PROCESS EVALUATION FOR THE 2004-2005 STATEWIDE HOME ENERGY EFFICIENCY SURVEY PROGRAM (HEES)

Study ID: SCE0218.01
CA ID: 1116-04

FINAL REPORT

Prepared for:
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(Contract Administrator: Southern California Edison)

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Submitted to the CPUC January 12, 2007

Funded with California Public Good Charge Energy Efficiency Funds

EXECUTIVE SUMMARY

The 2004-2005 Statewide Home Energy Efficiency Survey Program (HEES) evaluation effort included a process evaluation and a pilot impact study.[1] This report presents the results of the process evaluation.[2]

As part of this effort, we conducted: an extensive review of the current tracking systems and available program materials, in-depth interviews with program staff, a program theory meeting with program stakeholders, 3,884 interviews with program participants, and 1,110 interviews with non-participants. (The research tasks, as established in coordination with the CPUC during the planning stage, are described in depth in the Methodology for the HEES Evaluation section of this report.)

Overall, this statewide report seeks to explore the following:

- The overall program structure and delivery
- Participation rates
- Satisfaction with program processes
- Perceptions of the current HEES survey format and length
- Usefulness of each component of the energy report
- Customer adoption of program recommendations
- The ability of HEES to channel customers into other energy efficiency programs.

Based on our findings, the sponsors should consider the following recommendations:

HEES Program and Processes

- Examine the goals of this program by delivery mechanism. Each of the three delivery mechanisms meet different needs and target different customers. Although energy impact is not a goal of information-only programs, our pilot impact analysis (presented informally to the CPUC) showed that the different delivery mechanisms also appeared to result in different impacts (an impact assessment was not conducted on the online program due to budget constraints and data limitations). The current goal of this multi-faceted program is to reach a wide range of customers (not specifically result in a stated impact goal). In PY2004/2005, the offering of three delivery mechanisms (i.e., mail, in-home and online) was able to extend the reach of this program. For the future, therefore, the CPUC and utilities should determine how each delivery mechanism can be best be used, and should set goals by delivery mechanism.
- While exploring the goals behind each delivery mechanism, consider the pros and cons of the in-home (which appears to be the most expensive but result in the highest satisfaction) versus the online delivery mechanism (which is the least expensive with the

[1] Baseline assessments were conducted through prior research. Although this is an information only program, the sponsors asked our team to conduct a pilot impact analysis to determine the impacts of this program.

[2] The results of the pilot impact study was not a formal study, so they are not presented in a formal report. We mention the impact study here since some of the data used for the process analysis were collected through the survey effort for the pilot impact study. Those data are presented in this report.

lowest satisfaction). While satisfaction with the online delivery mechanism is lower than with other delivery mechanisms, it is relatively less expensive and is able to inexpensively serve a large number of customers. An examination of the goals by delivery mechanism and further examination of the savings from this offering will help the sponsors make an informed choice for the future.

- In support of the recommendations made above, for future program efforts, track costs by delivery mechanism to help understand the value and accomplishments of each channel.
- To improve overall satisfaction in the future, make it clear to participants (particularly online participants) that the specificity of the recommendations depends on the level of input. They should also consider (based on budget limitations) making customers aware of the various delivery mechanisms since they appear to offer different levels of service to participants.[3] Finally, wherever possible, the CPUC and utilities should refine their survey to ask more detailed questions about customer appliances and actions taken to date, and to provide more specific recommendations. Additional recommendations for the survey and report are listed below.

HEES Surveys

- Find ways to better incorporate customer specific information, such as having in-home auditors have access to customer information prior to their audit. While all of the mail channels include customer-specific usage data in the energy report, most of the in-home and online versions of the report do not. Recommendations also vary across channels, and some of the channels do not provide customers with the estimated savings for each recommendation. Recommendations for in-home participants, for example, are specific to the home, but auditors do not look at energy usage.
- Revise the survey to collect additional information and developing even more specific recommendations. Participants state the primary improvement that could be made to the survey would be to refine the questions in the survey so that they lead to even more customized information and recommendations for customers. There is, however, a tradeoff between creating a more customized report and the length of the survey. Additional questions about what customers have already done, i.e., energy efficient actions taken prior to receipt of the energy report, will provide better results for customers.

HEES Energy Reports

- Review the list of recommendations made across all channels to ensure that the list of possible recommendations is complete within each channel. Differences in recommendations between utilities are necessary due to variations in geography; however, the channels currently exhibit some differences that do not appear to be justified. Making sure all channels work from a comprehensive list of possible recommendations can help some channels provide additional energy savings recommendations to their customers.

[3] Note that for SCE, the full online survey is similar to the mail survey, but many respondents only complete the short version of the online survey. Consideration to the similarities (and differences) between the various delivery channels should be made prior to determining how to proceed. However, even for SCE, in-home is very different than other delivery mechanisms.

- Review the wording of all recommendations to ensure that they are actionable. Some of the channels have already started on this path. For example, in 2005, SDG&E changed their "reduce the hours your pool filter operates to 8 hours per day" to "Consider replacing pump & motors that are over 10 years old with newer energy efficient models. Rebates may be available on qualified energy-efficient pool pumps and motor replacement. Contact SDG&E at 1-800-644-6133 or visit www.sdge.com to verify rebate availability and eligibility requirements before buying or installing qualifying products."
- HEES needs to be more linked to other IOU programs so that participants know exactly which programs are available to them, and which programs match the recommendations in the audit. The utilities should provide one-step contact and enrollment procedures for HEES participants.

Marketing of HEES

- Continue to market through multiple means (including bill inserts), since the variety of marketing methods reaches a wider swath of potential customers. According to customers, the primary and most effective way to reach customers across the board about the HEES program is through the utility bill insert. Although some customers say they ignore the additional papers that come with their utility bill, one-quarter of customers learned about HEES through this method. A multifaceted marketing approach reaches across all channels, whether customers choose to participate via mail, in-home, or online.
- Consider alternative messaging for the program. The primary message associated with HEES is "save money". "Save money" is a standard and effective message, but the utilities should also consider messages that indicate to the customer that the Home Energy Efficiency Survey is a tool that customers can use annually to check on their usage and to ensure that they are doing what they can to save energy, such as "Monitor energy use in your home". If utilities were to market the HEES survey annually as a usage assessment tool, they could simultaneously update participants with new ways to improve their home's energy usage. Alternatively, the utilities should consider marketing the program with messages that more directly affect the customer such as "Learn why you energy bill is higher this month" for customers that may have had an increase in their bills. (Note that no message testing was conducted as part of this evaluation effort, but we recommend that the utilities look at different messages to boost participation, which may help the utilities meet their participation goals while decreasing marketing costs.)
- Coordinate with other energy efficiency programs and following up with customers based on the information that the customer provides in the HEES program survey to increase the percentage of customers who feed into other programs. For example, a customer who states that they have a pool could be a candidate for the next targeted pool pump replacement program mailing. Leverage the use of the HEES customer database to benefit both the utility and the customer. PG&E may already have begun to use the HEES database to market other energy efficiency programs to participants in one or two HEES channels. Our data suggest that customers are eager to get this additional information—61% of participants said they wanted the utility to follow-up with additional ways to help them save energy. However, some channels, such as PG&E's online survey, do not collect any customer information and thereby eliminate the opportunity to market other programs to eligible customers. While administrators hope that HEES can coordinate marketing efforts between programs to a greater extent, it can only be done by tracking

customers. Obtaining participant contact information is essential to creating stronger associations between programs.

- Share and learn from the best practices of the channels that appear to be more successful than others at promoting HEES.

Data Tracking

- Collect complete customer information. To assist with future evaluation efforts, we suggest that all channels (particularly PG&E's online channel) collect complete customer information, as well as information about the recommendations made to these customers. Collecting contact information from PG&E's online participants (as is required for the other channels) would allow the utility to conduct a more thorough evaluation as well as to follow up with customers for other reasons, such as customer service.
- Develop a statewide master list of recommendations. Overall, the utilities should consider streamlining this program across the utilities and channels. We recommend that the utilities consider using our evaluation to develop a statewide master list of recommendations with related savings estimates by fuel type (with a fuel type flag for each measure) and EULs.
- Identify participants who receive CFLs. Since the "direct install" effort is expected to increase in the future (particularly for SCE), we recommend that the databases flag all participants who receive CFLs from the program.
- As mentioned above, for future program efforts, consider tracking costs by delivery mechanism to help understand the value and accomplishments of each channel.

Future Evaluation Efforts

- Analyzing each channel separately in future process evaluation efforts. The budget for this effort did not support enough surveys to do a thorough channel by channel analysis (although we did attempt to look at differences between delivery mechanisms). Unless the program becomes better integrated, future process evaluation efforts should provide adequate sample sizes to examine each channel separately.
- Estimate savings separately for each channel to reflect the variety of potential savings across channels.

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1. INTEGRATED REPORT OF FINDINGS AND RECOMMENDATIONS FROM THIS EVALUATION

"The Statewide Home Energy Efficiency Survey [Program] (HEES) is designed to increase consumer awareness of energy efficiency opportunities, encourage adoption of energy efficient practices, and induce a permanent change in attitudes and actions toward energy efficient products and services," according to the program description. The program offers participation through three different delivery mechanisms (mail, online, and in-home). Across the four IOUs, therefore, there are a total of 12 HEES channels.

The key findings from our research that are related to the program theory, process evaluation and market indicators evaluation are summarized below, followed by an extensive set of recommendations based on the findings of our evaluation.

1.1. Program Theory Related Findings

No existing program theory document was available for this program prior to the 2004/2005 evaluation effort, although PIP does lay out the program objectives generally as providing information to customers to help them:

- Save energy and money;
- Make their homes more comfortable; and
- Help them discover additional resources and programs available to help reduce energy use.

The only explicit goal of the program is a stated number of completed surveys, by delivery mechanism, for each utility. In PY2004/2005, HEES was considered an information-only program by the CPUC and impacts were not required to be estimated.

As part of our evaluation effort, we (retrospectively) created a Program Logic Model that described the activities, outputs and outcomes for the PY2004/2005 program. Based on our meetings and interviews with utility implementers, the program is expected to result in the following outcomes:

- Customers completing surveys (i.e., participating)
- Customers reading the report
- Customers increasing their understanding as a results of the HEES report
- Customers inquiring about, and participating in, other energy efficiency programs
- Customers increasing their satisfaction with their energy bills (as a result of the program)
- Customers adopting measures and practices as a result of the report
- And ultimately, customers reducing their energy and demand usage.

The key findings from our research that are related to these outcomes are summarized below.

Short-Term Outcomes Identified through the Program Theory and Logic Model Effort

- **Completed Surveys/Participation**

  - Based on our database review, a total of over 151,000 customers participated in HEES in 2004 and 2005 combined.

  - The Home Energy Efficiency Survey was completed over 71,000 times in 2004, and approximately 80,000 times in 2005. Over this time period, approximately two-thirds of all participants participated through the mail channel, followed by online (23%) and in-home (10%).[1]

  - Overall, the number of mail surveys was constant between years; the number of in-home surveys increased by about 20% or 1,400 surveys; but the largest increase was in the number of online surveys, specifically PG&E online surveys. Between 2004 and 2005, the number of surveys completed through PG&E's online channel more than quadrupled.

  - All of the channels that reported program targets met their 2004-2005 goals.

- **Customers who Read Report**

  - Depending on the delivery mechanism, between 53% (online) and 62% (mail) of HEES participants stated that they read the report thoroughly, and an additional 20% read some portions of the report (16% of mail and in-home and 24% of online customers). Overall, 77% of HEES participants remembered reading the energy report or other information given to them by HEES. In addition, another 10% stated that they glanced at the reports.

- **Contribution of Energy Report to Understanding**

  - One of the short-term outcomes of HEES is to contribute to the overall understanding of energy usage by participants. When we contacted participants shortly after they participated, over 73% of participants felt that the information in the energy report (the output of HEES) explained their energy usage and the actions that they could take to reduce usage. A slightly smaller percentage of participants (64%) felt that the energy report provided additional sources of energy efficiency information and programs.

  - Not all of the recommendations made by HEES are actionable since many participants had already taken at least some of the actions recommended by HEES. This could explain why some customers believe that the surveys are not specific enough. When we spoke with participants shortly after they participated, 26% of the participants say they had already completed most of the

[1] "Participant" indicates anyone who completed the survey and was provided with recommendations (whether or not they recall receiving the recommendations.

recommendations in the energy report, even before they had received it; 37% say they had taken about half the actions suggested; and another 21% had completed one or two actions. Only 9% had not taken any of the actions recommended by HEES before participating.

Intermediate Outcomes Identified through the Program Theory and Logic Model Effort

- **Customer Inquiry into and Participation in Other Energy Efficiency Programs**

  - Our analyses found no evidence that HEES significantly motivated participants to participate in other utility rebate programs. HEES influences a small percentage of participants to participate in other energy efficiency program efforts, but for many of these participants HEES is only one of a number of factors that influence their decision to participate. Participation in other California utility-sponsored energy efficiency programs among a randomly selected group of non-participants in 2004 and 2005 is similar to program participation by HEES participants. Over the full 2004 and 2005 time period, 25.7% of HEES participants and 25.6% of SCE's HEES non-participants took part in one of the additional energy efficiency programs that we examined. At the same time, there is evidence that efficiency program participation is as great before HEES as after HEES participation. The percentages for PG&E are lower and the results also show no difference in participation between HEES participants and HEES non-participants.

  - Currently, there is a non-significant trend showing that the online component appears to be the most effective at feeding participants into other programs but the mail component channels more customers due to the larger number of mail participants. Across the other energy efficiency programs, a slightly larger percentage of customers are fed into the AC cycling program than into the other programs that we examined.

- **Increased Satisfaction with Energy Bills**

  - Another objective, as identified in the Program Theory/Logic Model, is to increase customer satisfaction with their utility and to reduce customer complaints. HEES participants tend to be more satisfied with their utility and less satisfied with their bills prior to participation. HEES appears to help increase overall satisfaction with electric and/or gas bills. Overall, 16% of HEES respondents said that they were satisfied (rating an 8, 9 or 10) with their monthly electric bill *before* the survey, compared to 27% *after* participating in HEES. Approximately one-quarter (26%) of HEES participants were satisfied with their gas bill prior to the survey, compared to 30% after participating in HEES. (Note that not all utilities offer this program to gas customers.)

Long-Term Outcomes Identified through the Program Theory and Logic Model Effort

- **Adoption of Measures and Practices Based on Report**

    - When we contacted participants more than nine months after participating, at least 60% of HEES participants said that they took at least one of the recommendations made by HEES after they participated; and when we inquired specifically about the effect of HEES, 38% of participants indicated that HEES was at least partly responsible for them taking one of the recommendations about which we asked.

    - Overall, we estimate that participants act on 13% of all HEES recommendations. The recommendations that participants adopt most frequently are use compact fluorescent bulbs, seal air leaks and install weather stripping, clean or replace dirty air conditioner filters, avoid using appliances at the hottest times of the day (which, of course, is more of a peak-reducing recommendation that does not necessarily promote energy savings), and lower water temperature and heater temperature settings.

    - In addition to the recommendations about which we asked, a quarter (24%) of all respondents reported learning something from the HEES energy report that caused them to take actions or to purchase equipment that was even more efficient than what was recommended to them.[2]

Overall, our evaluation finds that in PY2004/2005, the program met its goals.

The current program concept recognizes that customers have distinct needs that may make one type of delivery channel more appealing than another. As such, the program offers a multi-faceted approach to "reach the largest number of customers possible," as stated by the PIP. However, there is a balance between reaching the largest number of people and creating large energy savings for each participant. Both the CPUC and the utilities have expressed an interest in using this program for more than just "reaching" customers (based on their interest in determining savings from this program). Our pilot effort to understand savings for this program (presented informally to the CPUC) marks the beginning of a transition. Based on this, we feel that the CPUC and utilities should jointly work to create a new program logic for future years. The CPUC and utilities should revisit the program theory behind each delivery mechanism, lay out more detailed program goals (including more than just number of completed surveys), and then ensure that each of these goals are "trackable" for the future. These goals should include (depending on delivery mechanism):

1. Reaching customers
2. Effectively providing information
3. Channeling customers to other resource acquisition programs

[2] Respondents were asked about five recommendations from their specific HEES report, and then asked "Did you learn anything from the Energy Report that caused you to take actions or purchase any equipment that was even more efficient than what was recommended to you?" Additional details on responses are included in section 9. The high percentage of respondents who responded in the affirmative (24%) may be because they took an action recommended by HEES that we did not ask about.

4. Savings impacts.

For example, program savings may be a goal for the in-home survey while the goal of the online delivery mechanism might be centered on reaching the largest number of customers possible (and possibly funneling these customers to other survey options, such as the in-home survey, for those customers who are looking for additional insights).[3] Ultimately, however, the goals need to reflect the budget available, and it should be determined within the context of other programs in the portfolio.[4]

1.2. Program Structure, Delivery, and Participation

The Home Energy Efficiency Survey Program currently provides three different delivery mechanisms, or ways by which customers can participate in HEES (mail, online and in-home). In general, the customer (or "participant") completes a survey or provides information about his or her home, and then receives an energy report with recommendations on how to save energy.

HEES continues to draw in large numbers of participants each year. The number of participants in the mail and in-home channels is approximately the same in 2005 as in 2002[5], but participation across all channels increased between PY2004 and PY2005. The increases are due, in part, to the startup of *PG&E's in-home pilot* in 2005, as well as concerted efforts overall to increase *online* participation (19% of all participants participated online in 2004 compared to 26% of all participants in 2005). In total, the HEES survey was completed over 71,000 times in 2004 and approximately 80,000 times in 2005. Over this time period, approximately two-thirds of all participants participated through the mail channel, followed by 23% online and 10% in-home. The in-home component is the most expensive delivery mechanism, and according to the utilities, it is primarily used to reach out to hard-to-reach customers.

Although the program is currently a statewide program (that is, some variation of the program is available to all IOU customers throughout the state), it originated as separate efforts by each utility. Coordination between the channels, therefore, is somewhat limited. Some components of HEES were designed by multiple vendors, resulting in six unique versions of the program. (A version is a generally consistent way of implementing the program, which results in relatively consistent inputs and outputs, although the specific recommendations vary.)

The level of funding for the program also differs between the utilities, ranging from SCE which seems to be ramping up the program and starting to provide CFLs to many survey participants, to Sempra which seems to be moving toward the less expensive and easier to implement online component of the program.[6]

[3] Note that for SCE, the full online survey is similar to the mail survey, but many respondents only complete the short version of the online survey. Consideration to the similarities (and differences) between the various delivery channels should be made prior to determining how to proceed. However, even for SCE, in-home is very different than other delivery mechanisms.

[4] It would be impossible for the PY2004/2005 evaluation team to suggest how the program should be used in the future without additional knowledge about the available resources (which up to now have been cut for this program for several of the utilities) and competing priorities.

[5] This should be viewed in the context of the annual program budgets.

[6] This finding is based on in-depth interviews with utility staff in 2005.

The number of recommendations that each HEES participant receives also varies widely by channel, from an average of four recommendations for SCE or SDG&E mail participants to over 18 recommendations for SCE or SoCalGas in-home participants.[7] In general, HEES participants receive an average of seven recommendations, some measures, some practices, and some classified as other.

Interestingly, while the recommendations overlap some overall, they can differ considerably across channels. For example, it is possible for the same customer to complete both the mail and in-home survey, or the mail and online survey, and to receive two different sets of recommendations. Due to differences in geography and the socioeconomic characteristics of customers, it makes sense for the recommendations to vary slightly by utility; but it is less intuitive why the recommendations vary by delivery mechanism.

The levels of emphasis on what is being promoted, and the types of measures that are recommended to customers vary by utility. For example, in 2005, SCE added a recommendation to encourage customers to participate in the 20/20 program. Both SCE mail and SCE online customers were provided with this information. Interestingly, although Kema-Xenergy supports all of the mail programs, this recommendation was **only** added to the list of recommendations for SCE participants. The disparate development of some of the channels and the varying levels of funding by the utilities partially explains differences in the type and emphasis of the recommendations.

Since one of the desired intermediate-term outcomes of the program is to have participants inquire and participate in other energy efficiency programs (such as the rebate or appliance recycling programs), we also looked specifically at the program's ability to coordinate with other utility programs. While the overall goal of the program is to reduce energy usage—which HEES is doing—our analysis of its ability to increase savings by feeding participants into other programs suggests that while some participants read the recommendations about HEES and state that they are influenced in part by HEES (we estimate that a maximum of 5.5% of participants are influenced to participate in a follow-up program by HEES), there does not appear to be conclusive evidence that HEES leads to significant increases in participation in other programs. Participation rates in other energy efficiency programs among participants and non-participants in 2004 and 2005 are both approximately 26%.

This statewide program is successful in that it accounts for various utility-specific directives relative to energy use and marketing, but it appears to be slow to share and learn from best practices across the various channels of this program.

