times per year (the most a single course was offered in 2011 was five times), and in a specified location that is not always convenient to attendees. This is not in line with best practices. However, aligning with best practices would be costly and even less efficient, as there is a relatively small and geographically dispersed population of HERS Raters in the region. The evaluation team does not recommend increasing the number of course offerings or making changes to the geographic distribution of the courses to align with this best practice, as it does not seem to make sense for this specific program.

A detailed summary of the program's success with respect to best practices is presented in Table 80.

Table 80: Summary of HERS Rater Training Advancement Program Best Practices

Category	Best Practice	Rating
Program Theory and Design	Develop a program plan with a program theory that describes the learning objectives and expected outcomes.	Yes
	Understand the specific requirements of the targeted market .	Yes
	Determine the levels of training needed in the marketplace and provide training that fills the gaps.	Yes
Program Management: Project Management	Build a management or advisory board that includes members of the targeted industry and other stakeholders, then work to build consensus throughout the team.	Maybe*
	Use a cooperative approach with trade organizations, utilities, or other partner organizations	Yes
	Develop local capacity to implement programs; do not rely solely on outside experts.	Maybe
Program Management: Reporting and Tracking	Identify the key data required to track and accurately report program activities and success indicators early in the program process if possible; be prepared to adjust databases as refinements become clear.	Maybe
	Carefully document the tracking system.	Yes
	Communicate to sponsors or training hosts the importance of accurately recording attendee information and providing it to the organization in a timely manner.	Maybe*
Program Implementation : Marketing and Outreach	Market the program to the specific profession targeted.	Yes
	Emphasize the value of the training to the target audience. If possible, personalize the marketing message.	Yes
Program Implementation : Participation Process	Keep participation simple.	Maybe
	Match location and scheduling to the work schedule of the target audience.	No
	Maintain accurate contact lists.	Yes
	Consider charging for courses.	Yes

* Denotes best practices that were not considered as part of this evaluation. They have therefore been listed as "maybe" as the evaluation team has no evidence of program success related to the specific practice.

4.8.8 Conclusions and Recommendations

The HERS Rater Training Advancement Program delivered by Conservation Services Group (CSG) has been largely successful during its first year of implementation and follows most best practices for the program type. While not on pace to meet classroom / field training session goals, the program has established a good rapport with training attendees and has developed enough course curriculum to meet targets.

Conclusions

- **The HERS Rater Training Advancement employs a practical and effective marketing strategy.** The HERS rating organizations in California – CSG, CHEERS and CalCERTS – maintain lists of certified HERS Raters. All marketing efforts are directed at these certified HERS Raters, and marketing materials are designed to emphasize the value of the training to the target audience.
- **Hands-on and in-person training are valued components of the HERS Rater Training Advancement Program.** Training attendees consistently mentioned this aspect of the training as positive.
- **The HERS Rater Training Advancement Program has been particularly successful in creating course curriculum, exceeding the stated goals for 2011.** However, the program has not been successful with respect to the goals for number of classroom / field training sessions.

Recommendations

- **The HERS Rater Training Advancement Program should aim to increase, wherever possible, the amount of hands-on or field training provided to attendees.** Identified as one of the most valuable components of the program, this practice both engages attendees and provides the most accurate "real life" situation for training.
- **In order to improve upon the program's success with respect to goals for number of classroom / field training sessions, schedule courses as far in advance as possible.** This will give potential attendees more time to plan for the course, and will likely result in a decrease in the number of cancelled training sessions.

The following table shows detailed recommendations. (Note that this program was not evaluated in 2006-08.)

Table 81: Summary of Issues and Recommendations

Issue	Consequences	Steps SoCalGas Is Taking to Address Issue (if any)	Additional Steps We Recommend	Difficulty in Addressing (H/M/L)	Value in Addressing (H/M/L)
Importance of hands-on training	Online and instruction-based learning is valued less than hands-on training	N/A	Increase the amount of hands-on training for training attendees	M	H
Cancelling courses due to low interest	Not meeting target for number of classroom / field training sessions	N/A	Schedule courses as far in advance as possible	M	H

4.9 Upstream High Efficiency Water Heater Program

4.9.1 Background

According to the Program Implementation Plan (PIP), the Upstream High Efficiency Water Heater Program complements the SoCalGas Single-Family Residential Energy Efficiency Rebate Resource Program by targeting plumbers, contractors, and installers to stimulate the purchase of high-efficiency water heaters using a point-of-sale (POS) rebate system. The goal of the program is to stimulate wholesaler/distributor demand for high-efficiency heaters through increased accessibility to rebates for eligible units and education about their benefits. This is described as a "market transformation effort" by the Policy and Procedures Program Manual. The program aims to achieve this goal through a "substantial campaign to develop cooperative trade ally relationships" with plumbing suppliers and wholesalers.

The program, which has existed continuously with varying measures and incentive levels for over a decade, is implemented by Matrix Energy Services, Inc. (Matrix) and is funded for the 2010-2012 program cycle. Matrix is responsible for collecting participant sales reports, and qualifying and verifying eligible heater sales. Matrix mails a check for the appropriate rebate amount to each participant, and then invoices SoCalGas (via the SMART database system) every month for rebates paid as well as administrative costs. Matrix also is responsible for creating marketing materials, and recruiting and educating participants about the benefits of high-efficiency units.

Prior to 2001, the program required plumbers or homeowners (e.g., the water heater purchasers) to mail in a rebate application for between $30 and $50. Participation was low. SoCalGas concluded that this was because the efficient units were too large and expensive, the paperwork was onerous, and water heaters are durable goods that are not replaced often. According to the program scope of work, the program was modified to provide POS rebates of

$10 to $30 to wholesalers (depending on the year). This resulted in the sale of 125,000 high-efficiency water heaters in California between 2001 and 2004.

The existing program awards a total rebate of $15 for every eligible water heater sold: $5 to participating wholesalers to cover their administration costs, and $10 to their customers (a vast majority of whom are plumbing contactors or installers) at the point of sale. By design, the end-user is not aware of the rebate. Only gas water heaters with a capacity of 40 or 50 gallons with an Energy Factor (EF) of 0.62 or greater are eligible to participate in the program. Further, the program intends to target the gas water heater replacement market and does not grant rebates to water heaters purchased for new construction. Heater demand derived from new construction is exempt because California Title 24 already gives new construction builders incentives to install high-efficiency units. The program also does not target "big box" retailers for participation because program managers have noted these stores work directly with water heater manufacturers and occasionally apply "instant rebates" for certain model types.

According to the SoCalGas program advisor, in response to participant complaints of slow receipt of rebate reimbursements and poor communication with Matrix, in addition to a lack of timeliness with regards to invoicing and reporting to SoCalGas, the Matrix program manager was replaced in late summer of 2011. Just after the staff replacement, SoCalGas and Matrix staff reassessed the program through a key performance review. Both sides agreed that Matrix had been underperforming, although program participation had remained consistent. In response, the budget was cut and program goals were reduced to make the program less ambitious and more in tune with how it had performed historically. A boiler control installation and verification measure also was removed. The original program scope of work included a $150 incentive to contractors towards the installation of boiler controls in multi-family residential complexes. This measure included focused marketing, monitoring, an educational website and toll-free phone number to provide energy efficiency information for multi-family facilities. It also included an installation verification by Matrix two to four weeks after installation, including monitoring two weeks pre- and post-boiler install. The program budget was reduced to $2,420,000 to reflect the removal of the boiler measure.

Under the new Program Manager, SoCalGas staff the reported invoicing was much more up-to-date and consistently arrived on time. Participants reported that they received their rebate checks more quickly and program staff were more responsive to questions and concerns.

Within this program context, the current evaluation focuses on the following research issues:

- Do the current incentive levels motivate suppliers to stock and advertise the qualifying equipment?
- Do the current incentive levels motivate plumbers/contractors to purchase the qualifying equipment?
- Are the program-tracking data effective in supporting the program objectives?
- Are participants receiving their invoiced rebates in a timely manner?
- What factors inhibit increased program participation?

4.9.2 Data Collection Activities

The evaluation team conducted in-depth interviews with program staff and participants. Program staff included the program advisor at SoCalGas and program manager at Matrix. For purposes of this evaluation, program participants are defined as wholesalers or distributors who actively submitted eligible water heater sales invoices to Matrix for rebate. Fifty-five percent (5 out of 9) of these program participants were successfully contacted and interviewed. Plumbing contractors and installers, although they receive a portion of the rebate, were not contacted for this evaluation because they are passive participants (e.g., their rebate is applied immediately at the point of sale) and participating wholesalers do not collect their contact information. The evaluation team did not consider contractors and installers program participants because they do not actively interact with SoCalGas or Matrix with respect to this program.