1.3. Overall Satisfaction with HEES

Generally, the program appears to meet participant expectations. Forty-six percent of all participants with whom we spoke said they were very satisfied, and an additional 41% were somewhat satisfied with the program overall. Most participants felt that the survey was easy to

[7] Refer to Tables 7.5 and 7.6 for details by channel.

follow, of reasonable length, and asked the right questions, etc. In addition, 60% of customers stated that they would recommend this survey to others. These findings also indicate, however, there are opportunities for program improvement.

The primary driver of satisfaction appears to be the way that the customer participated in the program, with participants who participated through the in-home survey (69% very satisfied) being significantly more satisfied than those who participated by mail (45%) or online (37%). Those who participated online were the least satisfied (significantly less satisfied than mail). This, however, could be due to the fact that online participation requires less buy-in (and provides fewer targeted results) than mail or in-home participation. Some online participants complete only a short list of questions, and due to this, get back less customized results. The fact that in-home customers are significantly more satisfied than participants in other program channels needs to be weighed against program costs. (While in-home participation is more costly than participation online or by mail, the value could outweigh the costs in some cases.)

Although very few participants were dissatisfied (that is, stating that they were somewhat or strongly dissatisfied), dissatisfaction was primarily because the information wasn't helpful and/or the report did not meet expectations (as indicated by both responses about the overall satisfaction, and individual components of the survey and report.) Our analysis did not specifically ask if respondents expected a customized or generic report but we did ask participants whether they felt that the recommendations applied to their home. In addition, some participants mentioned that they were not satisfied because the information was not customized.

Most participants consider the format and actual delivery of the energy report to be trouble-free. However, participants are less sure about the relevance of the recommendations and the trustworthiness of the information offered. Almost all customers agreed that the energy report was delivered in a timely manner and that the energy report was easy to understand (91% and 95% of those who read the report, respectively). Participants said the energy report could be improved by making the recommendations more strongly and gearing them more toward individual homes and needs. Participants also felt that some of the dollar savings that the energy report claimed customers would experience as a result of implementing the recommendations were not entirely believable.

The primary improvement that could be made would be to refine the questions so that they lead to even more customized information and recommendations for customers. Customers want information that takes into account their personal situation. A few renters felt the energy report lacked solutions that renters could implement.

1.4. The Role of HEES in the Market (Based on Survey Findings)

To evaluate HEES's role in the market, we looked at the program's four assumptions[8]:

1. Customers lack complete energy efficiency knowledge
2. HEES fills the knowledge gap
3. Knowledge engenders action
4. HEES plays a substantial, unique informational role

While it is difficult to measure true differences in awareness, knowledge, and action before and after participation in a broadly focused program like HEES, our findings suggest that HEES participants overall could be predisposed to a higher awareness and understanding level, and have a greater willingness than non-participants to take action to reduce their energy consumption. Both participants and non-participants, however, are very likely to have taken some action to reduce their energy use (89% of all participants took action prior to HEES, compared to 68% among the general population). Interestingly, HEES participants do *not* appear to be more likely to have participated in energy efficiency programs before HEES.

Given the wide variety of energy efficiency measures addressed by HEES, it is likely that customers lack complete energy efficiency knowledge, but it is less clear whether the HEES survey is specific enough to give recommendations that fill that knowledge gap for all participants. However, the recommendations are clearly useful for a large percentage of participants, and the majority of participants state that the information provided by the energy report explained their energy usage and the actions that they could take to reduce usage (74% and 73% respectively).

Our results also show that for many, the increased knowledge from the HEES report engenders action. Engendering action is one of the most important expected outcomes, measured by the percentage of participants who change their behavior and practices based upon the energy report. (See bullets above.) A very large percentage (from 37% for online up to 45% for in-home respondents) feel that HEES plays a unique information role and that they could not find this information anywhere else.[9]

Overall therefore, our findings validate the fundamental assumptions of the program and show that the program provides value to many customers, and for many it plays a unique informational role. Our evaluation uncovered a need, however, to coordinate the program better across the channels. In the future, the program should work toward an even more customized report, and seek to improve its efforts to funnel customers into other programs. Detailed findings and recommendations are provided below.

[8] These are the four program assumptions stated in the RFP for this work. These were provided to the evaluation contractor in advance of the project. No existing program theory was provided.

[9] A similar percentage, approximately 43% (47% mail, 41% for online and 35% for in-home) either strongly or somewhat agreed with the statement that "If the HEES program did not exist, [they] could still easily find this kind of information. The remaining participants did not read the report.

1.5. Recommendations from this Evaluation

Based on our findings, the sponsors should consider the following recommendations:

HEES Program and Processes

- Examine the goals of this program overall, and by delivery mechanism. Each of the three delivery mechanisms meet different needs, targets different customers, and (although an impact assessment was not conducted on the online program due to budget constraints and data limitations) all three delivery mechanisms appear to result in different impacts based on an informal pilot impact evaluation presented separately to the CPUC. The current goal of this multi-faceted program is to reach a wide range of customers (not specifically result in a stated impact goal). In PY2004/2005, the offering of three delivery mechanisms (i.e., mail, in-home and online) was able to extend the reach of this program. For the future, therefore, the CPUC and utilities should determine how each delivery mechanism can be best be used, and should set goals by delivery mechanism.
- While exploring the goals behind each delivery mechanism, consider the use of in-home (which appears to be the most expensive but result in the highest satisfaction) versus the online delivery mechanism (which is the least expensive with the lowest satisfaction). While satisfaction with the online delivery mechanism is lower than with other delivery mechanisms, it is relatively less expensive and is able to inexpensively serve a large number of customers. An examination of the goals by delivery mechanism and further examination of the savings from this offering will help the sponsors make an informed choice for the future.
- In support of the recommendations made above, for future program efforts, track costs by delivery mechanism to help understand the value and accomplishments of each channel.
- To improve overall satisfaction in the future, make it clear to participants (particularly online participants) that the specificity of the recommendations depends on the level of input. The program should also consider (based on budget limitations) making customers aware of the various delivery mechanisms since they appear to offer different levels of service to participants.[10] Finally, wherever possible, the CPUC and utilities should refine their survey to ask more detailed questions about customer appliances and actions taken to date, and to provide more specific recommendations. Additional recommendations for the survey and report are listed below.

HEES Surveys

- Find ways to better incorporate customer specific information, such as having in-home auditors have access to customer information prior to their audit. While all of the mail channels include customer-specific usage data in the energy report, most of the in-home and online versions of the report do not. Recommendations also vary across channels, and some of the channels do not provide customers with the estimated savings for each

[10] Note that for SCE, the full online survey is similar to the mail survey, but many respondents only complete the short version of the online survey. Consideration to the similarities (and differences) between the various delivery channels should be made prior to determining how to proceed. However, even for SCE, in-home is very different than other delivery mechanisms.

recommendation. Recommendations for in-home participants, for example, are specific to the home, but auditors do not look at energy usage.

- Revise the survey to collect additional information and developing even more specific recommendations. Participants state the primary improvement that could be made to the survey would be to refine the questions in the survey so that they lead to even more customized information and recommendations for customers. There is, however, a tradeoff between creating a more customized report and the length of the survey. Additional questions about what customers have already done, i.e., energy efficient actions taken prior to receipt of the energy report, will provide better results for customers.

HEES Energy Reports

- Review the list of recommendations made across all channels to ensure that the list of possible recommendations is complete within each channel. Differences in recommendations between utilities are necessary due to variations in geography; however, the channels currently exhibit some differences that do not appear to be justified. Making sure all channels work from a comprehensive list of possible recommendations can help some channels provide additional energy savings recommendations to their customers.
- Review the wording of all recommendations to ensure that they are actionable. Some of the channels have already started on this path. For example, in 2005, SDG&E changed their "reduce the hours your pool filter operates to 8 hours per day" to "Consider replacing pump & motors that are over 10 years old with newer energy efficient models. Rebates may be available on qualified energy-efficient pool pumps and motor replacement. Contact SDG&E at 1-800-644-6133 or visit www.sdge.com to verify rebate availability and eligibility requirements before buying or installing qualifying products."
- HEES needs to be more linked to other IOU programs so that participants know exactly which programs are available to them, and which programs match the recommendations in the audit. The utilities should provide one-step contact and enrollment procedures for HEES participants.

Marketing of HEES

- Continue to market through multiple means (including bill inserts), since the variety of marketing methods reaches a wider swath of potential customers. According to customers, the primary and most effective way to reach customers across the board about the HEES program is through the utility bill insert. Although some customers say they ignore the additional papers that come with their utility bill, one-quarter of customers learned about HEES through this method. A multifaceted marketing approach reaches across all channels, whether customers choose to participate via mail, in-home, or online.
- Consider alternative messaging for the program. The primary message associated with HEES is "save money". "Save money" is a standard and effective message, but the utilities should also consider messages that indicate to the customer that the Home Energy Efficiency Survey is a tool that customers can use annually to check on their usage and to ensure that they are doing what they can to save energy, such as "Monitor energy use in your home". If utilities were to market the HEES survey annually as a usage assessment tool, they could simultaneously update participants with new ways to

improve their home's energy usage. Alternatively, the utilities should consider marketing the program with messages that more directly affect the customer such as "Learn why you energy bill is higher this month" for customers that may have had an increase in their bills. (Note that no message testing was conducted as part of this evaluation effort, but we recommend that the utilities look at different messages to boost participation, although this is not a requirement given that the utilities are meeting their participation goals.)

- Coordinate with other energy efficiency programs and following up with customers based on the information that the customer provides in the HEES program survey to increase the percentage of customers who feed into other programs. For example, a customer who states that they have a pool could be a candidate for the next targeted pool pump replacement program mailing. Leverage the use of the HEES customer database to benefit both the utility and the customer. PG&E may already have begun to use the HEES database to market other energy efficiency programs to participants in one or two HEES channels. Our data suggest that customers are eager to get this additional information—61% of participants said they wanted the utility to follow-up with additional ways to help them save energy. However, some channels, such as PG&E's online survey, do not collect any customer information and thereby eliminate the opportunity to market other programs to eligible customers. While administrators hope that HEES can coordinate marketing efforts between programs to a greater extent, it can only be done by tracking customers. Obtaining participant contact information is essential to creating stronger associations between programs.
- Share and learn from the best practices of the channels that appear to be more successful than others at promoting HEES.

Data Tracking

- Collect complete customer information. To assist with future evaluation efforts, we suggest that all channels (particularly PG&E's online channel) collect complete customer information, as well as information about the recommendations made to these customers. Collecting contact information from PG&E's online participants (as is required for the other channels) would allow the utility to conduct a more thorough evaluation as well as to follow up with customers for other reasons, such as customer service.
- Develop a statewide master list of recommendations. Overall, the utilities should consider streamlining this program across the utilities and channels. We recommend that the utilities consider using our evaluation to develop a statewide master list of recommendations with related savings estimates by fuel type (with a fuel type flag for each measure) and EULs.
- Identify participants who receive CFLs. Since the "direct install" effort is expected to increase in the future (particularly for SCE), we recommend that the databases flag all participants who receive CFLs from the program.
- As mentioned above, for future program efforts, consider tracking costs by delivery mechanism to help understand the value and accomplishments of each channel.

Future Evaluation Efforts

- Analyze each channel separately in future process evaluation efforts. The budget for this effort did not support enough surveys to do a thorough channel by channel analysis (although we did attempt to look at differences between delivery mechanisms). Unless

the program becomes better integrated, future process evaluation efforts should provide adequate sample sizes to examine each channel separately.

- Estimating savings separately for each channel to reflect the variety of potential savings across channels.

2. METHODOLOGY FOR THE HEES EVALUATION

Overall, this statewide report seeks to explore the following:

- The overall program structure and delivery
- Participation rates
- Satisfaction with program processes
- Perceptions of the current HEES survey format and length
- Usefulness of each component of the energy report
- Customer adoption of program recommendations
- The ability of HEES to channel customers into other energy efficiency programs
- The savings due to the program
- The best method for determining savings in the future.

Between April 2005 and April 2006, ODC conducted six survey efforts in support of this evaluation effort, in multiple waves of interviewing. The multiple waves and multiple survey efforts were established in coordination with the CPUC during the evaluation planning stage due to the various goals of this evaluation effort (i.e., assessing process effects immediately after participation, determining adoption at least a year after participation). Wherever possible, we combined survey efforts, but the various goals of the evaluation required surveys from several different populations (i.e., participants generally, HEES participants that also participated in another program, non-participants). In all, we interviewed 3,884 participants and 1,110 non-participants. We also interviewed program staff, extensively reviewed program databases and materials, and conducted a program theory meeting. The individual research efforts are described in detail below.

2.1. In-Depth Interviews

ODC attempted to interview all program implementers and evaluators for the four California investor-owned utilities (IOUs). We conducted these interviews between April 28 and May 10, 2005. We experienced some difficulty in contacting the correct utility implementers due to reorganizations within the Sempra Utilities (both SDG&E and SoCalGas) and other competing priorities by the utilities. In all, we conducted a total of seven in-depth interviews with various staff and evaluators from PG&E, SCE, SDG&E and SoCalGas.[11]

[11] Notably, the program staff for three of the four utilities (PG&E, SDG&E, and SoCal Gas) changed during the course of our evaluation effort, thus some implementers had limited knowledge of the program at the time of our interviews.

2.2. Review of Program Databases and Materials

ODC also attempted to collect all available HEES program databases. In all, there are ten databases for this program. These ten databases are listed in the table below.

Table 2.2-1: HEES Program Databases

Utility	Delivery Mechanism	Maintained By
PG&E	Mail/In-Home	Kema-Xenergy
PG&E	Online	Nexus
SCE	Mail	Kema-Xenergy
SCE	Online	Kema-Xenergy
SCE/SoCalGas	In-Home	SoCalGas/CSG
SoCalGas	Mail	Kema-Xenergy
SoCalGas	Online	Sempra/Enercom
SDG&E	Mail	Kema-Xenergy
SDG&E	Online	Sempra/Enercom
SDG&E	In-Home	Sempra

Several of these databases are similar, often because one vendor supplies the same service to different utilities. For example, the Kema-Xenergy mail database for SDG&E is similar to its mail database for SoCalGas. The databases vary considerably across channels, however, when different vendors maintain them.

Program materials consisted primarily of copies of the customer survey and energy report for each delivery mechanism and utility. We have included the materials that we reviewed in Appendices A through F.

2.3. Program Logic/Theory Meeting

Following in-depth discussions with program staff and stakeholders and the review of past evaluation efforts, our team conducted an in-person meeting with HEES program managers and the Project Advisory Committee (PAC) on May 13th, 2005. We used the in-person meeting to define the goals and objectives of the program and to develop a program logic model that could be used to help explain the program to HEES stakeholders.

Based on the discussion at the in-person meeting, ODC developed a draft program logic model and a proposal for metrics and circulated them to meeting participants for review and comment. The draft metrics included both metrics with baseline measures from past research (and the documentation of these baseline points) as well as new areas that the PAC may wish to explore during this two-year effort., We present the resulting revised model and metrics in the Program Theory and Logic Model section of this report.

Note that we developed the program theory for a single point in time (PY2004/2005) for evaluation purposes. As such, it will need to be updated for future years to incorporate program changes.

2.4. General Population Survey

We developed and fielded a general population telephone survey to explore the need for additional information on energy efficiency and to examine differences between program participants and the general population. The sample design was a simple random-digit dial design drawn from all households throughout California's IOU territories (as determined by zip code). We fielded this survey to 301 randomly selected households in June 2005. The primary objective of this survey effort was to understand awareness of energy efficiency and actions taken to reduce energy consumption among the general population as a point of comparison to HEES participants.[12] Note that HEES participants were not removed, but self-reported participants represented less than three percent of respondents.

2.5. Participant Process Survey

ODC developed a participant process survey to determine satisfaction with the program processes, to assess the value of and need for HEES, and to solicit suggestions for improvements. Respondents were drawn of available PY2005 databases at the time of the surveys, and were stratified by delivery mechanism as shown in Table 2.5-1. (Due to budget limitations, it was not possible to stratify by utility.) We interviewed participants in three waves so that we could speak with participants shortly after they filled out the HEES survey and received the energy report. We fielded the first wave of interviews in July 2005 and we conducted additional interviews in September 2005 and February 2006. In all, we interviewed 1,045 HEES participants, as shown in the table below.[13]

Table 2.5-1: Process Surveys (3 waves)

	In-home	Mail	Online (telephone survey)	Online (web survey)
Wave 1	102	102	40	77
Wave 2	70	70	70	149
Wave 3	70	70	70	155
TOTAL	**1045**			

Because telephone numbers were not available in most databases (with the exception of some in-home databases), ODC conducted electronic telephone look-ups for customers with address information.

[12] There was no stratification by utility or other respondent characteristics (none was required from the research plan), and thus no weighting was applied to the final data.

[13] Our research plan included 10 in-depth interviews by delivery mechanism. However, based on our early assessment of the variations across utilities within one delivery mechanism, we did not feel that follow-up interviews with such a small subset of participants would provide substantial additional findings. As such, we altered the methodology to widen the scope of the process survey (i.e., ask additional questions to gather more comprehensive information from participants) and to include additional process surveys in place of the follow-up in-depth interviews.

Due to limitations in the program databases (i.e., SCE did not provide email addresses for online participants, and PG&E only provided email addresses and no other contact information for online participants), the interviews with online participants required a mixed methodology. For databases with customer contact information, we interviewed participants by telephone. When customer contact information was not available (that is, for PG&E's online participants) we sent a link to an equivalent Internet survey to all available email addresses.[14]

We selected the sample to enable us to report (with 90% confidence ± 10% error) by delivery mechanism, as agreed to in the research plan. The evaluation budget did not allow for sampling or reporting by utility. The sample design assumed, however, that the program design was consistent across all utilities (an assumption that later proved to be false). Because we were unable to get complete databases at the time that we fielded the survey—and because we were unaware of the extent of the differences between the utilities at the time of our interviews—the distribution of respondents across the utilities is not in proportion to overall participation numbers. Overall, we present the results of our surveys as collected (without weighting) since the quotas were not set to allow for weighting of the data based on differences between the utilities.[15]

2.6. Adoption Survey

In January and February 2006, we also interviewed 1,390 HEES participants from PY2004 and early 2005 to determine if they had adopted any HEES recommendations. The sample design was selected to allow for 90% confidence ± 10% error by utility, delivery mechanism and year. Based on our initial research, however, there did not appear to be distinct differences by year so the quota groups were collapsed to eliminate "by year of participation." Wherever possible, we attempted to interview customers who had participated more than nine months ago (that is, generally participants from PY2004). Note, however, that PG&E's in-home survey did not start until January 2005, so respondents for this channel participated between January and March of 2005.

Table 2.6-1: Adoption/Persistence Survey Sample Sizes (~9-12 months out)

	In-home	Mail [b]	Online
PG&E	70[a]	150	n/a
SDG&E	n/a	200	103[c]
SCE	150	151	201
SoCalGas		200	165
TOTAL	**1,390**		

[a] PG&E's in-home effort did not start until January 2005 so we conducted approximately half as many interviews.
[b] We conducted fewer adoption surveys with PG&E and SCE mail participants because these channels were also covered in the impact survey.
[c] The number of SDG&E online completes was based on a limited available sample.

[14] Because of this, some of the tables in this report indicate when our findings were significantly different between methodologies (and therefore between utilities).
[15] Future efforts should budget for robust sample sizes to allow for weighting by delivery mechanism and channel. This recommendation in made in the recommendation section of our report.

We selected about five recommendations from the list of customer-specific recommendations made through the HEES program and asked participants which, if any, they had adopted. Because individuals have difficulty remembering exactly when an action was taken, we developed a mechanism within the telephone survey to aid accurate respondent recall. We asked survey respondents to think of important events that occurred to them. If they could not remember the data of the actions, we asked them to think of the actions in terms of the events that were important to them to help them better recall in what month and year they took the action.

2.7. Impact Participant and Non-Participant Surveys and Analysis

As part of our pilot impact analysis (presented informally to the CPUC), we interviewed 1,224 HEES participants and 809 non-participants in November and December 2005. We selected the respondents from a sample of utility customers for whom we could get billing data from September 2002 through the present. These customers participated in HEES between September 1, 2003 and August 31, 2004. Although the results of the impact analysis were presented separately, we present some non-impact results from these surveys in this process evaluation.

We interviewed 1,200 participants: approximately 400 participants from the three channels that were targeted for the impact analysis (i.e., PG&E mail, SCE mail, SCE in-home). We also completed interviews with 400 non-participants from PG&E and 400 non-participants from SCE to serve as a comparison group. The SCE non-participant group was selected to serve as a comparison group for both the mail and in-home participants (for budget reasons). The survey was used to ask about adoption of recommendations, free ridership, major equipment and occupancy changes, program participation, and key demographic information.

The ODC impact evaluation survey asked each participant about recommendations they received from HEES: the three recommendations they received from HEES that could have provided the highest energy savings for them and two additional recommendations selected at random from all the remaining recommendations they received. We first asked if they adopted the recommendation. If they adopted the recommendation, they then were asked in what month and year they did this.

Again, because individuals have difficulty remembering exactly when an action was taken, (especially since we were inquiring in the fall of 2005 for actions occurring as early as September 2002), we developed a mechanism within the telephone survey to aid accurate respondent recall. We asked survey respondents to think of important events that occurred to them since September 2002. If they could not remember the data of the actions, we asked them to think of the actions in terms of the events that were important to them to help them better recall in what month and year they took the action.

2.8. Crossing Databases Survey

As part of this effort, we also interviewed HEES participants who also participated in a resource acquisition program following their completion of the HEES survey. We developed this sample

by crossing the HEES program database with databases from the Single-Family Rebate, Appliance Recycling and Summer Discount/AC Cycling programs. (A full description of this methodology is described in section 10 of this report.) For this analysis, we looked at two utilities (SCE and PG&E) and a total of four delivery channels: (1) PG&E Mail[16], (2) SCE Mail, (3) SCE In-home, and (4) SCE Online. We did not include Sempra in this analysis due to the difficulties in retrieving data from this organization.

In May 2006, we conducted telephone interviews with 225 customers who appear to have been influenced by HEES to participate in other utility programs (based on our database review), about the extent to which they were influenced.

We only interviewed customers who participated in the programs after the date that the HEES survey was completed.[17] While we interviewed 225 customers, some of these customers participated in more than one program after HEES. The table below shows the breakdown by utility program and delivery channel.

Table 2.8-1: Crosssing Database Survey Sample Sizes

	PGE Mail	SCE Mail	SCE In-Home	SCE Online	Total
Single Family Rebate	64	19	16	13	112
Appliance Recycling	0	25	20	16	61
AC Cycling	0	29	31	18	78
Total	**64**	**73**	**67**	**47**	**251**

2.9. Analysis

Once fielded, the survey responses were statistically analyzed using an independent t-test for means (unequal variances) and an independent z-test for percentages. Significance was determined at the 90% confidence level. Unless otherwise noted, significance noted in the tables and in the text indicates statistical significance at the 90% confidence level +/- 10% error.

No weighting of the data was conducted for our analysis. Data tables present survey results for the number of completed surveys specified above.

[16] PG&E In-home and Online were not included in the analysis for PG&E due to limitations in the database (i.e., In-home did not begin until 2005, and Online does not collect adequate customer information).

[17] Customers who participated in both programs in the same month were assumed to have participated in HEES first.

3. PROGRAM LOGIC MODELS AND INDICATORS

No existing program theory document was available for this program prior to the 2004/2005 evaluation effort, although PIP does lay out the program objectives generally as *providing information* to customers to help them:

- Save energy and money;
- Make their homes more comfortable; and
- Discover additional resources and programs available to help reduce energy use.

The only explicit goal of the program is a stated number of completed surveys, by delivery mechanism, for each utility. In PY2004/2005, HEES was considered an information-only program by the CPUC and impacts were not required to be estimated.

As a first step in our statewide evaluation, we worked with program staff to (retrospectively) develop a program theory and logic models that described the activities, outputs and outcomes for the PY2004/2005 program. Program theory is a theory or model that describes the underlying assumptions about how a program is expected to work; how the program causes the intended or observed outcomes. A logic model is a diagram that describes the key logical (causal) relationships among program elements and the problem to be solved, thus defining measurements of success. The logic model helps portray the program theory and can be used to help tell "the story" behind how the program expects to meet its ultimate goals, including the "who", the "how", and through what mechanism. In doing so, gaps and questions that still need to be addressed can be identified.[18]

Program theory and logic models help to ensure that the program is well designed to meet both its short-term and long-term goals. Anticipating specific market responses to interventions that change the way a market operates can be difficult. Explicit documentation of all the steps required to make this happen can help provide insight into whether the program logic leads to the ultimate goals without any "black boxes" where the creation of the desired outcome is unknown and, therefore, less likely to occur.[19] We developed the HEES Program Theory and Logic Model (PT/LM) for PY2004/2005 (see below) to help the implementers understand the underlying theory and expected outcomes, while providing a tool to measure results.

Interestingly, although we developed three individual models (one for each delivery mechanism), the underlying theory and the associated logic models were similar (as described by the utilities). However, through other parts of our research (discussed later in this evaluation report), we discovered clear differences between the delivery mechanisms, including differences in how (and the extent to which) they serve participants.

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[18] There is a rich history in using program theories and logic models (PT/LM) for evaluation, monitoring, and program refinement in a variety of fields, such as health care, social, and education programs. In 1972, Carol Weiss began to promote using program theory to drive evaluation (Worthen, 1997, page 221).

[19] According to the Framework, evaluators should not rely only on official program theory for their evaluation planning efforts. When evaluators examine the official program theory it is not unusual for the evaluator to identify alternative paths not reflected in the official program theory by which participants can reach the same desired outcomes as those reflected in the program theory.

Note that this section of the report describes the models for PY2004/2005. Findings on the outcomes in these models (based on data gathered through our survey efforts) are laid out in detail in the following sections of the report, and summarized in Chapter 1, Summary of Findings and Recommendations section.

3.1. HEES Program Theory and Logic Models

The utility description of the program states that HEES "is designed to increase consumer awareness of energy efficiency opportunities, to encourage adoption of energy efficient practices, and to induce a permanent change in attitudes and actions toward energy efficient products and services." The overarching program theory for HEES is that educating utility customers about their energy usage and actions that they can take to reduce usage[20] will lead to reductions in energy usage and demand, lower utility bills, improvements in customer perceptions of their electric and/or gas utility, and reduced system load issues.

Customers currently use three different delivery mechanisms (mail, online, and in-home) to participate in HEES. Utilities also use these mechanisms to market the program as a service to their customers. The design for each delivery mechanism differs in terms of activities, outputs, and short-term outcomes, yet, all three mechanisms have the same desired intermediate and longer-term outcomes.

The logic models for the mail, online, and in-home surveys are presented in Figures 3.1-1, 3.1-2 and 3.1-3 respectively. The top row of the logic flow indicates the input. The next row presents program activities in hexagons. The primary structure of the logic models flows from these program activities, with the outputs from the activities noted in rounded boxes in the third row. All anticipated outcomes appear in rectangles in the fourth through seventh rows. The specific row depends on the timing of the expected outcome (i.e., short- versus long-term). Some of the program activities depend upon other outputs or customer actions (outcomes), such as data entry and report preparation and mailing for the mailed and in-home surveys. When a preceding output or outcome is required, the logic arrows flow back up to the second row and the required activity.

Logic models can generally be read from the top left to the bottom and follow columns of flow. It is important to follow the arrows and to understand what the full sequence requires, both what is needed from the program as well as what is needed from customers for the final desired results to occur.

Based on our meetings and interviews with utility implementers, the program is expected to result in the following outcomes:

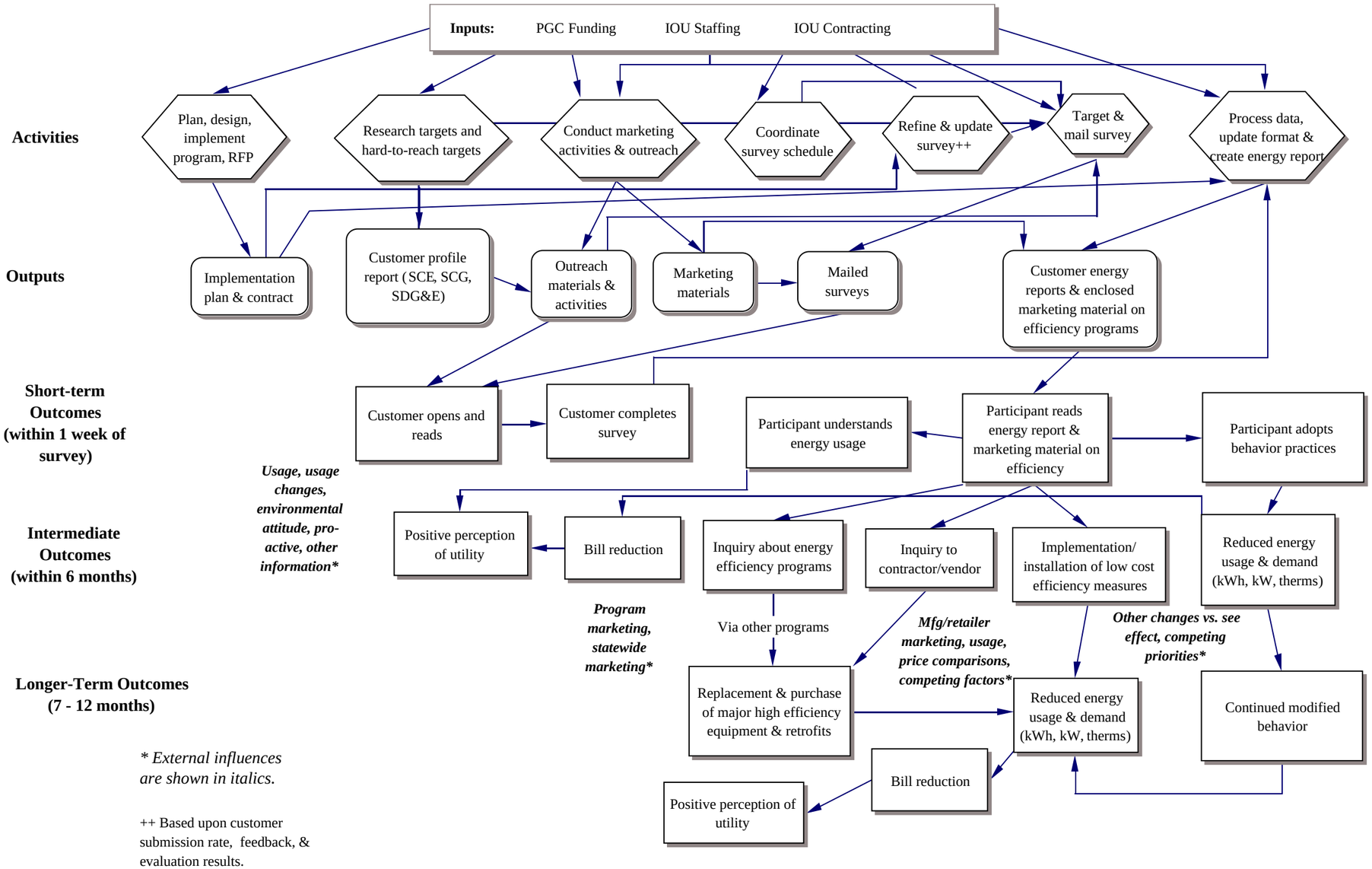
- Customers completing surveys (i.e., participating)
- Customers reading the report
- Customers increasing their understanding as a results of the HEES report
- Customers inquiring and participating in other energy efficiency programs

[20] The program can either provide new knowledge or confirm existing knowledge to move towards action.

- Customers increasing their satisfaction with their energy bills (as a result of the program)
- Customers adopting measures and practices as a result of the report
- And ultimately, customers reducing their energy and demand usage.

These outcomes are laid out in the models below.

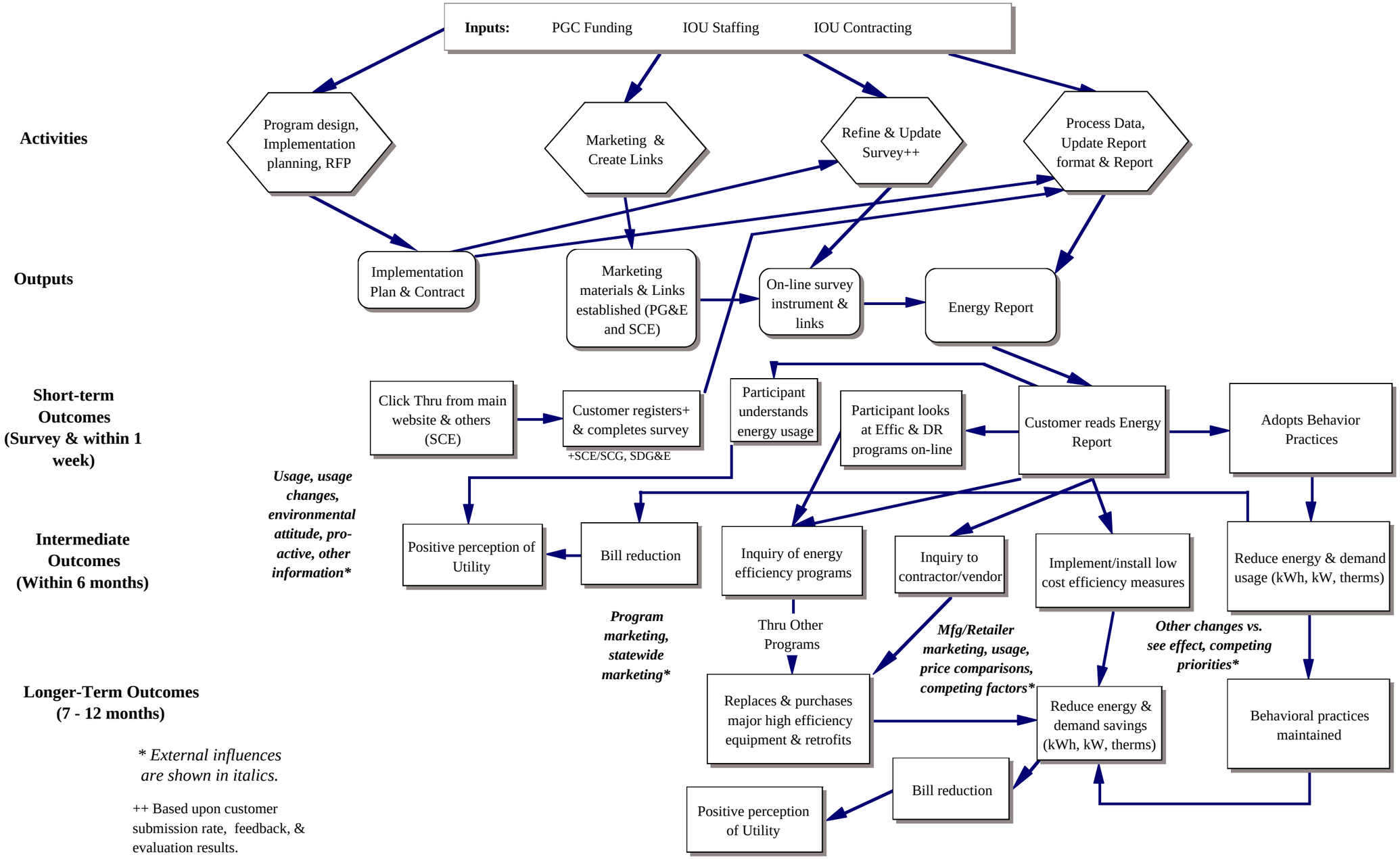
Figure 3.1-1: Logic Model for the HEES Mail Survey, November 2005



** External influences are shown in italics.*

++ Based upon customer submission rate, feedback, & evaluation results.

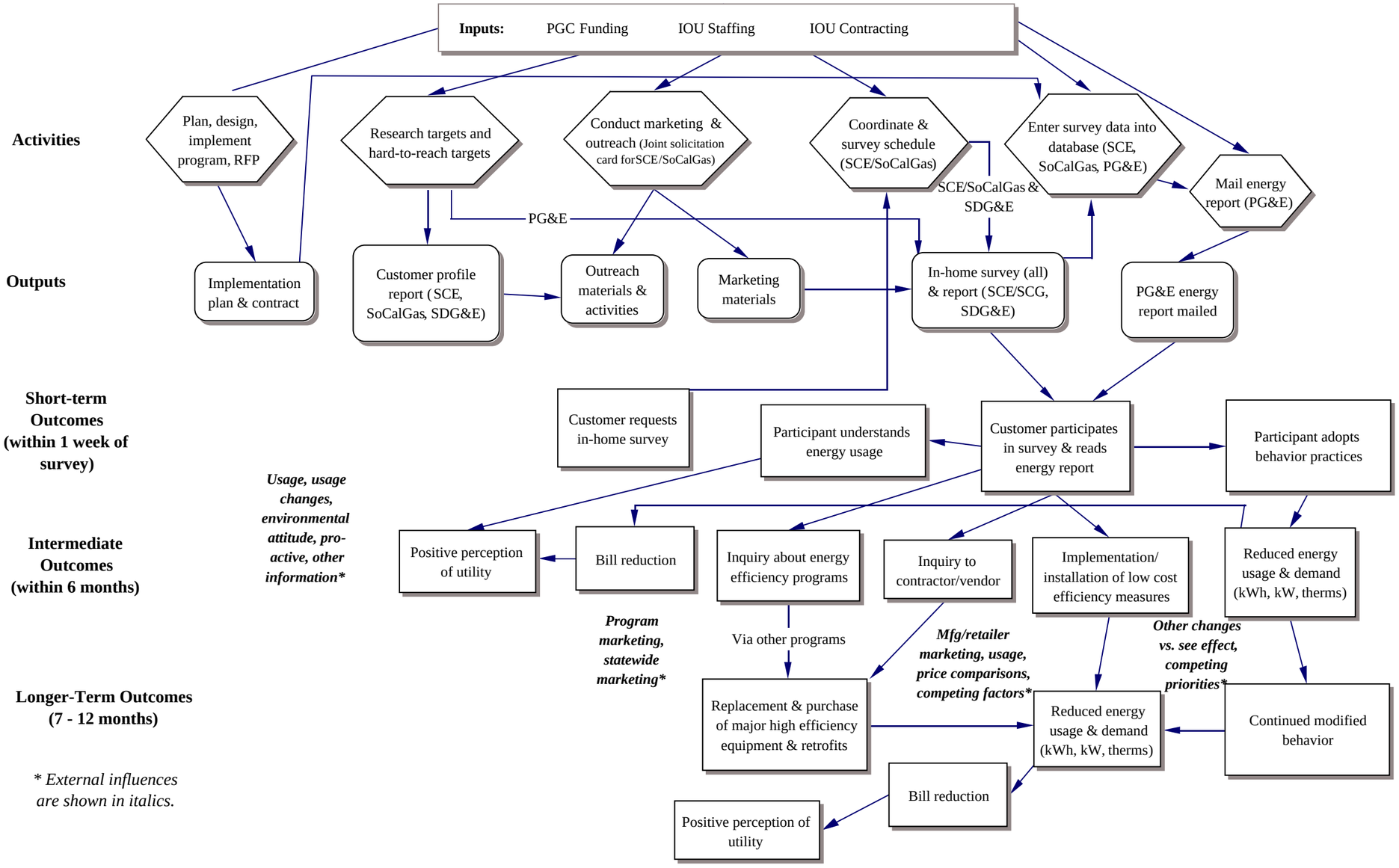
Figure 3.1-2: Logic Model for the HEES Online Survey, November 2005



** External influences are shown in italics.*

++ Based upon customer submission rate, feedback, & evaluation results.

Figure 3.1-3: Logic Model for the HEES In-Home Survey, November 2005



3.2. Potential Indicators from the Logic Models for Program Assessment

Based on the logic models and our program theory discussions, ODC identified potential indicators that could be used to assess program accomplishments. To present a thorough picture, we included potential indicators that do not fit into the current research plan but that should be considered in future evaluation activities. (For example, we did not conduct a "rejecter survey" because our research plan did not include this effort, but a rejecter survey should be considered in the future if the sponsors wish to gather this type of data.) Wherever possible, we examined indicators that overlap with the already approved research design.[21]

See Table 3.2-1, Table 3.2-2 and Table 3.2-3 for the potential indicators for the outputs and short-term outcomes of the different delivery mechanisms. See Table 3.2-4 for the potential indicators for the common set of intermediate and longer-term outcomes.

[21] Seldom are all indicators measured during a single evaluation.