The evaluation team also had access to two months' of data showing eligible water heater sales, energy savings, and contact information for each of the nine program participants. Over this period, the participants reported 5,647 eligible water heater sales for a savings of 83,934 therms in the SoCalGas service territory.

4.9.3 Research Findings

The PIP labels program participants as "wholesaler/distributors" or "dealers." According to Matrix staff, these labels are synonymous: both are defined as a business that sells water heaters directly to plumbers or installers, not the end-user. All of the participants contacted referred to themselves as plumbing suppliers—some with several branches scattered across the SoCalGas service area. Four of the interviewees reported largely serving residential building remodelers with a smaller focus on new residential construction contractors; the remaining wholesaler reported serving commercial and residential customers equally. All indicated that sales to individual homeowners represented less than 20 percent of their business. According to one program participant, "We are not a big box retail store with a showroom so you've really got to know what you're looking for when you visit us."

The program had nine active participants. Matrix staff indicated that the biggest hurdle to increasing participation is finding wholesalers in the SoCalGas territory; a Google search of "plumbing supply houses" is not adequate because no one is listed by their utility service area. Further, every potential participant must present a SoCalGas account number on program registration materials. This number must be reported to the utility. In some instances, this requirement caused a problem, since some distributors do not have gas service in their building(s) of operation and therefore do not have an account number. Matrix had identified only one solution: asking potential participants to use their residential account number. Understandably, some potential participants did not wish to use that number and have it linked to the program. Matrix staff hoped that SoCalGas could assign some sort of "dummy" account number for wholesalers without on-site gas accounts.

The fact that Matrix is located in Sacramento and does not have a presence in the SoCalGas territory also made it difficult to market the program. In late summer 2011, Matrix staff made

face-to-face visits with potential participants. The staff distributed marketing materials consisting of flyers, bumper stickers, and program manuals to plumbing wholesalers and distributors in the SoCalGas territory, and addressed any questions/concerns that arose. Some of the materials are meant to educate potential participants on the economic and environmental benefits of the program; other materials are meant to advertise the rebate to plumbers and installers at participating wholesaler locations. These materials were devised by a third-party graphic designer hired by Matrix and ultimately approved by SoCalGas staff. Matrix staff reported that the most recent marketing efforts in late summer had caused two wholesalers to sign up and begin invoicing eligible units; a couple of others signed up but had yet to follow through and submit eligible sales invoices to Matrix.

Program participants reported that they would sell eligible water heater units regardless of the program incentives. The 40- and 50-gallon size limit was not an issue because the wholesalers rarely found anyone looking for a smaller unit. Usually, tanks smaller than 40 gallons are meant for mobile homes. Two of the respondents noted that the South Coast Air Quality Management District (AQMD) determines the types of units they are legally able to sell, which determines customer demand and inventory. To remain compliant, these wholesalers reported stocking energy-efficient units based on AQMD regulations, which require an efficiency rating at least as high as that required for program eligibility. One participant actively promoted high-efficiency products because his business feels that these types of units provide customers the best value (e.g., higher product costs are offset by the rebates and energy savings).

Matrix staff reported that, although AQMD regulations have promoted the high-efficiency water heater market, they also have negatively impacted program outcomes. Some counties in the SoCalGas service area are pushing requirements to move from low nitric oxide-emitting natural gas water heaters to super-low nitric oxide units (rules that are set by AQMD). There is the continual push for lower emitting water heaters for health and environmental reasons. Super-low nitric oxide units are eligible for the program, but they are more expensive than standard high-efficiency units. According to the interviews conducted for this evaluation, these rules are causing people to go into counties outside of the SoCalGas service area to buy and illegally install cheaper units with regular levels of nitric oxide emissions. These illegally installed units are not eligible for the program because they are purchased outside of the program service boundary. However, the extent to which these rules negatively impact the program are unclear. While individual homeowners may be more likely to skirt the law, contractors and installers are perhaps less likely to risk fines and therefore, follow AQMD regulations.

According to program participants, technological issues also negatively impact program performance. High-efficiency water heaters not only cost more but have a larger exterior diameter than their less-efficient counterparts (because they contain more insulation). Every participant noted that the larger units can be too big to fit into some homes, forcing customers to stay with less-efficient models. In fact, three of the participants noted that cost was never an issue; with the rebate, high-efficiency models actually can be cheaper than or cost about the same as less-efficient models. “That is the biggest driving influence for our customer—

whether the unit fits in the home enclosure," noted one respondent. "We don't feel the rebate largely changes whether the customer purchases an efficient heater." Another said: "The rebates make energy-efficient models cheaper; we just need a thinner efficient heater and customer demand would immediately increase." Yet another responded that customers do not seem to notice the rebate amount because they are more concerned with size. One participant, who claimed to have been conditioned to push high-efficiency units through this and other, similar rebate programs, said that their customers notice and respond to rebates but that unit size remained the most important issue.

Although most participants reported that unit size was the most important factor for their customers, they did report that they participate in the program because the rebate is good for their business and their customers. Some participants already sold the eligible units, so signing up for the program was natural for them. One respondent reported participating in an older iteration of the program, saying: "I re-upped because customers like the discount, we're already required to sell heaters that meet certain air quality requirements, and our customers receive a more efficient heater." While others confirmed that the rebate did not make or break the sale, some of their customers have noticed it on their invoices and have appreciated the discount. Another participant noted that, due to the program, "Our customers get a good product that is cheaper to operate and they get it for a reasonable price."

Overall, participants were pleased with the program marketing materials. Each reported placing the materials—such as a sign explaining the program—in an area where customers would see it, such as behind a counter or on a desk. They said that the materials Matrix provided were clear and easy to understand, and participants were grateful to get a detailed explanation of eligible units and invoice submittal procedures up-front. On interviewee noted that customers are happy to learn they do not need to complete any paperwork: "Our customers will always ask if they need to make an invoice and we happily tell them the $10 comes off the top instantly at sale."

One piece of marketing, a sticker meant to identify a unit as high efficiency, drew mixed responses. Two participants reported receiving stickers and placing them on every unit. Another said he had seen the sticker once in four years. Regardless, he said, the sticker is not going to change a customer's mind: "Customers are much more likely to respond to the rebate, and it helps them knowing they don't have to do any paperwork."

All participants reported that the rebate reporting process was simple and user-friendly. Wholesalers are supposed to send an invoice to Matrix claiming the eligible models sold on a monthly basis. Every wholesaler the evaluation team spoke to had set up a system so their registers automatically record every eligible sale based on the product code. Invoicing only requires printing out a computer summary and mailing it to Matrix. One interviewee noted that his company carries only two eligible units, so reporting was neither difficult nor time-consuming. Another noted that his monthly sales recap is usually only five lines so he felt that the reporting was streamlined and "simpler than other programs that other companies are running."

After invoices are submitted, Matrix tracks the participant data, including number of eligible units sold, and sends it to SoCalGas monthly. Matrix determines which heaters qualify and verifies the sales. Matrix staff convert the invoices received from the wholesalers to a flat file and upload it to SoCalGas's SMART site. Matrix cuts the wholesalers a check for the full rebate amount ($15), of which $10 already was given to their customers at the point of sale and the remaining $5 is meant to cover administrative costs. Matrix invoices SoCalGas monthly to recoup rebates paid to wholesalers and its program administration costs.

According to the Program Policy and Procedures Manual, Matrix has agreed to make the rebate payment for all qualified heaters sales within10 days of receiving an invoice. While all interviewees reported receiving their rebates much later (4 to 6 weeks was the common answer), only one expressed displeasure with this timeframe. Two participants said they had noticed a marked reduction in the time it took to receive their rebates after the current Matrix Program Manager took over in late summer 2011.

Matrix reported that the process of uploading data to the SMART site was straightforward and fast. Prior to the summer of 2011, SoCalGas staff had expressed concerns about the amount of time it generally took Matrix to upload data to the SMART site. This issue, according to SoCalGas staff, was remedied once the new Matrix Program Manager took over.

Overall, participants expressed satisfaction with the program and a willingness to continue to participate in it. Only one noted that the program could be improved by providing faster rebate payments. All said they were pleased with Matrix's involvement, especially after the new Program Manager was brought onboard. Summing up his experience with the program, one participant said: "This program is easy to administer. We're really busy and we don't have extra staff capacity, so we appreciate that we don't have to spend a bunch of time filling out paperwork."