Table 3.2-1: Potential Indicators for Mail Survey Outputs and Short-Term Outcomes

Outputs	Potential Indicators	Potential Data/ Evaluation Source
Implementation plan & contract	• PIP and contract	• Program records
Customer profile report	• Customer profile reports with information and frequency to support outreach effort • Number of targeted recipients	• Review of program materials and program records
Outreach activities	• Number of activities participated in	• Program records
Marketing materials	• Number of materials • Effectiveness of materials	• Review of program materials • Participant/rejecter survey
Mailed surveys	• Number of surveys mailed • Number of targeted participants • Changes to survey forms in response to customer feedback and evaluation results	• Program records • Assessment of audit forms
Customer energy reports & information packets	• Number of reports sent • Type of marketing included and its effectiveness • Changes to report formats in response to customer feedback and evaluation results	• Program records • Assessment of marketing materials • Participant/rejecter survey
Short-Term Outcomes (Survey and within 1 week)	**Potential Indicators**	**Potential Data/ Evaluation Source**
Customer opens and reads survey	• Percent of customers who read report	• Participant/rejecter survey
Participant completes survey	• Number/percent of completed surveys returned • Number/percent of completed surveys returned from those targeted	• Program records
Participant reads energy report and marketing materials for other provided	• Percent of participants who read through material	• Participant survey
Participant understands energy usage	• Contribution of energy report information to understanding	• Participant survey
Participant changes behavior	• Percent of participants who changed behavior and practices for both recommended and other practices based upon energy report	• Participant survey
Reduced energy & demand usage	• Change in kWh, kW, and therms based upon actions taken	• Consumption regression analysis of participant utility bills • Algorithm of usage with changes reported through participant survey

Table 3.2-2: Potential Indicators for Online Survey Outputs and Short-Term Outcomes

Outputs	Potential Indicators	Potential Data/ Evaluation Source
Implementation plan & contract	• PIP and contract	• Program records
Marketing materials & Web links	• Number and type of electronic marketing materials and links established	• Program records
Online survey instrument & Web links	• Operational online instrument & Web links	• Program operational verification
Energy report	• Customer indicates ability to receive energy report online • Changes to report formats in response to customer feedback and evaluation results	• Survey completion rate • Participant and drop-out survey • Program records
Short-Term Outcomes (Survey and within 1 week)	**Potential Indicators**	**Potential Data/ Evaluation Source**
Customer clicks through from main website & others	• Number of click-thrus to online survey site	• Website statistics
Participant registers & completes survey	• Number of online surveys completed	• Program records
Participant clicks to online efficiency and demand response programs	• Number of click-thrus to efficiency and demand response programs	• Website statistics
Participant understands energy usage	• Contribution of energy report information to understanding	• Participant survey
Participant changes behavior	• Percent of participants who changed behavior and practices for both recommended and other practices based upon energy report	• Participant survey
Reduced energy & demand usage	• Change in kWh, kW, and therms based upon actions taken	• Consumption regression analysis of participant utility bills • Algorithm of usage with changes reported through participant survey

Table 3.2-3: Potential Indicators for In-Home Survey Outputs and Short-Term Outcomes

	Potential Indicators	Potential Data/ Evaluation Source
Implementation plan & contract	• PIP and contract	• Program records
Customer profile report	• Customer profile reports with information and frequency to support outreach effort • Number of targeted recipients	• Review of program materials and program records
Outreach activities	• Activities participated in • Customer impressions	• Program records • Circulation & advertising statistics review
Marketing materials	• Number of materials • Number of impressions	• Circulation & advertising statistics review
In-Home survey	• Number/percent of in-home surveys conducted • Number/percent of surveys conducted with targeted recipients	• Program records
PG&E energy report mailed	• Number of energy reports mailed following in-home surveys • Changes to report formats in response to customer feedback and evaluation results	• Program records • Review of survey report forms
Short-Term Outcomes (Survey and within 1 week)	**Potential Indicators**	**Potential Data/ Evaluation Source**
Participant requests in-home survey	• Number of customer requests for in-home surveys	• Program records
Participant learns from survey & energy report	• Percent of participants who understood & learned from their survey & energy report	• Participant survey
Participant understands energy usage	• Contribution of energy report information to understanding	• Participant survey
Participant changes behavior	• Percent of participants who changed behavior and practices for both recommended and other practices based upon energy report	• Participant survey
Reduced energy & demand usage	• Change in kWh, kW, and therms based upon actions taken	• Consumption regression analysis of participant utility bills • Algorithm of usage with changes reported through participant survey

Table 3.2-4: Potential Indicators for Intermediate and Longer-Term Outcomes

Intermediate Outcomes (Within 6 months)	Potential Indicators	Potential Data/ Evaluation Source
Positive utility perception & reduced customer complaints	• Increased utility satisfaction post-participation • Reduced customer complaint rate post-participation	• Surveys of utility satisfaction pre- and post-participation or against comparison group (correct for reason for survey as possible selection bias) • Post-participation customer complaint rate versus non-participant complaint rate
Reduced bills	• Participants observe reduction in bills • Consumption analysis	• Participant survey • Consumption regression analysis of participant utility bills • Algorithm of usage with changes reported through participant survey
Inquiry of energy efficiency programs	• Participant inquiries about other energy efficiency programs	• Tracking of participants going through other utility programs • Follow-up survey about participation in utility and 3rd party efficiency programs
Inquiry to contractor/vendor	• Participant inquiries about efficient equipment	• Participant survey
Implementation/installation of low cost efficiency measures	• Participant adoption of measures recommended and others based upon energy report	• Participant survey
Reduced energy & demand usage	• Change in kWh, kW, and therms based upon actions taken	• Consumption regression analysis of participant utility bills • Algorithm of usage with changes reported through participant survey
Longer-Term Outcomes (7 – 12 months)	**Potential Indicators**	**Potential Data/ Evaluation Source**
Replacement & purchases of major high efficiency equipment & retrofits	• Number and type of equipment replaced • Number and type purchased when purchasing new	• Participant survey • Site visit interview
Continued behavioral improvements	• Percent of participants who maintain improvements in behavior	• Participant survey
Reduced energy & demand usage	• Change in kWh, kW, and therms based upon actions taken	• Consumption regression analysis of participant utility bills • Algorithm use with changes reported through participant survey
Reduced bills	• Participants observe reduction in bills • Consumption analysis	• Participant survey • Consumption regression analysis of participant utility bills • Algorithm of usage with changes reported through participant survey
Positive utility perception & reduced customer complaints	• Increased utility satisfaction post-participation • Reduced customer complaint rate post-participation	• Surveys of utility satisfaction pre- and post-participation or against comparison group (correct for reason for survey selection bias) • Post-participation customer complaint rate versus non-participant complaint rate

3.3. A Final Note on Program Theories and Logic Models

The use of PT/LMs to evaluate and improve energy efficiency programs has grown over the last five to seven years. In the past five years, it has become increasingly clear that documenting a program's theory and logic can be an important tool for effective program implementation and evaluation, especially when the program includes or is dominated by market transformation goals and objectives (Erickson, Fagan & Block 2003; Goldstone, Rufo & Wilson 2000). The recent comprehensive energy efficiency evaluation reference manual, the *California Evaluation Framework*, states, "An important component of the evaluation effort is to draw upon the program theory and logic model, to include its review (or development if one is not available) and use as an evaluation planning tool" (TecMarket Works (2003), page 30). The manual also says that while important for all types of program evaluations, program theory and logic models are especially important for complex programs and programs with long-term market change goals. (The California Evaluation Framework goes on to provide more in-depth descriptions, references, and basics of how to develop PT/LM with an example in an appendix.)

It is also important to recognize, however, that a PT/LM is only one tool among many that can be helpful for targeting evaluation efforts. It is also equally important that the logic model describe the program theory and do so within a proper framework of the market in which the program operates. The evaluation design then must consider both the program logic but also the external influences in the market that may inhibit (mitigate) or enhance program actions. All of these considerations along with effectiveness and the underlying behavioral interactions became a part of what causes observed changes in the marketplace. Though this makes the evaluation landscape more complicated, it is the context that must be considered to develop unbiased evaluation and analysis designs.

The outputs and outcomes within a logic model frame the development of potential indicators to measure program progress and to test the ability of the program logic to accomplish its goals (along with analyses that include measurement of the external influences and other attributes affecting market change). Operationalizing these indicators and then prioritizing them helps to define the longer-term evaluation research goals needed to support tracking the program effects. Several things can happen as the model is developed and as measurement and researchable issues are explored. It is likely that gaps in the causal relationships between actions and expected effects will be found. Sometimes steps that require substantial leaps will suggest that the theory, and probably the program design, needs further refinement. Sometimes steps will contradict what is known from the program, marketing, and evaluation literature and other social science and business theories. Sometimes an assumption, key to the way the program is designed for one of its causal chains, will conflict with an assumption in a different causal chain. All of these instances identify places where the program theory and the program design may need improvement. Using a PT/LM to assess the program and to conduct future evaluations can help to identify various issues and provide more reliable and defensible information on program effects.

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4. PROGRAM STRUCTURE AND PROGRAM DELIVERY

According to the utilities' 2004-2005 program implementation plans (PIP), the Statewide Home Energy Efficiency Survey Program (HEES) offers three types of survey options (mail, online, and in-home) in multiple languages to reach a wide range of customers. We provide findings about the program structure and delivery related to the three delivery mechanisms for all four California investor-owned utilities (IOUs) below.

4.1. Program Implementation

HEES is currently a statewide program and the administrators hold periodic meetings to coordinate across the utilities. The level of funding for the program differs between the utilities, ranging from SCE which seems to be ramping up the program and starting to provide CFLs to many audit participants, to Sempra which seems to be moving towards the online component of the program which is relatively inexpensive and easy to implement.[22]

Although the program is currently a single statewide program, HEES was originally implemented separately by each utility. The channel by channel development of the program has allowed the program to account for various utility-specific directives relative to energy use and marketing; however because multiple vendors designed different parts of the program there are currently *six unique versions* (defined below) of the HEES survey and report. (See Table 4.1-2.)

Throughout this report, we use the following terms:

- *Delivery mechanism* refers to the three types of survey options: in-home, online, or mail.
- *Channel* refers to the source of information defined by the utility and the delivery mechanism. Each of the four utilities used three delivery mechanisms, resulting in a total of twelve distinct channels. (See Table 4.1-1.)

Table 4.1-1: HEES Channels

Utilities	Delivery Mechanisms		
	Mail	In-Home	Online
SCE	1[a]	5[b]	9
PG&E	2[a]	6	10
SDG&E[23]	3[a]	7	11[c]
SoCalGas	4[a]	8[b]	12[c]

a. The mail version is the same for all utilities.
b. SCE and SoCalGas use the same in-home version.
c. SDG&E and SoCalGas use the same online version.

- *Version* refers to a generally consistent way of implementing the program, which results in relatively consistent inputs and outputs (although the specific recommendations vary). In general, each vendor implementing various channels of the program has developed their own version of HEES. It is important to note that even within some of the same versions, the recommendations vary some between utilities (e.g., SoCalGas customers get mostly gas recommendations while SCE customers receive mostly electric

[22] This finding is based on in-depth interviews with utility staff in 2005. The utilities did not provide their budgets for this program, but if this information is available we will incorporate it into the report.

[23] SDG&E initially used the same version for both their online and in-home customers (at least up to early 2005), but now uses a shortened survey that is filled out while the auditor is at the customer's home.

recommendations); however, the format and types of information are generally similar within each version.

The mail version of the program is the most consistent across the utilities, with one primary version implemented by a single vendor (Kema-Xenergy). This mail version is also the same as one of the three in-home versions. The versions for the in-home and online mechanisms overlap some between utilities, with SCE and SoCalGas working together to implement a joint in-home program due to significant customer overlap, and SDG&E and SoCalGas implementing a similar online version of the program. Across the four IOU's, therefore, there are *three different versions of the in-home* HEES survey and report and *three different versions of the online* HEES survey and report. In all, six unique versions of the Home Energy Efficiency Survey have been pulled together under the statewide umbrella (See Table 4.1-2.)

It should also be noted that for several of the utilities, the online survey offers a short and long version. The short version is designed to serve customers who do not have the time or interest to complete a longer questionnaire. (However, the information that they receive based on this "short" version of the questionnaire is less customized and detailed than if they complete all of the questions.) Note that for the purposes of this evaluation effort, we do not distinguish between "short" and "long" versions of the online questionnaire (since we were already covering 12 channels). In future effort, however, the utilities may want to consider including these versions as separate groups in their analysis.

In the table below, we compare some key information about the six versions and how they have been designed and implemented.

Table 4.1-2: Overview of the Six Unique Versions of HEES (by Utility and Delivery Mechanism)

	Mail (1 version)	**Online** (3 versions)			**In-Home** (3 versions)		
	Version 1	**Version 2**	**Version 3**	**Version 4**	**Versions 1** (same as the mail version)	**Version 5**	**Version 6**
Utility	PG&E/SCE/SDG&E/SoCalGas	PG&E	SCE[a]	SDG&E/ SoCalGas	PG&E	SCE/ SoCalGas	SDG&E
Developer	Kema-Xenergy	Nexus	Kema-Xenergy	Enercom	Kema-Xenergy	CSG/Utilities	Sempra
Database maintained by	Kema-Xenergy (3 databases)	Nexus (1)	Kema-Xenergy (1)	Sempra (2)	Kema-Xenergy (1)	SCE (1)	Sempra (1 Excel spreadsheet)
Customer contact information	Yes (but no telephone numbers)	No (voluntary email addresses only)	Yes (but no telephone numbers)	Yes (telephone & email)	Yes	Yes	Yes
Additional demographic data	Yes	Yes	Yes	No	Yes	Yes	No
Customer account	Yes	No	Yes	No	Yes	No	No
Marketing and special promotions[b]	Mailing of survey to targeted customers; CBOs; home shows	Electronic banners; utility bill inserts	Flyers; gift card (Starbucks) promotions; electronic banners	SoCalGas: Bill newsletter; email campaign. SDG&E: Promo message on hold.	CBOs	SoCalGas: Bill inserts and promo on web page; Both: Mailer	Door-to-door; newsletters and flyers
Distribution of CFLs (direct impacts)	During special promotions only for PG&E. (PG&E customers also receive an energy wheel.)	No	No	No	For special promotions only	SCE started giving CFLs towards the end of 2005. (SoCalGas looking to provide low-flow showerheads.)	Unsure.
Reporting to customer	Full	Full	Full	Full	Full	Copy of survey form	Was printout of online info, now copy of completed survey form
Tracking of recs by customer	Yes	No (tracking done but not associated to customer)	Yes	Yes	Yes	Yes	No

a. Has a long and short version of the survey/report.
b. For more detailed information on marketing efforts, see the Marketing Section of this report.

4.2. HEES Output: The Energy Report

All participants receive some form of energy report, although the forms of reporting and the types of recommendations made by HEES depend on the channel. The vendor generally processes the answers on the customer survey and recommends ways to save energy, with some channels or utilities offering more customer-specific information than others. The differences between these reports (although they appear slight) can lead to large differences in the extent to which they serve customers.

The amount of time it takes for the participant to receive feedback varies. Through the mail channel and PG&E's in-home channel, the recommendations are pulled together in an energy report and mailed to the customers' home within a couple of weeks of submitting the survey.[24] Online customers, however, receive the equivalent energy report immediately after submitting the survey since the computer generates the results. In-home participants (with the exception of PG&E's in-home participants), also receive feedback right away. These in-home participants receive a copy of the form that the auditor fills out in triplicate (by checking various boxes or recommendations on the sheet). This in-home energy report, therefore, is much less detailed, but the auditor may verbally provide additional detailed information.

The extent to which customer usage data is incorporated into the energy report also varies. While all of the mail channels include customer-specific usage data in the energy report, most of the in-home and online versions of the report do not. The exceptions are PG&E's in-home channel and SCE's online channel, since these programs are both maintained by Kema and largely follow the mail format.

Recommendations also vary across channels, and some of the channels do not provide customers with the estimated savings for each recommendation. (For more detail, see the Comparison of Recommendations Across Channels section of this report.) Recommendations for in-home participants, for example, are specific to the home, but auditors do not look at energy usage. (See Table 4.2-1 for versions that provide customized savings based on estimated usages, those that provide generic savings estimates, and those that do not provide savings.)

One administrator indicated that she thought the program worked by trying to help the customer understand the payoffs of various measures and to help them prioritize which actions to take, but the energy report does not offer prices or cost estimates, not all the recommendations offer savings, and the energy report definitely does not provide insight into prioritizing tasks. While it is possible that the in-home auditor provides guidance on these issues, the details are not recorded in the report. Customers may or may not want to be told which measure or practices they should install or perform first, but informing them of the range of costs of certain recommendations and the related energy savings may encourage them to focus and act on a few recommendations.

A comparison of the information (outputs) provided to customers in the energy report is shown in Table 4.2-1.

[24] For PG&E in-home customers, the auditor fills in the mail form and the customer receives the energy report by mail.

Table 4.2-1: Comparison of Energy Reports

	Mail (1 version)	**Online** (3 versions)			**In-Home** (3 versions)		
	Version 1	**Version 2**	**Version 3**	**Version 4**	**Version 1 (same as mail)**	**Version 5**	**Version 6**
Utility	PG&E/SCE/SDG&E/SoCalGas	PG&E	SCE[a]	SDG&E/SoCalGas	PG&E	SCE/SoCalGas	SDG&E[a]
Timing of energy report	Mailed	Immediate	Immediate	Immediate	Immediate/Mailed	Immediate	Immediate
Type of information received by customer	Mailed energy report	Automatically-generated Web-based energy report	Automatically-generated Web-based energy report	Automatically-generated Web-based energy report	Mailed energy report; advice from auditor	Copy of form; advice from auditor	Copy of form; Advice from Auditor
Includes customer energy bill data	Yes	No (unless customer inputs manually)	Yes	No (but prompts customer to enter data)	Yes	No	No
Provides graphical description of usage	Yes	Yes (of entered)	Yes	Yes	Yes	No	No
Refers customers to other utility programs/	Some recommendations; Copy of HERS brochure, if available (ran out in early 2005), and recycling information if available.	Web links	Some recommendations		Some recommendations; Optional brochure or rebate application from auditor	Optional brochure or rebate application from auditor	Optional brochure or rebate application from auditor
Helps customers understand cost ($) of measures/actions	No (unless in results database)	Does not appear to, although database includes costs	No (unless in results database)	No	No (unless in results database)	No	No
Provides savings ($) per recommendation.	Yes, as range of savings customized based on average usage	Yes, as range of $$ saved (generally generic)	Yes, as range of savings customized based on average usage	No	Yes, as range of savings customized based on average usage	No	No
Indicates follow-up with customers	No	No	No	No	No	No	No

a. Has a long and short version of the survey/report.

4.3. Marketing Efforts[25]

Each utility conducts its own marketing efforts associated with the program. Some of the program administrators feel that promoting HEES is difficult given the competing priorities of the utility. Several program administrators indicate that even among energy efficiency programs, HEES promotion and marketing sometimes takes a back seat since this program does not currently have energy savings associated with it, and therefore is viewed as a less important part of the portfolio of energy efficiency programs.

Marketing of this program is primarily targeted to customers of a particular size (i.e., there is a minimum usage requirement for promotions) and varies across the channels. Note that the utilities generally promote the mail channel by mailing out the actual HEES survey, which customers can then complete and return, while the online promotions tend to be banners or promotional messages in the newsletter. Thus, the marketing of the online channel requires customers to be more active and actually go to the website; while the marketing of the mail channel allows for a more reactive response from customers. That is, the survey is already in their hands, they just need to complete and return the survey to the utility.

Many of the utilities target their in-home program to hard-to-reach (HTR) customers (defined by zip code), since this channel is an expensive channel to fund. (See Table 4.3-1 for HTR targets.) Note that the mail channel has a goal of sending 50% of all mailings to HTR customers (not completions) whereas the in-home channel's HTR goal is a percentage of all participants.

Table 4.3-1: HTR Targets by Utility and Channel 2004/2005

	Mail	Online	In-Home
SCE	50% of mailings	none	50% of participants
SDG&E	50% of mailings	none	40% of participants
SoCalGas	Claims none	none	Claims none
PG&E	100% of mailings to HTR customers	none	(Pilot program only; targets new homes.)

The tables below document each utility's marketing activities based on the monthly reports provided to the California Public Utilities Commission. When viewed in the context of participation by month (shown in the Participation Rates by Channel section), these marketing efforts appear to influence participation.

[25] Note that the 2003 HEES Evaluation looked at demographic characteristics to develop a mathematical model to determine predictors of participation.

Table 4.3-2: PG&E Marketing Activitya

Month	Marketing Activity
November 2005	▪ Nothing listed in monthly report
October 2005	▪ Program managers participated in "October Is Energy Efficiency Month," an employee awareness event held at the PG&E headquarters in San Francisco throughout October. Energy tips for homes, program applications and services, and brochures were distributed. Lighting, pool pumps, and HVAC demonstrations were among the event highlights.
March-September	▪ Nothing listed in monthly report
February 2005	▪ Placed electronic banners on utility website to promote the online English, Spanish, and Chinese survey: 0.05% complete ▪ Coordinated with community-based organizations or local media to promote the Chinese and other language surveys: 0.05% complete ▪ Placed Vietnamese and Korean mail survey on PG&E website: 0.05%
January 2005	▪ Sent direct mail solicitation package to HTR customers: 0.29% complete ▪ Placed electronic banners on utility website to promote the online English, Spanish, and Chinese survey: 0.05% complete ▪ Placed Vietnamese and Korean mail survey on PG&E website: 0.05%
December 2004	▪ Placed electronic banners on utility website to promote the online English, Spanish, and Chinese survey: 0.05% complete ▪ Placed Vietnamese and Korean mail survey on PG&E website: 0.05%
November 2004	▪ Sent direct mail solicitation package to HTR customers: 0.63% complete ▪ Placed electronic banners on utility website to promote the online English, Spanish, and Chinese survey: 0.5% complete ▪ Used utility bill inserts to promote the online English, Spanish, and Chinese survey: 0.25% complete ▪ Coordinated with community-based organizations or local media to promote the Chinese and other language surveys: 0.85% complete ▪ Placed Vietnamese and Korean mail survey on PG&E website: 0.8%

a. December report was not available. Note that the percentage refer to the percent complete in each month (not cumulative percentages). We present the data as reported by the utilities in their monthly reports.