4.9.4 Comparison to Best Practices

The evaluation team has experience examining market transformation programs across the country. Although these programs may utilize different incentive levels, or administrative procedures, or may focus on other appliances (e.g., HVAC), through the development and implementation of these programs, program implementers have learned the following lessons:

- **Upstream programs require time for participants to understand and integrate the program into their operations.** Participants—some of whom have been active for several years—expressed interest in remaining active in the program indefinitely. It may take some time for wholesalers to realize that program management has improved and respond to any changes in incentive levels.
- **Enrollment and participation should be simple.** SoCalGas should consider involving non-customers. Other upstream programs have reported that online applications—including participants' ability to track application progress—facilitate enrollment.
- **Eliminate economic and technical barriers to participation should be minimized**. This could be achieved by lowering the cost of efficient units through higher program

incentives and relaxing size limitations only if there is a commensurate increase in energy savings.

4.9.5 Conclusions and Recommendations

Conclusions

The evaluation staff found that overall satisfaction with the program was high and there is little that existing participants wish would be changed. Most reported an improvement in program management and rebate efficiency under the new Matrix Program Manager. SoCalGas staff also reported positive improvements under the new manager. Although participants did note that larger rebate incentives would be more beneficial to their customers, the current rebate amount was not a barrier to participation and their customers did appreciate the $10 instant rebate—although physical water heater size was a much larger sales driver.

Evaluation staff noted, however, that data suggest participation rates are currently low. For the year ending 2011, Matrix reported that the program had nine participants that submit rebate invoices on a consistent basis. While this figure does not suggest a high level of participation, many of the wholesalers operate multiple branches, so the total volume of sales and service territory covered are large. However, the program materials do suggest that the participation rate has been and can be higher. According to the Program Policy and Procedures Manual, SoCalGas conducted a market assessment in previous program years and found approximately 112 distributors and wholesalers offering water heaters in their service area, although it is not clear whether branches belonging to the same wholesaler were included in the tally. Further, the program scope of work directs Matrix to deliver a list of 65 wholesalers or distributors recruited for the program by January 2008. Due to staff turnover since the manual was created, neither SoCalGas nor Matrix knew the location or provenance of the market assessment and recruitment list.

According to Matrix staff, wholesalers who had declined to participate reported that their main reasons for not participating were: 1) the rebate is too small; 2) the paperwork is too big a hassle; and 3) the energy-efficient heaters are still more expensive even after applying the rebate.

After speaking with existing participants and program staff, the evaluation team concludes that the rebate likely seems low when compared to the potential challenges of participating in the program. Many of the existing participants participated during earlier iterations of the program when incentives were higher, and their businesses already are predisposed to selling high-efficiency units. The existing $5 incentive is large enough to retain these types of businesses because of their familiarity with program processes and energy efficiency benefits, but not large enough to bring in new businesses not already promoting high-efficiency products. In other words, the program is “preaching to the choir.”

Further, Matrix notes that the program does target specific distributors who already have systems to handle the type of reporting the program requires (e.g., the ability to track the sales of certain model types). Distributors that already sold efficient units before participating already had the models in their computer systems and staff trained to understand their features. Matrix contacts noted that money is an effective incentive and if the rebates were larger, more distributors would participate and find a way to deal with any reporting and training issues.

Although existing participants reported that the water heater size limits imposed by the program did not impact their decision to participate, it may keep some wholesalers from choosing to enroll in the program. Matrix staff noted that if the program were expanded to include tankless units and other, smaller, types of units the program probably would be more effective because it would reach more customers and cover a bigger portion of the water heater market. A Portland General Electric program administered by Matrix includes 30-gallon water heaters. However, Matrix concedes that SoCalGas must have concluded that 30-gallon heaters do not produce enough energy savings to justify the cost of the rebate.

In summary, potential program participants must decide which attitude they choose to take toward the program. Matrix reported that some participants said they sell only high-efficiency water heaters because they can offer them at the same price as the less efficient ones after applying the rebate. Other wholesalers said the rebate is too small for the amount of administrative work required and that their customers just simply do not buy these types of water eaters.