According to SCE program administrators, SCE's mail survey marketing is done by geographic region, starting at the coast and as the summer approaches, moving inland. The marketing for the in-home channel targets a hard-to-reach population, defined as customers with moderate income in a rural area, aged 55 and older, high energy usage, and/or by zone.

The SCE Annual Report states that "Marketing and promotion strategies to increase customer participation include direct mail, email blasts and online banner ads, and Internet advertising. Other strategies include outreach through local governments, SCE's Energy Efficiency Mobile Education Unit (MEU), phone center, and ethnic and trade associations and community organizations." SCE's marketing efforts, as reported in their monthly reports, are shown in the table below.

Table 4.3-3: SCE Marketing Activity

Month	Marketing Activity
April-December	▪ Nothing listed in monthly report
March 2005	▪ 39,902 mail survey solicitation packages (multilingual) ▪ 50,000 in-home survey solicitation packages (multilingual) ▪ 602 in-home survey promotions ▪ 1,000 online survey flyers (multilingual)
February 2005	▪ 39,900 mail survey solicitation packages (multilingual) ▪ 250 online survey flyers (multilingual) ▪ 250 online survey promotions (i.e., gift cards)
January 2005	▪ 500 online survey flyers (multilingual) ▪ 1 online survey utility website (banners and placements) ▪ 1 online survey misc. (web hosting, coding, database engineering, etc.)
December 2004	▪ 6,632 mail survey solicitation packages (multilingual) ▪ 70 online survey flyers (multilingual) ▪ 1 online survey utility website (banners and placements)
November 2004	▪ 500 mail survey solicitation packages (multilingual) ▪ 1 online survey utility website (banners and placements)
October 2004	▪ 30,000 mail survey solicitation packages (multilingual) ▪ 25,000 in-home survey solicitation packages (multilingual) ▪ 2,300 online survey flyers (multilingual) ▪ 402 online survey fulfillment ▪ 702 online survey promotions (i.e., gift cards) ▪ 1 online survey utility website (banners and placements)
September 2004	▪ 19,000 mail survey solicitation packages (multilingual) ▪ 300 online survey flyers (multilingual) ▪ 5,306 online survey fulfillment ▪ 5,306 online survey promotions (i.e., gift cards) ▪ 2,100,000 online survey media ▪ 1 online survey utility website (banners and placements)
August 2004	▪ 50,000 in-home survey solicitation packages (multilingual) ▪ 788 in-home survey promotions ▪ 1,200 online survey flyers (multilingual) ▪ 3,755 online survey fulfillment ▪ 3,755 online survey promotions (i.e., gift cards) ▪ 6,400,000 online survey media ▪ 1 online survey utility website (banners and placements)
July 2004	▪ 50,000 in-home survey solicitation packages (multilingual) ▪ 139 online survey fulfillment ▪ 139 online survey promotions (i.e., gift cards) ▪ 1 online survey utility website (banners and placements)

Table 4.3-4: SoCalGas Marketing Activity[a]

Month	Marketing Activity
November 2005	▪ Continued to market online and in-home audits. ▪ Established targets for mail surveys.
September 2005	▪ Continuing to market on-line and in-home audits. ▪ Established targets for mail surveys.
August 2005	▪ Continuing to market on-line and in-home audits. ▪ Established targets for mail surveys.
May-July 2005	▪ Nothing listed in monthly report
April 2005 (Appears to be same as March report)	▪ Promoted the English, Spanish, and Chinese online analysis in the bill newsletter ▪ Mailed 29,479 English surveys ▪ Mailed approximately 200 surveys to hard-to-reach Chinese and Vietnamese customers ▪ Conducted email campaign to 1,700 customers promoting the online survey ▪ Participated in Pasadena Home Show and distributed material regarding surveys to approximately 100 people
March 2005	▪ Promoted the English, Spanish, and Chinese online analysis in the bill newsletter ▪ Mailed out 29,479 English surveys ▪ Mailed approximately 200 surveys to hard-to-reach Chinese and Vietnamese customers ▪ Conducted email campaign to 1,700 customers promoting the online audit ▪ Participated in Pasadena Home Show and distributed material regarding surveys to approximately 100 people
February 2005	▪ Sent 31,789 direct mailings ▪ Promoted the English, Spanish, and Chinese online analysis in the bill newsletter ▪ Displayed online audit invitation on the SoCalGas homepage
January 2005	▪ SCE and SoCalGas direct mailer in-home survey program: 10,000 ▪ SoCalGas in-home survey bill inserts: 50,000 ▪ Displayed online survey invitation on the SoCalGas homepage ▪ Promoted the online audit in the December/January Gas Company News ▪ Posted the free in-home survey invitation on SoCalGas website
December 2004	▪ Displayed online survey invitation on the SoCalGas website ▪ Promoted the online survey in the December/January Gas Company News and on a radio interview
November 2004	▪ Direct mailings: 14,757
October 2004	▪ SCE and SoCalGas direct mailer in-home survey program: 25,000 ▪ Displayed online audit invitation on the SoCalGas website ▪ SoCalGas and SCE participated in an October joint mailing to 25,000 customers promoting the in-home survey program. The joint mailing targeted SCE's high desert service territory offering customers a free in-home survey on customers' electric and gas appliances.
February 2004	▪ Launched second month of full-page ads promoting SoCalGas MF Energy Efficiency rebates in four property-owner industry publications ▪ Continued 10-second radio spots as part of winter gas campaign to promote energy efficiency. Developed TV spots for residential rebate programs. ▪ Promoted online program through a bill insert distributed to residential customers in both English and Spanish

a. October and December 2005 reports were not available.

Table 4.3-5: SDG&E Marketing Activity[a]

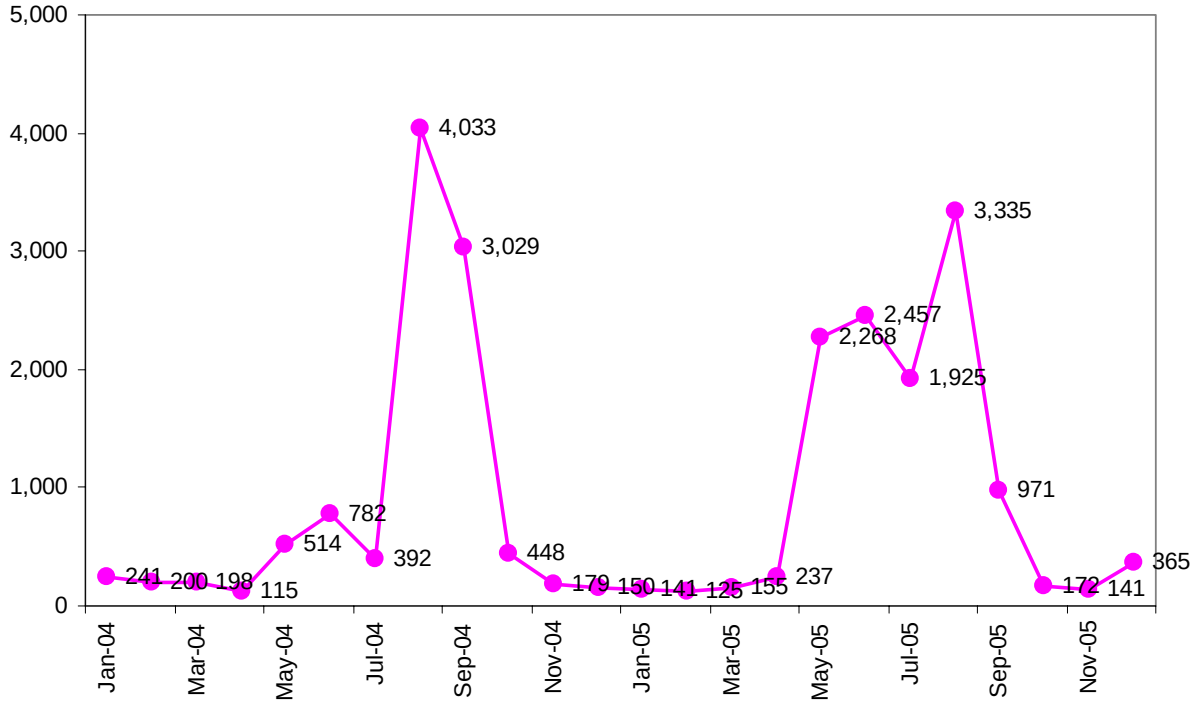
	Marketing Activity
September 2005	▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative.
July 2005	▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative.
June 2005	▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative.
May 2005	▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative. ▪ Mailed 50,000 surveys to HTR customers.
April 2005	▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative. ▪ Energy Notes promoted the online and mail surveys in English and Spanish.
March 2005	▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative. ▪ Promoted the online, mail, and in-home surveys in various combinations in English, Spanish, Vietnamese, and Chinese through a bill insert, newspaper print ads, radio traffic, and television spots. ▪ Sent Chinese mail surveys to 15 Chinese-speaking customers.
January 2005	▪ Sent the new Spanish mail survey to 132 residential customers ▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative.
December 2004	▪ Sent the new Vietnamese mail survey to 188 residential customers ▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative. ▪ Auditor continued to solicit door-to-door surveys in targeted communities. ▪ Promoted the SDG&E online survey through the December bill insert, the Fall/Winter radio campaign, and through a series of ads in two local newspapers.
November 2004	▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative. ▪ Auditors continued to solicit door-to-door surveys in targeted communities. ▪ Promoted the SDG&E online survey through the November bill insert, the Fall/Winter radio campaign, and through a series of ads in two local newspapers.
October 2004	▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative. ▪ Auditors continued to solicit door-to-door surveys in targeted communities.
September 2004	▪ Promoted the online survey component with messages that play while customers wait to speak to a call center representative. ▪ Promoted the in-home survey via 2357 newsletters to Eastlake II Community, 344 flyers to the Villas Apartments, and 600 direct mail pieces to senior citizens in the South Bay. Auditors conducted door-to-door surveys in targeted communities.

a. August, October and December 2005 reports were not available.

Based on the tables of marketing efforts and graphs of participation, one of the most successful marketing efforts has been SCE's gift card promotion. As a marketing effort to boost online participation, SCE offered a $5 gift card to Starbucks in August-September 2004 and a $5 Target gift card in second quarter 2005 to everyone who completed an online survey. The Starbucks promotion was mailed to 200,000 email addresses of L.A. Times subscribers and increased participation significantly; the months in which this promotion was offered (August and September, 2004) include the highest number of completed online surveys. (See Figure 4.3-1 below.) The Target gift card promotion in the second quarter of 2005 included about 820,000

email blasts and 7.7 million banners on local and regional websites, and also resulted in large numbers of participants.[26]

Figure 4.3-1: Number of Completed Online Surveys among SCE Customers



Approximately half of the mail participants received the survey in the mail and filled it out, and a large percentage of online participants found out about HEES through the utility website and/or online banners. Meanwhile, in-home participants benefited from many other approaches, such as personal contact (utility representative, friend/relative) and media outlets. Innovative marketing efforts, such as the SCE's gift card promotions to a large number of email addresses, have also helped the program to reach a broader group.

Overall, however, according to customers, the primary and most effective way to inform customers across the board about HEES is through the utility bill insert (followed closely in effectiveness by the utility website). Although some customers say they ignore the additional papers that come with their utility bill, one-quarter of the population learned about HEES through this method. Bill inserts reach across all channels, whether customers choose to participate via mail, in-home, or online. (See Table 4.3-6.)

[26] According to *SCE Annual Report to the California Public Utilities Commission, 2005.*

Table 4.3-6: Top Ways That Participants Learned About HEES (multiple response)

Process survey Q1-Q3: How did you learn about HEES? Do you recall other places? Where did you see or hear about HEES?	Total (n=1045)	Mail (n=242)	In-Home (n=242)	Online (n=561)
Utility bill insert	27%	31%$^{\mu}$	31%$^{\mu}$	23%
Utility website	24%	4%	4%	42%$^{\wedge\#}$
Mail survey	16%	48%$^{\#\mu}$	6%	6%
Utility representative	8%	2%	21%$^{\wedge\mu}$	4%
Friend or relative	7%	7%	16%$^{\wedge\mu}$	3%
Online banner	7%	2%	1%	11%$^{\wedge\#}$
Email	5%	--	--	10%
Television	4%	5%	9%$^{\wedge\mu}$	2%
Newspaper	4%	5%	9%$^{\wedge\mu}$	1%
Radio	4%	--	7%$^{\mu}$	2%

$^{\wedge}$ Significantly different from mail group.
$^{\#}$ Significantly different from in-home group.
$^{\mu}$ Significantly higher from on-line group.

When we asked the general population how they prefer to receive information on how to save energy, more than two-thirds of respondents say they want to receive information about energy savings by mail. Another 22% of respondents prefer an online delivery of this information. Four percent of respondents want someone to visit their home, and a few others prefer a telephone call or something in the newspaper.

Based on our findings, the program should continue marketing through multiple means since the variety of methods reaches a wider swath of potential customers.

As far as messaging, the primary message associated with the Home Energy Efficiency Survey is "save money." "Save money" is a standard and effective message, but the utilities should also consider messages that indicate to the customer that the Home Energy Efficiency Survey is a tool that customers can use annually to check on their usage and to ensure that they are doing what they can to save energy, such as "Monitor energy use in your home". If utilities were to market the HEES survey annually as a usage assessment tool, they could simultaneously update participants with new ways to improve their home's energy usage. Alternatively, the utilities should consider marketing the program with messages that more directly affect the customer such as "Learn why you energy bill is higher this month" for customers that have had an increase in their bills. (Note that no message testing was conducted as part of this evaluation effort, but we recommend that the utilities look at different messages to boost participation, although this is not a requirement given that the utilities are meeting their participation goals.)

Multilingual Approach

As noted above, the HEES survey is offered in multiple languages to attract the largest number of participants. In 2004 and 2005, HEES continued to add additional languages such as the SCE Chinese, Korean and Vietnamese options. The languages offered at the time of our evaluation effort (PY2005), by utility and delivery mechanism, are shown in the table below.

Table 4.3-7: HEES Language Options (PY2005)[a]

	Mail	In-Home	Online
PG&E	English, Spanish, Vietnamese and Korean	NA	English, Chinese, Vietnamese, Korean, Spanish[b]
SCE[c]	English, Spanish, Chinese, Vietnamese (Korean in 2005)	English, Spanish	English, Chinese, Spanish (Vietnamese in late 2005)
SoCalGas[a]	English, Spanish, Chinese, Vietnamese	NA	English, Spanish, Chinese
SDG&E[d]	English, Spanish, Chinese, Vietnamese	English, Spanish	English, Spanish

a. Based on monthly reports. Online survey is available by .pdf (and therefore not interactive) for some languages.
b. http://www.pge.com/res/energy_tools_resources/energy_tools.html
c.http://www.sce.com/NR/rdonlyres/32E227B9-2C21-478A-93E9-603CD2369B60/0/ee_ann_rprt_2005.pdf pg 19-20
d. http://www.sdge.com/regulatory/docs/eep_sdge.pdf pg 20

4.4. An Overview of the Available HEES Data (for Evaluation Efforts)

As part of our review of the statewide program structure and delivery, conducted at the specific request of the CPUC, ODC reviewed all available HEES databases. Four different points of contact maintain these 10 unique databases. Collecting this information was complicated by the fact that even when several databases were maintained by the same vendor (Kema-Xenergy), we needed to ask the various utility contacts to obtain the data. For example, although Kema-Xenergy maintains the mail databases for all four utilities, we were only able to retrieve three of the databases from the points of contact for the full PY2005 mail components of HEES (since we worked with four separate contacts for the data).

Overall, we found that HEES includes multiple inconsistent databases. The databases that are maintained by the same vendor are generally consistent across all utilities (e.g., the Kema-Xenegy mail databases). Even these generally consistent databases, however, are often coded

differently so that it is difficult to compare the types of recommendations made to participants. When different vendors maintain the databases, they vary significantly across the channels. Consequently, *none of the utilities* maintains consistent databases across all three HEES delivery mechanisms; and the only component that is generally consistent across all utilities is the mail survey and report. The amount of effort required to evaluate this program, therefore, is significantly more than if the program were truly a streamlined statewide program.

In all, there are eight different lists of recommendations across the available databases, each with its own coding system that does not match the other lists. Even within the mail version, there are four different lists of recommendations that are difficult to reconcile for evaluation purposes. As such, considerable work was required to understand if all customers in one territory receive similar recommendations. (See the A Comparison of Recommendations Across Channels section of this report for a much more extensive review of the recommendations.)

Moreover, data for some of the channels are limited, which restricts the type of evaluation activities that can be conducted. For example, the only data available for SDG&E's in-home channel is an Excel spreadsheet with customer contact information. SDG&E's HEES staff fill out a hard copy form for each participant and then keep a copy. According to program administrators, PY2005 information was not entered into an electronic database, so we were unable to ask SDG&E in-home customers about specific recommendations.

Limited customer information restricts our ability to conduct a thorough evaluation, For example, because PG&E's online channel requires the customers to input only a zip code (entering email address information is optional for customers), we do not have the customer contact information required to complete a thorough process or impact evaluation of PG&E's online channel. The only way to contact participants is via email if they voluntarily provided an address, and there is no way to verify unique participants.

Many of the channels, but not all, provide customers with a range of savings from the recommendations (in dollars), but the majority of databases do not maintain a master copy of savings estimates or useful life estimates (EULs) by recommendation. Since HEES is considered an "information only" program, the fact that this information is missing is understandable. However, it also means that we are unable to incorporate this information into any type of evaluation effort without significant extra cost and effort.

The databases also lack information on the additional materials (such as brochures, rulers, etc.) and/or CFLs that customers sometimes get with their energy report. Although the distribution and/or installation of CFLs for the in-home program was generally limited in the evaluation years (PY2004/2005), the databases provided to the evaluation team did not indicate which customers received CFLs.

According to the California Evaluation Framework, one of the primary considerations in determining whether or not to conduct an information and education evaluation is the *ability* to conduct the evaluation and/or the cost of the evaluation for that specific program cycle. HEES databases are difficult to obtain and challenging to analyze. Additionally, the variations and limitations of the databases often require a particular channel to be dealt with separately (e.g.,

interviewing PG&E online participants via Internet since contact information is not collected) or not to be included in the evaluation effort at all (e.g., the recommendations made to SDG&E's in-home participants).

A table listing the data needed and available for residential end-user focused programs (as specified by the Protocols) is shown below. As shown, the only complete field is the date of participation. All other fields were lacking for at least one channel.

Table 4.4-1: Data for Residential End-User Focused Programs (as specified by the Protocols) [a]

	Provided For All/Some/NA	Notes
Account numbers	Some	Not provided for PG&E online participants. Provided for all others.
First and last name	Some	Not provided for PG&E online participants. Provided for all others.
Address	Some	Not provided for PG&E online participants. Provided for all others.
Phone number	Some	Only provided for in-home participants. The majority of databases did not include phone numbers, although additional information should be available from utilities for those with address information.
Fax number (if available)	NA	
Email address (if available)	Some	Provided for some online participants, but not all online participants. Voluntarily given by PG&E online participants.
Dates of key action (i.e., survey, program enrollment)	All	
Listing or description of actions taken or services received (i.e., recommendations)	Some	SDG&E did not provide a list of recommendations given to in-home participants. All other channels have a complete list of recommendations given to participants (even when no name is available.)
Estimated savings per action	Some	Some databases include estimated savings. None of the in-home databases include this information.
Consumption history	Available if requested for those with account numbers.	
Extent to which participant is a repeat participant (if available)	Available on request.	
Rate classification	Available on request.	

[a]To aid future HEES evaluation studies, we looked at the data requirements for evaluations per the Evaluation Protocols (designed for programs from 2006 onward). Much of the data specified on page 208 of the Protocols is not applicable to this program and therefore we did not include it in this table (e.g., service turn on date).

To assist with future evaluation efforts, we suggest that all channels (particularly PG&E's online channel) collect complete customer information, as well as information about the recommendations made to these customers. Collecting contact information from PG&E's online participants (as is required for the other channels) would allow the utility to conduct a more

thorough evaluation as well as to follow up with customers for other reasons, such as customer service. We also recommend that the utilities consider using our evaluation to develop a statewide master list of recommendations with related savings estimates and EULs. Finally, since the "direct install" effort is expected to increase in the future (particularly for SCE), we recommend that the databases flag all participants who receive CFLs from the program.

5. PARTICIPATION RATES BY CHANNEL

This section presents PY2004/2005 participation rates across all utilities and delivery mechanisms. HEES continues to draw in large numbers of customers each year. In all, over 151,000 customers participated in HEES over the course of two years (2004-2005)—approximately the same number as in earlier years.

This information should be viewed in the context of the program budgets, and varying costs by delivery mechanism. At the time of this report, the *actual* dollars spent were not available for all utilities.[27] The budgeted dollars for this program by utility are SCE $3,128,379, PG&E $1,648,788, SDG&E $862,666, and SoCalGas $628,000. Note that these are the total budgets inclusive of all costs (including EM&V) and these numbers do not reflect fund shifting in 2004 or 2005. We attempted to examine budgets by delivery mechanism but were told by utility staff that the HEES budget is not broken out by delivery mechanism.

Per unit costs, however, were available for many of the channels. Online is the least costly delivery mechanism, followed by mail, which costs approximately $1.00 more per customer in SCE territory and $5.00 more per customer in PG&E territory.[28] In-home (and telephone) surveys are the most expensive to implement (two to six times more expensive than mail), and thus are less widely used. Per unit costs were provided in some utilities workbooks and ranged significantly.:

- SCE: online $11.32; mail $12.30; in-home $81.81
- PG&E: online $20; mail $25; in-home $60
- SDG&E: (online and mail costs not provided in workbook) in-home (with HTR) $35
- SoCalGas: (online costs not provided in workbook) mail $22.56; in-home $41.91.

Note that these are average costs. Marginal costs were not provided but may be available from the utilities.

All of the utilities met their 2004-2005 goals; and we were able to verify most of the utility reported numbers at the time of our report. Below we provide participation numbers, as well as targeted and utility-reported numbers.

5.1. HEES Participation

The HEES survey was completed over 71,000 times in 2004 and approximately 80,000 times in 2005. (These numbers reflect the number of surveys completed, not the number of unique participants.) Over this time period, approximately two-thirds of all participants participated through the mail channel, followed by 23% online and 10% in-home.

Overall, the number of *mail* surveys remained constant between 2004 and 2005; but by utility, SCE, SoCalGas and SDG&E increased the number of mail surveys while PG&E's mail surveys in 2005 fell to just over half the number in 2004.

[27] SoCalGas and PG&E only provided data through November 2005 and all utilities reported estimates only.
[28] SCE numbers do not include marketing costs, according to utility staff.

The number of *in-home* surveys completed increased by about 20%, or 1,400 surveys. This increase is due to the fact that PG&E started up a pilot effort in January of 2005. The number of SCE and SDG&E in-home surveys fell.

The number of *online* surveys increased the most, specifically PG&E online surveys. Between 2004 and 2005, the number of surveys completed through PG&E's online channel more than quadrupled. However, this channel does not track information to identify customers who fill out the survey. Only a zip code is required, so it is difficult to determine the number of unique users.

Based on the available databases, the total numbers of customers served by each HEES channel are shown below. (See Table 5.1-1 and Table 5.1-2.) The figures below also show statewide participation by channel (Figure 5.1-1) and utility-specific participation by channel. (See Figure 5.1-2, Figure 5.1-3, and Figure 5.1-4.) SoCalGas did not provide full PY2005 data, so the numbers in the table reflect participation through July 2005. The sponsors should also note that the 2003 evaluation (published within a month of this report) stated that SCE claimed participants through February 29, 2004 in their 2003 accomplishments. These 835 customers are included in our numbers as well but should be removed from SCE's estimates of program accomplishments in 2004/2005.

For PG&E and SDG&E, all of the surveys include electric recommendations. For PG&E mail, PG&E in-home, and SDG&E mail, we were also able to distinguish the percentage of customers who received gas recommendations. For SDG&E mail, 63% of the 2004 participants and 80% of the 2005 participants also included gas recommendations. For PG&E mail, 35% of 2004 participants and 48% of 2005 participants included gas recommendations. Finally, for PG&E in-home in 2005 (its first year), 66% of participants received gas recommendations. We were not able to easily make this distinction for PG&E online, SDG&E in-home, and SDG&E online because the databases did not include this information.

Table 5.1-1: Total Number of Surveys Completed Through Each HEES Channel[a]

(January 2004 through December 2005[b])

	Mail		Online[c]		In-Home		Total	
	2004	**2005**	**2004**	**2005**	**2004**	**2005**	**2004**	**2005**
PG&E[d]	20,510	11,128	1,800	7,680	N/A	2,559	**22,310**	**21,367**
SCE[e]	17,186	21,017	10,276[f]	12,292[g]	4,314/777 SCE/JOINT	3,595/1,122 SCE/JOINT	**32,553**[h]	**38,026**
SoCalGas[i]	5,015	9,471	729	363	17/777 SoCalGas/JOINT	146/1,122 SoCalGas/JOINT	**6,538**	**11,102**
SDG&E[j]	8,371	9,588	550	613	2,046	1,140	**10,967**	**11,341**
TOTAL[k]	**51,082**	**51,204**	**13,355**	**20,948**	**7,154**	**8,562**	**71,591**	**80,714**

a. Numbers may not represent unique participants. Some participants filled out the survey multiple times through the same channel in the same reporting year (for unique participants see the next table.

b. The number of SoCalGas mail customers reflects participation only through July, 2005 because the new data are not yet available.

c. These numbers only include participants who received recommendations and excludes several customers who accessed the website but did not complete enough information to get recommendations. SoCalGas and SDG&E online does not include Spanish customers.

d. The number of online participants includes four customers whose participation month could not be determined based on the database. Note that there are various levels of completion in the PG&E online survey. Most completed Level 1 and Level 2, while less than 4% completed Level 3. We were not provided with a description of what each level entails and can not provide further analysis based on these levels, thus we present overall numbers in the table above.

e. The SCE in-home database includes all customers who participated jointly through the SCE/SoCalGas in-home survey program in 2004 and 2005. The SCE in-home database also included SoCalGas only in-home survey customers from May 2004 to April 2, 2005. A separate database provided by SoCalGas tracks participants from the middle of April 2005 until the end of the year.

f. 8,460 of the 10,276 participants completed the short-version of this survey.

g. 4,657 out of the 12,292 participants completed the short version of this survey.

h. The sponsors should also note that the 2003 evaluation (published within a month of this report) stated that SCE claimed participants through February 29, 2004 in their 2003 accomplishments. These 835 customers are included in our numbers as well but should be removed from SCE's estimates of program accomplishments in 2004/2005.

i. The SoCalGas online estimates in 2005 only include participants through August because the recent recommendation data are not yet available and online participant estimates only include participants who received recommendations.

j. The SDG&E mail program does not appear to have participants until April 2004.

k. Totals across utilities do not double-count joint SCE and SoCalGas in-home customers.

Table 5.1-2: Total Number Unique Participants Served By HEES Channel[a]
(January 2004 through December 2005[b])

	Mail		Online[c]		In-Home		Total	
	2004	**2005**	**2004**	**2005**	**2004**	**2005**	**2004**	**2005**
PG&E[d]	20,510	11,127	1,786	7,327	N/A	2,559	**22,296**	**21,013**
SCE[e]	17,186	21,003	10,238	12,155	4,311/777 SCE/JOINT	3,594/1,122 SCE/JOINT	**32,512**[f]	**37,874**
SoCalGas[g]	5,014	9,471	729	363	17/777 SoCalGas/JOINT	146/1,122 SoCalGas/JOINT	**6,537**	**11,102**
SDG&E[h]	8,371	9,587	550	613	2,038	1,138	**10,959**	**11,338**
TOTAL[i]	**51,081**	**51,188**	**13,303**	**20,458**	**7,143**	**8,559**	**71,527**	**80,205**

a. Note that these estimates represent unique participants based on account numbers and email addresses. These estimates reflect the number of unique participants by channel and reporting year (see the previous table for estimates including duplicate participants).
b. The number of SoCalGas mail customers reflects participation only through July, 2005 because the new data are not yet available.
c. These numbers only include participants who received recommendations and excludes several customers who accessed the website but did not complete enough information to get recommendations. SoCalGas and SDG&E online does not include Spanish customers.
d. The number of online participants includes four customers whose participation month could not be determined based on the database.
e. The SCE in-home database includes all customers who participated jointly through the SCE/SoCalGas in-home survey program in 2004 and 2005. The SCE in-home database also included SoCalGas only in-home survey customers from May 2004 to April 2, 2005. A separate database provided by SoCalGas tracks participants from the middle of April 2005 until the end of the year.
f. The sponsors should also note that the 2003 evaluation (published within a month of this report) stated that SCE claimed participants through February 29, 2004 in their 2003 accomplishments. These 835 customers are included in our numbers as well but should be removed from SCE's estimates of program accomplishments in 2004/2005.
g. The SoCalGas online estimates in 2005 only include participants through August because the recent recommendation data are not yet available and online participant estimates only include participants who received recommendations.
h. The SDG&E mail program does not appear to have participants until April 2004.
i. Totals across utilities do not double-count joint SCE and SoCalGas in-home customers.

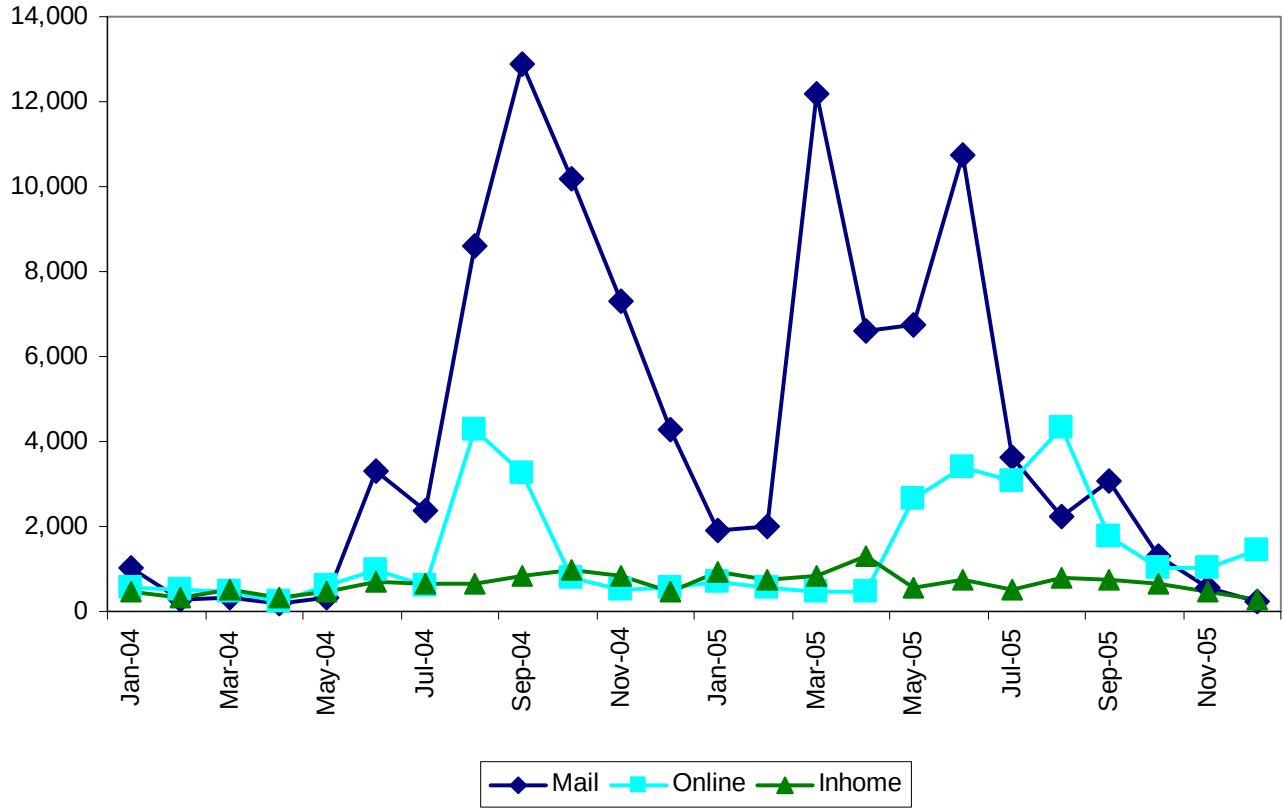
The high participation rate for mail surveys is likely due to the fact that this channel is more widely marketed than other channels and also, in part, because the HEES survey is directly mailed to customers, rather than a marketing piece that then requires the customer to request the survey.[29] Some of the other channels, such as in-home, are targeted at the smaller group of hard-to-reach customers due to costs. (Marketing efforts are described in more detail in the preceding section, Program Structure and Program Delivery.)[30]

Figure 5.1-1 shows the statewide monthly fluctuations in participation by channel. Promotional efforts most likely caused the peaks in participation. SCE administrator comments indicate that there is generally a two-week turn around from the promotional mailing until the surveys are returned, with the biggest spike in responses in the first four to six weeks. Peaks in participation, however, do not appear to directly track to mailings, although mailings are generally followed by

[29] For the final evaluation, we will attempt to look at the results of a direct email campaign versus direct mail; however, this may be difficult if customers are also offered an incentive, such as the $5 Starbucks gift card, since the effect may be due to the incentive more than the direct mail.
[30] Rick Ridge & Associates is looking at indicators of participation in the 2003 HEES evaluation effort.

a rise in the number of participants. In Figure 5.1-2, the dashed lines show SCE's promotional mailings, 31 and the pink circles represent SCE participation rates.[32]

Figure 5.1-1: Statewide Participation by Channel



[31] These are planned rather than actual mailings.

[32] We did not have the mailings, but most likely they also had the web address. The spikes in the number of completed online surveys, however, is more likely due to the mass email promotions (discussed under the marketing section.)

Figure 5.1-2: Mail Participation

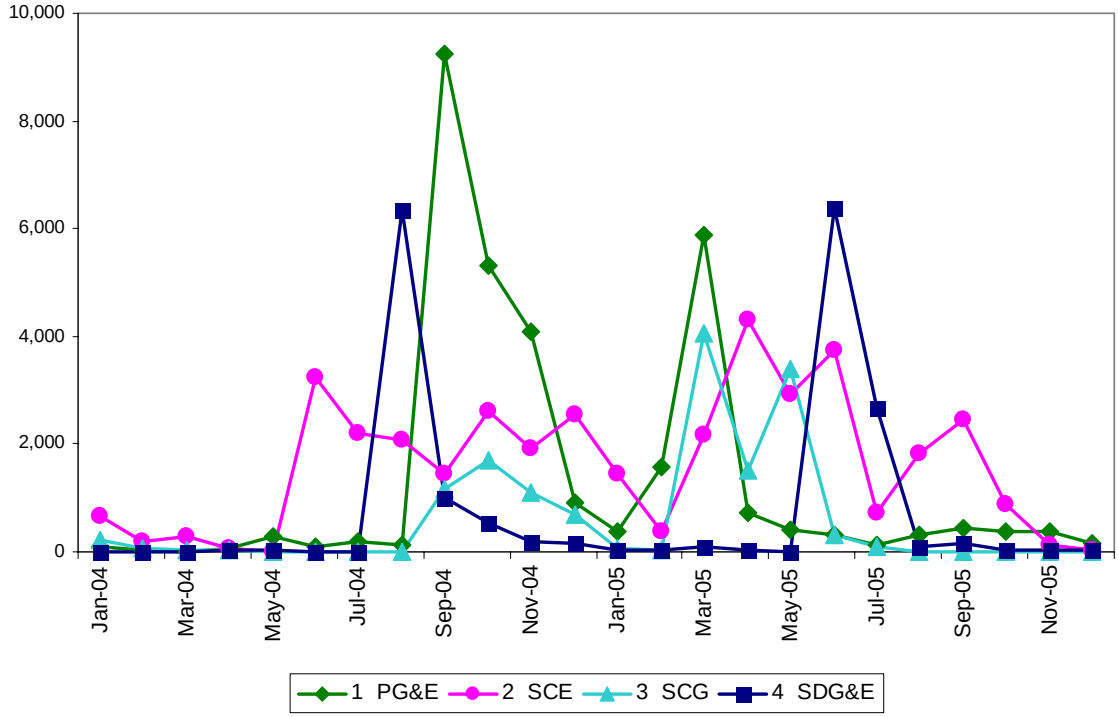


Figure 5.1-3: Online Participation

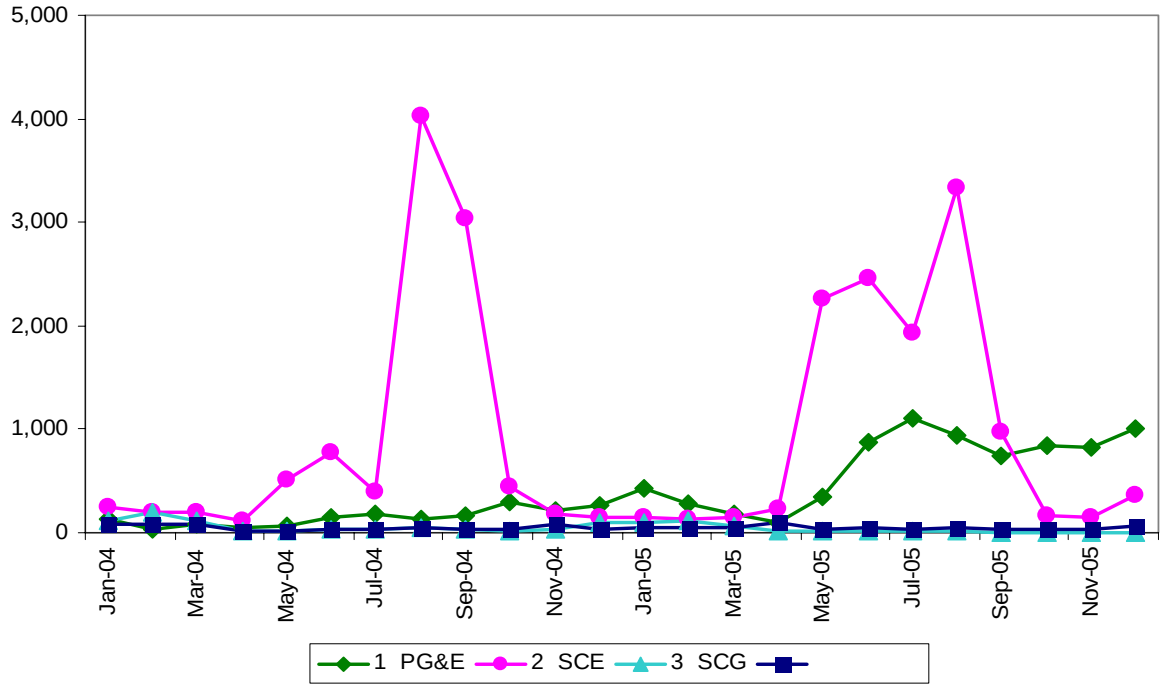
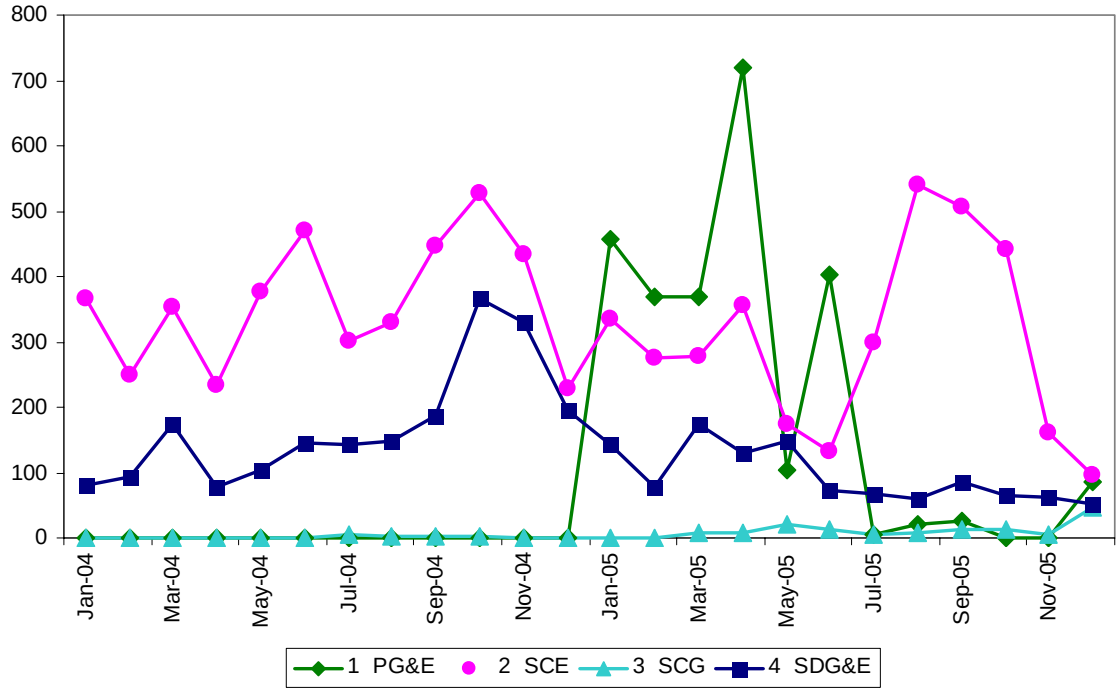


Figure 5.1-4: In-Home Participation



In general, participation appears to have increased between PY2004 and PY2005, with growth of PG&E's in-home pilot as well as concerted efforts to increase online participation. Overall, however, annual numbers are consistent with earlier years.