Recommendations

Below is a list of recommendations for improving program participation:

- **SoCalGas should suggest a staff member or resource Matrix could quickly consult during its recruiting activities.** Matrix has had difficulty determining whether certain wholesalers actually fall within SoCalGas's territory. This resource would be required to determine whether a given address intersects with the service territory.
- **Matrix is uncertain how to recruit wholesalers that do not have an existing SoCalGas account number.** The SoCalGas program advisor believes the existing customer criteria reflect a requirement that program participants must be utility customers who pay into the public purpose surcharge. The evaluation team has not encountered similar upstream rebate programs with the same requirement. Unless it is not legally obligated to do so, **SoCalGas should either waive this requirement or suggest a special account number that Matrix could assign to new participants.** This would eliminate the barrier that non-gas customers face when opting to enroll in the program.
- **If participation rates remain low, SoCalGas may consider increasing the rebate amount in six months.** Existing participants will continue to be active regardless of the rebate amount, but the rebate is the most effective tool to entice new wholesalers to join the program. Although the rebate was increased to $15 from $10 for this

program cycle, non-participants reported that it was still too low relative to their administrative costs and the cost of high-efficiency units. A larger rebate amount will reduce the cost of high-efficiency units relative to less-efficient models, convince some wholesalers that it is worth using staff time to track eligible sales and submit invoices, and incentivize installers to work harder to place the larger, more-efficient heaters in small home enclosures. On the downside, a higher rebate amount will make it less economical to include other types of units, including 30-gallon units.

Table 82: Summary of Issues and Recommendations

Issue	Consequences	Steps SoCalGas is taking to address Issue (if any)	Additional Steps We Recommend	Difficulty in Addressing (H/M/Low)	Value in Addressing (H/M/L)
Difficulty for program implementer to determine which wholesalers are located within service territory	Reduces the pool of otherwise eligible participants	N/A	Designate resource Matrix could use to determine eligibility	L	M
Must have SoCalGas account number to participate	Reduces the pool of otherwise eligible participants	N/A	If regulations allow, create temporary or alternate account numbers for these businesses	M	H
Potential participants report incentive too low to cover administrative costs, costs of efficient units	Keeps program participation low	N/A	If participation remains low, increase incentive to make efficient units comparable in cost to standard units	M	H

4.10 ENERGY STAR Quality Installation Program

The statewide ENERGY STAR Quality Installation (QI) Program provides financial incentives to residential customers for the quality installation of central air conditioning and air-source heat pump systems, or for advanced diagnostic tune-ups performed on these systems. Installations must be in accordance with EPA HVAC Quality Installation Guidelines; installation requirements are illustrated in detail in the *ANSI/ACCA 5 QI-2007: HVAC Quality Installation Specification. 4*.

4.10.1 Background

The SoCalGas ENERGY STAR QI Program is still in the planning phase and program details are largely unknown. The ENERGY STAR QI Program is a non-resource program, and it is not cost-effective to run this program on its own, since gas savings are negligible. Thus, the program is too costly for SoCalGas to launch independently without the support of other utilities. The Program Manager has begun to communicate with other IOUs and would like to start some program activities by April 2012.

Upcoming Program Changes

According to the Program Manager, the ENERGY STAR QI Program likely will become a sub-program to the Energy Upgrade California "Whole House" Program or perhaps the Home Energy Efficiency Rebate (HEER) Program. Bundling the program with the "Whole House" Program could be a way to offer customers more of an incentive due to increased savings. For instance, if a customer installs insulation as well as an HVAC system, the combined savings will be greater than the sum of the savings of the individual measures. An increased incentive could motivate additional customers to participate.

Key Research Questions

Key research questions specific to the 2010-2012 process evaluation of the SoCalGas ENERGY STAR QI Program were identified during initial interviews with program staff. The key research questions that were identified include:

- Are customers receptive to participation in the new program?
- Are contractors receptive to participation in the new program?
- How will data for the new program be tracked and verified?

Because the program has not begun, the ability of the evaluation team to answer these research questions was substantially reduced.

4.10.2 Data Collection Activities

Data collection activities for the evaluation of the ENERGY STAR QI Program were very limited, as the program had not yet begun when evaluation activities were planned, and the program had not begun as of the writing of this report. Thus, the only data collection activities

conducted specifically for the evaluation of the ENERGY STAR QI Program included an in-depth interview with the Program Manager at SoCalGas.