When we examined participation as a percentage of targeted numbers provided by the utilities (in the latest available workbook for PY2004-2005 or annual reports) we found that all channels met their targeted goal.

When we compared participation as a percentage of the reported numbers provided by the utilities (in the latest available workbook for PY2004-2005 or annual reports), we were able to verify all but one channel. The one exception was PG&E online. The number reported by PG&E includes all customers who viewed the website. This number is approximately correct, but our verified number for this report includes only customers who received at least some recommendations/information from the survey. We did not include customers who visited the site and did not enter enough data to receive some information from the program. PG&E should revisit the definition of a participant for this channel.

Table 5.1-3: Targeted, Reported and Verified By HEES Channel[a]
(January 2004 through December 2005)

	Mail			
	Target	**Verified Target**	**Reported (est.)**	**Verified Reported**
PG&E	24,000	√	28,107 (Nov '05 WB)	√
SCE	27,000	√	37,528 (AR)	√
SoCalGas	12,000	√[b]	5,359[b] (Nov '05 WB)	√
SDG&E	8,000	√	17,962 (Dec '05 WB)	√
	Online			
	Target	**Verified Target**	**Reported (est.)**	**Verified Reported**
PG&E	12,000	√	46,920 (Nov '05 WB)	~20%[c]
SCE	18,000	√	22,360 (AR)	√
SoCalGas	Not reported	na	Not reported	na
SDG&E	700	√	Not reported	na
	In-Home			
	Target	**Verified Target**	**Reported (est.)**	**Verified Reported**
PG&E	500	√	2,649 (Nov '05 WB)	97% verified
SCE	8,000	√	9,473 (AR)	√
SoCalGas	2,000	√	1,045 (Nov '05 WB)	√
SDG&E	3,000	√	3,188 (Dec '05 WB)	√

AR=Annual Report
WB=Workbook

a. Final reported numbers were not available at the time of this report. We placed a check in the verified box whenever the number from the program database equaled at least 99% of those reported by the utility.

b. SoCalGas's November 2005 workbook only reports 5,359 completed mail survey, but may be missing some data. No other source of this information was found, so we report the best available information (at the time of reporting) in the table above. However, as the tables above show, we found that SoCalGas had over 14,000 participants in this two year period, and therefore met their targeted goal.

c. The number claimed by PG&E includes all customers who viewed the website. This number is approximately correct, but verified numbers for this report include only customer that received at least some recommendations/information from the survey.

6. SATISFACTION WITH HEES

Participants choose to participate in HEES primarily to save money on their energy bills or for related reasons, such as learning how they can improve their home's energy efficiency and/or reduce their energy consumption. This section explores the extent to which HEES meets participant expectations, which parts are most valuable, and customer suggestions for improving the format and content in the future.

Table 6.0-1: Participant Expectations of HEES (multiple response)

Process survey Q4: What did you hope to accomplish?	Total (n=1045)	In-Home (n=242)	Mail (n=242)	Online (n=561)
Save money on energy/electric/gas bill	67%	62%^	50%	76%^#
Learn how you could improve your home's energy efficiency	38%	20%	29%#	49%^#
Reduce energy consumption	37%	28%^	21%	48%^#
Make your home more comfortable	11%	2%	4%	17%^#
Improve the environment – cleaner air, etc.	9%	2%	1%	16%^#
Find out how effectively I'm saving energy	2%	1%	3%μ	1%
Receive incentive – new thermostat, free light bulbs	1%	3%μ	--	1%
Check the meter reading (believed the meter was read wrong)	<1%	2%μ	--	<1%

^ Significantly different from mail group.
# Significantly different from in-home group.
μ Significantly higher from on-line group.

Overall, most participants are satisfied with the program. Generally, the program appears to meet participant expectations.

6.1. Overall Satisfaction with HEES

Forty-six percent of all participants with whom we spoke said they were *very satisfied*, and an additional 41% were *somewhat satisfied* with the program overall.

As shown in Table 6.1-1 below, in-home participants were significantly more likely to say they were very satisfied than their mail or online counterparts, possibly due to the personal contact they had with HEES auditors. The fact that in-home participants are significantly more satisfied than other channel participants needs to be weighed against program costs. (While in-home participation is more costly than participation online or by mail, the value may outweigh the costs.)

Online participants, although generally satisfied, are not nearly as satisfied as participants in the other channels. Those few online participants who expressed dissatisfaction said that the information from the report was not helpful or that it did not meet expectations.[33]

[33] Only one online participant complained that she could have found the information on other websites.

Table 6.1-1: Overall Participant Satisfaction with HEES

satisfied are you with the HEES program?	Total (n=1045)	Mail (n=242)	In-Home (n=242)	Online (n=561)
Very satisfied	46%	45%	69%^	37%
Somewhat satisfied	41%	45%	23%^	47%
Neither satisfied nor dissatisfied	4%	3%	--	6%
Somewhat dissatisfied	5%	4%	5%	5%
Very dissatisfied	2%	2%	1%	2%
(Don't know)	3%	2%	2%	3%

^ Significantly different from the mail and online group.

.

The higher level of satisfaction among in-home participants is also apparent in the responses to the more detailed questions about satisfaction with the survey described below.

6.2. Customer Satisfaction with Input: The HEES Survey

Almost all customers seem to be satisfied with the HEES survey (i.e., the questionnaire or form that they or the auditor filled out about their home). Most participants feel that it was easy to follow, of reasonable length, and asked the right questions, etc. (See Table 6.2-1.) In addition, 60% of customers state that they would recommend this survey to others.

The specific delivery mechanism, however, does have an impact on customer satisfaction. Again, in-home customers are significantly more likely to be very satisfied than are their mail and online counterparts about the length of time, the depth of questions, and whether they would recommend participating to others. In fact, whereas slightly more than one-half of mail and online participants said they would strongly recommend this program to others, 81% of in-home customers said they would strongly recommend the program. In-home customers were also very satisfied with the auditor who conducted the survey and the scheduling process, although it is possible that their level of satisfaction with the survey format is higher because of a positive interaction with the HEES auditor and/or because the in-home effort targets a particular type of customer—generally HTR customers for most of the utilities.

Participants state the primary improvement that could be made to the survey would be to refine the questions so that they lead to even more customized recommendations. There is, however, a tradeoff between creating a more customized report and the length of the survey. Yet, since only 39% to 45% of participants in the mail and online channels felt that the survey asked the right questions to result in customized information, and with almost everyone feeling that the amount of time it took them to complete the survey was reasonable, it may be feasible to add questions to yield better recommendations. (Additional questions about what customers have already done, i.e., energy efficient actions taken, would provide better results for customers.)

Table 6.2-1: Satisfaction with the Survey
(percent that agreed with the following statements)

Process survey Q9a-Q9f: Agreement with statement	Total (n=1045)	Mail (n=242)	In-Home (n=242)	Online (n=561)
Questions were easy to follow and answer				
Strongly agree	71%	69%	81%^μ	67%
Somewhat agree	24%	26%#	14%	26%
Disagree (somewhat, strongly)	3%	3%	2%	4%
Amount of time to complete survey was reasonable				
Strongly agree	64%	59%	79%^μ	60%
Somewhat agree	29%	37%#μ	17%	30%#
Disagree (somewhat, strongly)	5%	3%	2%	5%#
I would recommend this survey to others				
Strongly agree	60%	54%	81%^μ	54%
Somewhat agree	28%	35%#	12%	32%#
Disagree (somewhat, strongly)	7%	9%	6%	6%
Survey asked the right questions to provide customized information				
Strongly agree	47%	45%	66%^μ	39%
Somewhat agree	38%	44%#	26%	41%#
Disagree (somewhat, strongly)	10%	10%#	5%	12%#
Auditor was courteous and knowledgeable [a]				
Strongly agree	--	--	83%	--
Somewhat agree	--	--	12%	--
Disagree (somewhat, strongly)	--	--	3%	--
Audit was scheduled quickly and at my convenience [a]				
Strongly agree	--	--	80%	--
Somewhat agree	--	--	14%	--
Disagree (somewhat, strongly)	--	--	4%	--

a. Only asked of in-home participants.
^ Significantly different from mail group.
# Significantly different from in-home group.
μ Significantly different from on-line group.

Only a very small percentage of the respondents that we spoke with disagreed with our statements listed above. Reasons given by these customers included impressions that the report was too general or not very helpful, or that it did not meet customers' expectations or solve their problems. A couple of in-home participants also complained that the auditor was not knowledgeable. Note that this represents a very small percentage of all HEES participants. As shown in the table above, the large majority of participants strongly agreed with the statements above.[34]

[34] We provide these comments here because they are the only comments available and may provide insight into both those who disagree and those who "somewhat agree." Note that we did not follow up with those who "somewhat" but not "strongly" agree. In future research in California, we recommend following up with these customers to understand these issues further.

6.3. Customer Satisfaction with Outputs: The HEES Energy Report

In all, about 77% of participants read the report. Fifty-seven percent of participants said they thoroughly read the report, and 20% read some portions of it. In addition, another 10% just glance through it. (See Table 6.3-1.) Mail respondents are significantly more likely than online participants to thoroughly read the report.

Table 6.3-1: Readership of Energy Report

Process survey Q11: Would you say that you…?	Total (n=1045)	Mail (n=242)	In-Home (n=242)	Online (n=561)
Read the report thoroughly	57%	62%$^{\mu}$	59%	53%
Read some portions of the report	20%	16%	16%	24%$^{\wedge\#}$
Just glance through it	10%	10%	10%	11%
Do not read the report at all	2%	2%	2%	1%
Do not recall receiving the report	11%	11%	13%	11%

^ Significantly different from the mail group.
$^{\#}$ Significantly different from the in-home group.
$^{\mu}$ Significantly different from the on-line group.

Most customers perceive that the format and actual delivery of the energy report is trouble-free. However, customers are less confident about the relevance and accuracy of the recommendations and information. Almost all customers agreed that the energy report was delivered in a timely manner and that it was easy to understand. To improve the energy report, customers suggested strengthening the recommendations and tailoring the report to individual homes and needs. Customers also felt that some of the dollar savings that the energy report claimed customers would experience if they adopted the recommendations were not entirely believable. Administrators could find that customer confidence in the savings estimates will increase with more customized reports.

Table 6.3-2: Satisfaction with the Energy Report
(reported out of those who were asked since not all variations of the energy report are the same)

Process survey Q13a-Q13c, Q13f: Agreement with statement	Total (n=909)	Mail (n=211)	In-Home (n=205)	Online (n=493)
Energy report was delivered in a timely manner[a]				
Strongly agree	65%	59%	78%^	--
Somewhat agree	26%	30%#	15%	--
Disagree (somewhat, strongly)	6%	7%	8%	--
Energy report was easy to understand				
Strongly agree	65%	65%	80%^μ	59%ψ
Somewhat agree	30%	31%#	19%	35%#*
Disagree (somewhat, strongly)	3%	2%	--	3%
Recommendations in the energy report were relevant				
Strongly agree	43%	41%μ	65%^μ	34%σ
Somewhat agree	40%	45%#	27%	44%#φ
Disagree (somewhat, strongly)	14%	12%#	6%	17%^#
Energy report claims of $$ savings from recommendations were believable[b]				
Strongly agree	36%	33%	50%^μ	34%ϖ
Somewhat agree	43%	45%	37%	44%
Disagree (somewhat, strongly)	14%	14%	8%	13%

a. Not asked of SCE/SDG&E or SoCalGas in-home participants. Total n=293; In-Home n=82
b. Not asked of SCE/SDG&E or SoCalGas in-home participants since they do not indicate $$ savings. Total n=786; In-home n=82
^ Significantly different from the mail group.
# Significantly different from the in-home group.
μ Significantly different from the on-line group.
ψOnline phone survey findings (72% strongly agree) are significantly different from the online Internet survey findings (54% strongly agree).
σOnline phone survey findings (43% strongly agree) are significantly different from the online Internet survey findings (31% strongly agree).
*Online Internet survey findings (42% somewhat agree) are significantly different from online phone survey findings (22% somewhat agree).
φ Online Internet survey findings (48% somewhat agree) are significantly different from online phone survey findings (23% somewhat agree).
ϖ Online phone survey findings (40% strongly agree) are significantly different from the online Internet survey findings (32% strongly agree).

6.4. Usefulness of Energy Report Components

When asked about various components of HEES, participants felt that the most useful type of information offered by the energy report are the tips on how to save energy, information on where to get rebates, and information on how much could be saved—all things that are currently provided by most forms of the energy report. Many participants also feel that free CFLs, information on the amount of energy used by their appliances, information on how to evaluate energy saving claims of products, and the graphs or charts of annual energy usage are very useful.

Notably, all customers think that free compact fluorescent bulbs would be helpful, with more than half in agreement.

Our general population survey results also show that customers think that receiving free compact fluorescent bulbs would be more helpful than any other type of information or resource, and would help them save and take energy efficiency actions. On a scale of 1 to 10, where 10 is very helpful, 52% thought a tangible action they could take, installing a light bulb, merited a 9 or 10. The general population is also interested in savings information achieved by specific actions, including customized lists of energy saving tips, rebate information, or information to check the reliability of energy-efficient products. As with participants, very few respondents in the general population were interested in contractor or vendor information.

As shown in the table, participants are significantly more likely than the general population to feel that a list of energy savings tips specific to their home, information on where to get rebates, a list of the amount of energy used by appliance, a chart of their annual energy usage, ongoing communications from the utility for tips on energy efficiency, recommendations on how to save on their gas bill and an energy use comparison are very helpful.

Table 6.4-1: Participant and General Population Perceptions of Current and Possible Future Components of HEES

(Components Not Offered At the Time of Our Survey Are in *Italics*)

Process survey Q31a-Q31l and Q15a-Q15l general population survey: On a scale of 1 to 10 where 1 is not at all helpful and 10 is extremely helpful how helpful is/are…	**PARTICIPANTS (n=1045)[a]**		**GENERAL POPULATION (n=301)**	
	Mean	**Top Two Ratings (9 or 10)**	**Mean**	**Top Two Ratings (9 or 10)**
List of energy saving tips specific to your home	8.5*	60%*	7.8	48%
Information on where to get rebates	8.2*	60%*	7.3	44%
Information on the $ savings you could achieve by taking specific actions	8.3*	58%	7.8	50%
Information to evaluate claims	8.1*	49%	7.6	43%
Free CFLs (although some in-home and special promos did receive)	8.0	53%	7.8	52%
List of the amount of energy your appliances use	8.0*	50%*	7.3	39%
Graph or chart of your annual energy usage	7.9*	48%*	6.8	33%
Ongoing communications from utility for tips and updated energy efficiency information	7.7*	42%*	6.7	30%
Recommendations on how to save on your gas bill	7.6*	45%*	7.3	37%
Water saving recommendations	7.2*	37%	6.9	36%
Energy use comparison to similar households	7.3*	39%*	6.0	24%
Contractor/Vendor information	6.0*	21%	5.5	18%

*Significantly greater than general population comparison group.

[a]. The number of respondents varies because of variations between channels.

In addition to these tools, a handful of customers also suggested that information on new products or technology or financial incentives or discounts would be valuable.

Through comments, some customers also suggested that HEES could provide a graphical comparison of what the bill could be before and after the improvements and energy usage information by appliance.

When we asked participants what additional information they would want to receive from the energy report most did not think that anything was lacking, but some respondents suggested providing information on energy saving possibilities and solar or alternative energy and providing a more comprehensive report showing how make changes. Some participants also wanted discounts and subsidized upgrading, which could be addressed by partnering HEES with other programs that offer financial incentives.

Overall, it appears that the energy report would benefit from even more specific recommendations. Customers want information that takes into account their personal situation (although only 14% of participants who had read the energy report disagreed that it provided recommendations relevant to their home, and felt that it did not factor in each household's particular situation or the customers' lifestyle when providing recommendations). A few renters felt the energy report lacked solutions that renters could implement. One way to make the report more customized would be to ask for more information about the various appliances and/or about actions already taken by the customer.

We explore the specific recommendations made in the energy reports in the next section, and adoption of these recommendations in a following section of this report.

6.5. Overview of Drivers of Satisfaction

Although very few were dissatisfied (that is, stating that they were somewhat or strongly dissatisfied), dissatisfaction was primarily because the information wasn't helpful and/or the report did not meet expectations (as indicated by both responses about the overall satisfaction, and individual components of the survey and report.)

The primary driver of satisfaction appears to be the delivery mechanism that the customer used to participate in the program, with participants who participated through the in-home survey (69% very satisfied) being significantly more satisfied than those who participated by mail (45%) or online (37%). Those who participated online were the least satisfied (significantly less satisfied than mail). Again, this could be due to the fact that online participation requires less buy-in (and provides less accurate results) than mail or in-home participation. Some 2004-2005 participants complete only a short list of questions, and due to this, get back less customized results. (For example, for SCE, 58% of the 2004-2005 participants only filled out the short version of the survey, which is less detailed.)

When we compared participants who were "very satisfied" with the program to those who were only "somewhat satisfied" with the program to look for additional insights to the various levels of satisfaction, notably, those participants who were "very satisfied" with the program overall were more likely to indicate a high level of satisfaction with all aspects of both the HEES survey and HEES energy report (that is, when asked about 16 components of the survey and report, they were more likely to strongly agree with all of the questions.) They were also more likely to

indicate that the various components of the report were "very useful" and to have higher levels of satisfaction with their utility before and after HEES. While these things are related, we believe that many of the "somewhat satisfied" folks are not indicating any level of dissatisfaction with the program, rather they are indicating a level of disinterest. They may not be passionate enough about the program to be "very satisfied". Many times, a "somewhat satisfied" rating indicates a level of passivity rather than discontent.—particularly regarding a subject that a customer does not often consider.

We did find, however, that "somewhat satisfied" customers were more likely to feel that they could find energy saving information if the Home Energy survey did not exist. They were also more likely to feel that they had taken most of the recommended actions prior to participating in HEES.

Table 6.5-1: Differences Between "Very" and "Somewhat" Satisfied Participants

	Very Satisfied Participants	Somewhat Satisfied Participants
If the Home Energy Survey program did not exist, I could still easily find this kind of information		
Strongly disagree	22%*	12%
Somewhat disagree	32%	29%
Somewhat agree	26%	36%*
Strongly agree	15%	15%
Prior to receiving this report, would you say that you…		
Had taken most of the rec. actions	26%	31%*
Had taken about half of the rec. actions	32%	33%
Had taken only one or two of the actions	28%*	22%
Had taken none of the actions	11%	9%

*Significantly greater than comparison group.

There were no differences in what these two groups of customers hoped to accomplish through the HEES program, but those who were somewhat satisfied were less likely to read the report than those who were very satisfied. (We cannot determine, however, whether their level of satisfaction was the reason why they didn't read the report, or whether—because they didn't read the report as closely—they were less satisfied.)

Only one demographic difference was noted between the two groups (i.e., very satisfied and somewhat satisfied customers). Customers who were only "somewhat satisfied" were more likely to be Caucasian than those who were "very satisfied" with HEES (75% compared to 64%), but the majority of both groups were Caucasian. (Note that since the in-home channel serves hard-to-reach customers, they are less likely to be of Caucasian descent, so again, satisfaction is more likely due to the channel than ethnicity.)

7. A COMPARISON OF RECOMMENDATIONS BY CHANNEL

We analyzed the program databases for each utility to understand what type of recommendations customers receive in the energy report. In all, there are eight different lists of recommendations, each with its own coding system that does not match the other lists. Thus, even within the mail version, there are four different lists of recommendations that are difficult to reconcile for evaluation purposes. While one of the strengths of this statewide program is that its development allowed for utility-specific recommendations, it appears to be slow to learn from best practices within the various channels of this program. This section presents our findings from our comparison of recommendations across channels.

7.1. Number, Type, and Characterization of HEES Recommendations

In aggregate, the program recommends 235 unique actions in the various energy reports.[35] Some recommendations are similar to others, but are counted as unique because of the slight differences (e.g., “repair leaky faucets and pipes” versus “repair leaky tanks, pipes, and faucets”, or “replace your central air conditioner” versus “replace your air conditioner with an energy efficient one”). For purposes of analysis, we grouped these similar, but not identical, recommendations into a single “characterization.” Grouping similar variations into characterizations (e.g., “replace your central air conditioner” and “replace your air conditioner with an energy efficient one”) across all of the databases results in a total of 110 characterizations. The 235 recommendations and 110 characterizations fall into 16 recommendation “types.” (See Table 7.1-1 below).

[35] Our analysis does not include the SDG&E in-home survey because the program databases lacked the necessary information.