4.10.3 Research Findings

This section describes detailed results of the process evaluation of the SoCalGas ENERGY STAR QI Program and includes a description of the Program Performance Metrics (PPMs).

Review of Program Performance Metrics (PPMs)

Table 83 shows the Program Performance Metrics (PPMs) for the SoCalGas ENERGY STAR QI Program. This program has two PPMs: 1)the percentage of HVAC contracting companies that are participating in the program as a share of targeted market, and 2) the average percentage of participating "certified" HVAC technicians within each contracting company that participates in the program. This program has not begun yet, but the PPMs are shown for reference purposes.

Table 83: PPM Summary and Status

PPM [a]	Tracked?	Status Relative to Goal	Comment
Percentage of HVAC contracting companies that are participating in the statewide residential QI program as a share of targeted market.	Not yet	The program has not yet begun.	This PPM is to be reported annually.
Average percentage of participating "certified" HVAC technicians within each contracting company that participates in the residential QI program.	Not yet	The program has not yet begun.	This PPM is to be reported at the end of the program cycle.

Staff Interview Results

An interview conducted with the Program Manager revealed one primary challenge that SoCalGas is facing with the rollout of the new program: in order to operate the program successfully, SoCalGas will need the support of other utilities. Because it is a non-resource program for SoCalGas, it is too costly for SoCalGas to implement independently. The Program Manager had explained this at several monthly IOU meetings and at the semiannual combined IOU/Energy Division meetings. The Program Manager reported that he had not yet been able to coordinate with the other utilities, and planned to work to have the issue placed on the meeting agendas in order to ensure that communication occurs and coordination can begin.

4.10.4 Comparison to Best Practices

As the program had not yet begun, and implementation details were unknown, a comparison to best practices was not performed for this evaluation.

4.10.5 Conclusions and Recommendations

There are two primary research findings stemming from this process evaluation of the SoCalGas ENERGY STAR QI Program. Note that the evaluation was unable to determine if customers will be receptive to the new program because details remain unknown. Likewise, it was not possible to document how data for the new program will be tracked and verified.

Conclusions

- **Because the SoCalGas ENERGY STAR QI Program is a non-resource program, and is therefore not cost-effective to operate independently, the utility is considering other implementation options besides a traditional stand-alone program.** The Program Manager noted that SoCalGas likely will need to coordinate with other IOUs in order to implement the program successfully. Another possibility identified was to include QI with the Energy Upgrade California "Whole House" Program or perhaps the Home Energy Efficiency Rebate (HEER) Program.
- **While it is not possible to know if contractors will be receptive to participating in a program whose implementation details are unknown, research conducted with contractors that participated in, and were targeted by, the now-retired SDG&E HVAC Tune-Up Program can provide some clues.** These interviews suggested that contractors are somewhat hesitant to participate in a program that requires extensive training and for which details remain unclear.

Recommendations

Recommendations stemming from these findings are as follows.

- **Continue to coordinate with other utilities to find a way to implement the program while keeping implementation costs low.** Place the topic on formal meeting agendas to ensure that communications take place.
- **Reference findings from the evaluation of the SDG&E ENERGY STAR Quality Installation/Quality Maintenance Program.** The SDG&E Program has experienced some challenges in certifying contractors to participate in the program. It is prudent to be aware of these challenges that another utility has faced in a somewhat similar service territory.

Table 84 shows detailed recommendations.

Table 84: Summary of Issues and Recommendations for the SoCalGas ENERGY STAR QI Program

Issue	Consequences	Steps SoCalGas Is Taking to Address Issue (if any)	Additional Steps We Recommend	Difficulty in Addressing (H/M/L)	Value in Addressing (H/M/L)
The ENERGY STAR QI Program is a non-resource program.	It is not cost-effective to operate the program independently.	SoCalGas is attempting to coordinate with other utilities and is considering making ENERGY STAR QI a sub-program of the Whole House or HEER programs.	Continue to coordinate with other utilities. Find ways to include the program with others such as Whole House that may make it more cost-effective.	L	H
It is unknown how willing contractors will be to participate in the program.	The program could face challenges in recruiting contractors to participate.	None	Reference findings from the evaluation of the SDG&E ENERGY STAR Quality Installation/Quality Maintenance Program to increase awareness of potential challenges.	L	M