Table 7.1-1: Recommendations and Characterizations by Type

Type	Number of Recommendations	Number of Characterizations
Cooking	4	3
Cooling	26	15
Dishwasher	6	4
Ducts/Pipes	7	5
Home Electronics	5	1
Insulation	22	9
Laundry	22	9
Lighting	11	4
Other	10	9
Pool/Spa	17	8
Refrigerator/Freezer	30	10
Space heating	36	15
Water heating	20	8
Water use	5	2
Waterbed	6	5
Windows and doors	8	3
Total	**235**	**110**

We also categorized the recommendations as one of the following:

- *Practice*: A change in behavior
- *Measure*: Requires installing equipment
- *Other*: Requires hiring a contractor for help or doesn't fit into the other categories
- *Not applicable*: Provides information about another program offered by the utility

Overall, there are roughly equal numbers of both measure (97) and practice (108) recommendations.

Table 7.1-2: Category of Recommendations Found in Energy Reports

Category	Number of Recommendations	Number of Characterizations[a]
Practice	108	54
Measure	97	40
Other	23	10
Not applicable	7	7
TOTAL	**235**	**110**

a. We grouped similar recommendations into characterizations for the purposes of analysis.

The top 30 recommendations made by HEES are shown in the table below. "Use compact fluorescent bulbs" is most frequently mentioned, recommended in approximately 71% of all energy reports.

Table 7.1-3: Top 30 Recommendations Made by HEES

Type	Recommendation	Number of Times Recommended in 2004 and 2005	Percentage of Reports That Included Recommendation[a]
Lighting	Use compact fluorescent bulbs	105,490	71%
Insulation	Seal air leaks and install weatherstripping	99,710	67%
Cooling	Have ducts tested for leakage, seal ducts, clean or replace dirty air conditioner filters, shade windows, and avoid using appliances at the hottest times of the day	66,424	45%
Laundry	Replace washer/dryer	44,413	30%
Space Heating	Lower heater temperature setting	39,748	27%
Water Use	Install energy efficient shower heads/faucet aerators	36,677	25%
Other	Look for ENERGY STAR® labeled products which use less energy than other traditional products	33,982	23%
Other	Contact the utility about an alternative pricing plan for low income customers	33,982	23%
Other	Contact the utility to find out more about the balanced payment plan (BPP)[b]	33,982	23%
Refrigerator/ Freezer	Remove secondary refrigerator/freezer	33,944	23%
Water Heating	Lower water temperature	32,438	22%
Cooling	Install whole house fan	29,083	20%
Cooling	Raise AC temperature setting	27,475	19%
Refrigerator/ Freezer	Adjust temperature	26,367	18%
Laundry	Use cooler water	24,648	17%
Space Heating	Have ducts tested for leakage, seal ducts, clean or replace dirty filters, shade windows, and avoid using appliances at the hottest times of the day	21,470	14%
Refrigerator/ Freezer	Replace refrigerator/freezer	20,943	14%
Other	Participate in 20/20 program (added in May 2005)	20,855	14%
Space Heating	Remove or cover window AC	15,430	10%
Insulation	Insulate your home's attic	14,978	10%
Windows and Doors	Weatherize doors/windows	14,470	10%
Pool/Spa	Replace pool pump motor	13,930	9%
Cooling	Replace or install evaporative cooler	11,556	8%
Laundry	Wash/dry full loads	10,357	7%
Refrigerator/ Freezer	Turn off refrigerator/freezer	9,759	7%
Water Heating	Insulate pipes	9,684	7%
Windows and Doors	Install solar screening	9,036	6%
Home Electronics	Turn off home electronics	8,866	6%
Refrigerator/ Freezer	Clean coils	8,494	6%
Lighting	Install timer	8,102	5%

a. Calculated by dividing the number of times recommendations were made by 148,286 surveys/reports that provided us with data on recommendations.
b. As one utility reviewer pointed out, inquiry about the balanced payment plan may work against conservation actions.

7.2. Further Analysis of Recommendations

We conducted an in-depth analysis of the recommendations to look at the similarities and differences between the various versions of the HEES survey. A sample of our full analysis (for cooling recommendations only) is shown in the table below. (See Appendix X for the full table.). A modified version of the table below (with the actual code number for each of the

different lists) is also available upon request to help with future evaluations and/or streamlining program implementation.

Table 7.2-1: "Sample" of Unique HEES Recommendations and Similarities/Differences Between Versions of the HEES Survey—Cooling Recommendations Only

Recommendation Type	Characterization	Recommendation or Description of Measure (Unique Measures)	Measure, Practice, or Other (M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE/ SoCal In-Home	SoCal Mail	SDG&E Mail	SDG&E/ SoCal Online	Count of Channels with Character-ization
Cooling	Replace central AC	**Replace** your existing air conditioning system with a new high-efficiency system with a SEER (Seasonal Energy Efficiency Rating) of **12** or higher.	M								X	6
		Replace your central air conditioner	M		X							
		Replace your air conditioner with a higher efficiency model	M	X		X	X			X		
	Replace room AC	**Replace** your room air conditioner	M		X							2
		Replace your old window or wall air conditioner(s) with a unit with an EER (Energy Efficiency Rating) of **11** or higher.	M								X	
	Replace or install evaporative cooler	**Replace** your evaporative cooler with a higher efficiency model	M			X	X					3
		Install an evaporative cooler to supplement your central air conditioning	M	X								
	Install whole house fan	**Install** a whole house fan to supplement your central air conditioning	M	X		X	X			X		4
	Install vents	**Install** vents in attic	M					X				1
	Maintain AC	**Clean** or **replace** dirty air conditioner filters	P					X				2
		Regularly **maintain** central air conditioner	O		X							
		Regularly **maintain** room air conditioner	O		X							
	Shade windows	**Shade** window areas from direct sunlight	P					X				1
	Use programmable thermostat	Use a **programmable** or **clock thermostat** to raise the temperature when you are at work or away from the home	P								X	1

Recommendation Type	Characterization	Recommendation or Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	Channel								Count of Channels with Character-ization
				PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE/ SoCal In-Home	Mail	SDG&E Mail	SDG&E/ SoCal Online	
Cooling (cont.)	Raise AC temperature setting	**Raise** your air conditioner's temperature setting and keep it at 78°F or higher	P			X	X	X		X		6
		Raise your air conditioner's temperature setting to 78°F or higher when you are home and to 85°F or turn it off when your home is unoccupied for a short period of time	P	X								
		Raise the temperature setting of room air conditioner	P		X							
	Raise thermostat setting and use ceiling fan	**Raise** your thermostat setting and consider **using** ceiling fans	P		X							1
	Use whole house fans	Use your **whole house fan** more	P		X							2
		Use portable or **whole house fans** when possible	P					X				
	Use outside air	Use **outside air** for cooling when possible	P					X				1
	Reduce use of appliances during day	**Reduce use** of heat generating appliances during the day	P					X				1
	Turn off AC	**Turn off** air conditioner when away for extended periods	P					X				1
	Cooling grouped recommendations	Have your **ducts tested** for leakage, **seal your ducts**, **clean** or **replace** your dirty air conditioner filters, **shade** your windows, and **avoid using** your appliances at the hottest times of the day	P	X								4
		Clean or **replace** your dirty air conditioner filters, **shade** your windows, and **avoid using** your appliances at the hottest times of the day	P	X						X		
		Clean or **replace** your dirty air conditioner filters, **shade** your windows, and **avoid using** your appliances at the hottest times of the day, if its time to **replace** your air conditioning unit choose the most energy-efficient model you can	P			X	X					

Interestingly, while the recommendations of different versions of the program overlap some, they also differ considerably. (See last column where some recommendations are included in six of the eight lists shown in Table 4, but others are only included in one list.) As such, it is possible for the same customer to complete both the mail and online surveys and to receive two different sets of recommendations.

Due to differences in geography and the socioeconomic characteristics of customers, it makes sense for the recommendations to vary slightly by utility; but it is less clear why the recommendations vary by delivery mechanism. Some differences between the channels are understandable given that the in-home survey includes a unique way of interacting with customers; however, we would expect that variations would occur in the method of making the recommendations and not in the recommendations themselves.

Based upon our extensive review of the HEES recommendations, it is clear that different channels emphasize and promote different recommendations. It is also clear that channels do not coordinate changes to their programs. For example, in 2005, SCE added a recommendation to encourage customers to participate in the 20/20 program. Both SCE mail and SCE online customers were given this information. Despite the fact that Kema-Xenergy supports all of the mail programs, and the fact that the 20/20 program was offered statewide in 2005, this recommendation was **only** added to the SCE list of HEES recommendations.

In Table 7.2-2, Table 7.2-3 and Table 7.2-4 below, we describe the mean number of measures and practices recommended by utility and delivery mechanism. These numbers range from 12 through the SoCalGas mail channel, to 73 for the PG&E online channel. Again, differences between SoCalGas (a gas-only utility) and PG&E (both gas and electric) is understandable, but it is less clear why the number of recommendations would range from 12 to 67 for SoCalGas, depending on the delivery mechanism. Even when we grouped similar recommendations, we found from seven to 61 characterizations.

Our analysis did not include information linking the number of recommendations made to the satisfaction of participants. The data that we reviewed does not show an apparent link since satisfaction is highest for in-home, but lowest for online; while the number of recommendations is lower for mail than for online. The relevance of the recommendations appears to be a more important driver of satisfaction than the number of recommendations; however, the utilities may want to consider studying this more in future efforts.

Table 7.2-2: Number of Unique Recommendations and Characterizations in 2004 and 2005 by Channel

Utility	Delivery Mechanism	Number of Unique Recommendations	Number of Unique Characterizations
SCE	In-Home	67	61
SoCalGas	In-Home	67	61
PG&E	Online	73	52
PG&E	Mail	59	35
PG&E	In-Home	59	35
SCE	Mail	38	30
SDG&E	Mail	38	22
SCE	Online	38	28
SoCalGas	Online	35	29
SDG&E	Online	35	29
SoCalGas	Mail	12	7
SDG&E	In-Home	n/a	n/a

In general, the number of recommendations that each HEES participant receives varies widely, from an average of four recommendations for SCE or SDG&E mail participants to over 18 recommendations for SCE or SoCalGas in-home participants. (Table 7.2-3.) In general, HEES participants receive an average of seven recommendations, some measures, some practices, and some classified as other. (Table 7.2-4.)

Table 7.2-3: Mean Number of Recommendations in 2004 and 2005 (and standard deviations) by Channel

Utility	Mean Number of Measures	Mean Number of Practices	Mean Number of Other Recs	Mean Number of N/A Recs	Overall Mean Number of Recommendations	Overall Median Number of Recommendations
PG&E mail	4.3 *(1.8)*	2.1 *(1.1)*	0.5 *(0.6)*	3.1 *(0.2)*	10.0 *(2.5)*	10
SCE mail	2.6 *(1.2)*	1.5 *(0.9)*	0.4 *(0.5)*	0.3 *(0.5)*	4.8 *(1.9)*	5
SoCalGas mail[a]	0.7 *(0.7)*	2.0 *(0.8)*	0.0	0.0	2.7 *(1.1)*	3
SDG&E mail[b]	2.4 *(1.4)*	1.9 *(1.7)*	0.0	0.0	4.3 *(2.6)*	3
PG&E online	8.0 *(5.3)*	5.3 *(4.7)*	1.4 *(1.5)*	0.0	14.8 *(10.7)*	11
SCE online	2.4 *(1.1)*	1.1 *(0.8)*	0.2 *(0.4)*	0.7 *(0.9)*	4.5 *(1.8)*	4
SoCalGas online[c]	6.0 *(1.8)*	3.0 *(1.5)*	0.9 *(0.6)*	0.0	9.9 *(2.6)*	10
SDG&E online	6.0 *(2.0)*	3.3 *(1.6)*	0.9 *(0.6)*	0.0	10.2 *(2.8)*	10
PG&E in-home[d]	3.8 *(1.6)*	2.3 *(1.1)*	0.2 *(0.4)*	3.0 *(0.1)*	9.3 *(2.3)*	9
SCE in-home[e]	4.3 *(2.7)*	11.6 *(6.7)*	2.2 *(0.8)*	0.0	18.2 *(8.6)*	16
SoCalGas in-home[e,f]	4.4 *(2.9)*	11.6 *(7.1)*	2.2 *(0.8)*	0.0	18.2 *(9.2)*	16
SDG&E in-home[g]	--	--	--	--	--	--

a. Reflects recommendations made through July 2005 because the new data are not yet available.
b. This program started in April 2004.
c. Reflects recommendations made through August 2005 because the new data are not yet available.
d. This pilot program started in 2005.
e. This estimate reflects all recommendations made jointly through the SCE/SoCalGas in-home survey programs.
f. The SCE in-home database includes SoCalGas only in-home survey participants from May 2004 to April 2, 2005. This estimate reflects all recommendations made jointly with SCE and made by SoCalGas during the timeframe for which we have data from the SCE database. This estimate does not reflect recommendations made after April 2, 2005 because the new data are not yet available.
g. SDG&E's records do not include information on recommendations made during in-home surveys.

Table 7.2-4: Overall Mean Number of Recommendations in 2004 and 2005 (and standard deviations)--All Channels[a]

Recommendations	Overall Mean Number of Recommendations
All categories	7.3 *(5.9)*
Practices	2.6 *(3.5)*
Measures	3.3 *(2.6)*
Other	0.5 *(0.8)*
Not applicable	0.9 *(1.3)*

8. THE ROLE OF HEES

This section and the next section begin to look at the program's four assumptions:

1. Customers lack complete energy efficiency knowledge
2. HEES fills the knowledge gap
3. Knowledge engenders action
4. HEES plays a substantial, unique informational role

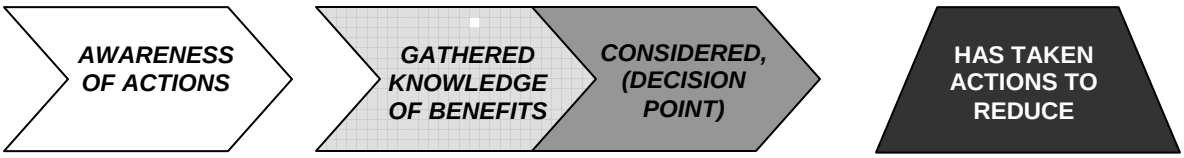
In particular, this section focuses on the first assumption, the need for HEES, and its role in the market. Below we look at the current level of awareness of energy efficiency and whether there is a lack of complete energy efficiency knowledge.

HEES disseminates customized energy efficiency information to residential customers to help customers understand their home's energy usage as well as to provide them with suggestions to control and reduce their energy use. In gauging the program's effectiveness, it is important to understand the customers' level of awareness regarding energy efficiency measures and practices. The various levels of awareness can be described as a continuum, starting from awareness of possible actions to be undertaken to actually taking actions to reducing energy usage. Understanding where customers fall on this continuum (i.e., how much a customer already knows and where they are on the path to adoption), will help answer whether there is a need for the type of information the HEES program provides.

8.1. Where Customers Fall on Awareness-Action Continuum

The awareness-action continuum is essentially comprised of four phases: became aware of actions, gathered knowledge of benefits, considered taking actions (reached a decision point), and took actions to reduce energy usage. Telephone interviews with the general population and with program participants were geared to placing customers on this continuum, with program participants being asked about their awareness or actions *prior* to participating in the HEES program.

Figure 8.1-1: The Awareness-Action Continuum
For Information on Energy Efficiency/Energy Efficiency Measures and Practices
General Population v. Participants (Prior to HEES Participation)



Unlike some of the more targeted programs that work to get customers to update or replace a particular piece of equipment in their home, HEES is an information program that seeks to provide a wide variety of information to customers. As such, it is difficult to assess the influence because most California IOU customers have at least some level of understanding of energy issues (particularly in relationship to their home and budget) following the California Energy

Crisis. Thus, the awareness action continuum can be a bit misleading (unless you created a continuum for each of the 110 types of recommendations), since it does not show customers' *depth* of knowledge.

General Population[36]

Using the continuum above where energy efficiency actions are amassed, more than two-thirds of the general population indicated that they have taken actions to reduce their energy consumption. (See Figure 8.1-2.) Only a small percentage of the total population has not taken some energy efficiency action. In the general population survey, 22% of respondents said they were not aware of any specific actions they could take to reduce their energy usage. Five percent were aware but had not reached a decision point (only 1% had gathered some information and 4% had not); and another 5% were aware and considered taking action but had not yet done so (2% had gathered information and 3% had not).

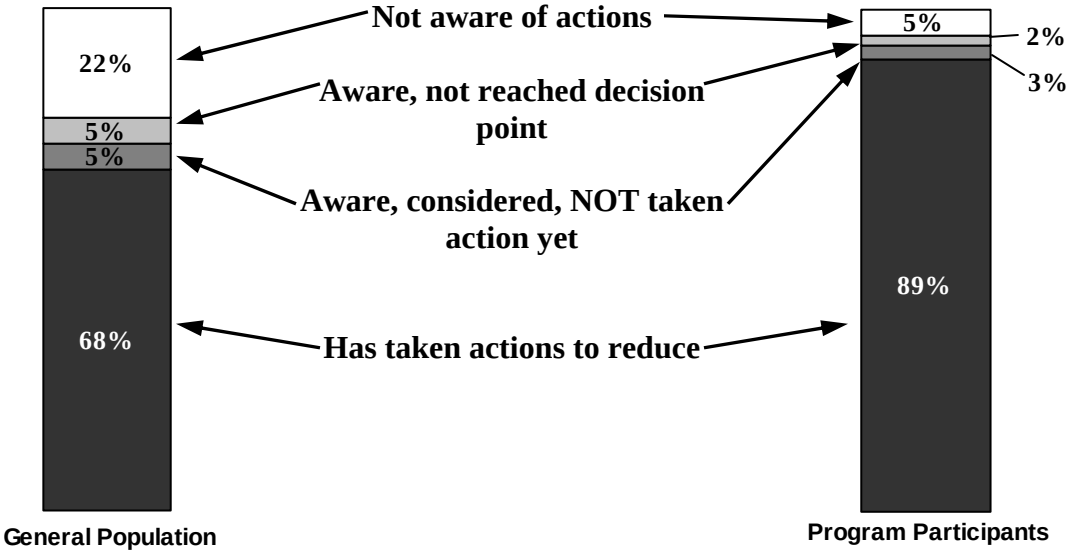
Participants

When we compared responses from HEES participants to the general population, it appears that HEES participants are significantly more likely than an average customer to have already taken some type of energy efficiency action. This indicates that they could be predisposed to a higher awareness and understanding level, and have a greater willingness to taking actions to reduce their energy consumption than non-participants. Nine out of ten participants said they had already taken some energy efficiency action prior to enrollment in HEES.

Only 5% of participants said that prior to participating in the program they were not aware of actions they could take. Two percent were aware but had not made a decision to explore ways to reduce energy since they had not considered finding sources for information on ways to reduce energy usage (except for one respondent who had made that effort). Another 3% of participants were aware and had considered taking action, but had not done so prior to participating in the program (about 3% had not made some effort to find ways to reduce energy usage).

[36] Eight of the 301 general population survey respondents participated in the HEES program. Their responses do not change the results significantly.

Figure 8.1-2: The Awareness-Action Continuum General Population (n=301) versus Program Participants (n=1,045)



Based on Q18, Q19, Q23 and Q26B from the process survey and Q5, Q12 and Q2 from general population survey; Are you aware of any actions that you could take to reduce your energy usage? Have you taken any actions to reduce energy usage? Have you decided that taking actions to reduce energy consumption is something you should look in to?

8.2. Customers Lack Complete Energy Efficiency Knowledge

When we asked a general question about knowledge of energy use followed by a more specific question of whether customer know about what they can do to reduce energy usage, we found that overall, nine out of ten California households report some level of knowledge about their home's *energy usage* (34% very and 55% somewhat knowledgeable). In fact, only 11% say they are not at all knowledgeable about their home's energy usage. Residential customers are slightly less aware of what additional *actions* they can take to save energy. Forty-six percent of residential customers state that they have limited knowledge of actions to reduce energy usage, and 22% say they lack such knowledge altogether.

Table 8.2-1: Customers Who Report Knowing about Their Home's Energy Use

General population survey Q1 & Q3: How would you describe your knowledge of your home's energy usage? Would you describe your knowledge of actions you could take to reduce energy usage as…?:	Percentage of Customers Who Know about Their Home's Energy Use (n=301)	Percentage of Customers Who Know about Energy Efficiency Actions (n=301)
Very knowledgeable	34%	32%
Somewhat knowledgeable	55%	46%
Not at all knowledgeable	11%	22%

As mentioned above, even though a large proportion of customers have some familiarity with actions that they can take to save energy, some lack depth of knowledge. Among the respondents

who are aware of possible energy efficiency actions, most commonly think of simple, everyday *practices* such as turning off lights or turning down the temperature or thermostat. (Table 8.2-2.) Of *measures* that could be taken to reduce energy (i.e., actions that require at least some upfront cost), customers most frequently mention installing CFLs, but this action is less frequently mentioned compared to the behavioral changes mentioned above.

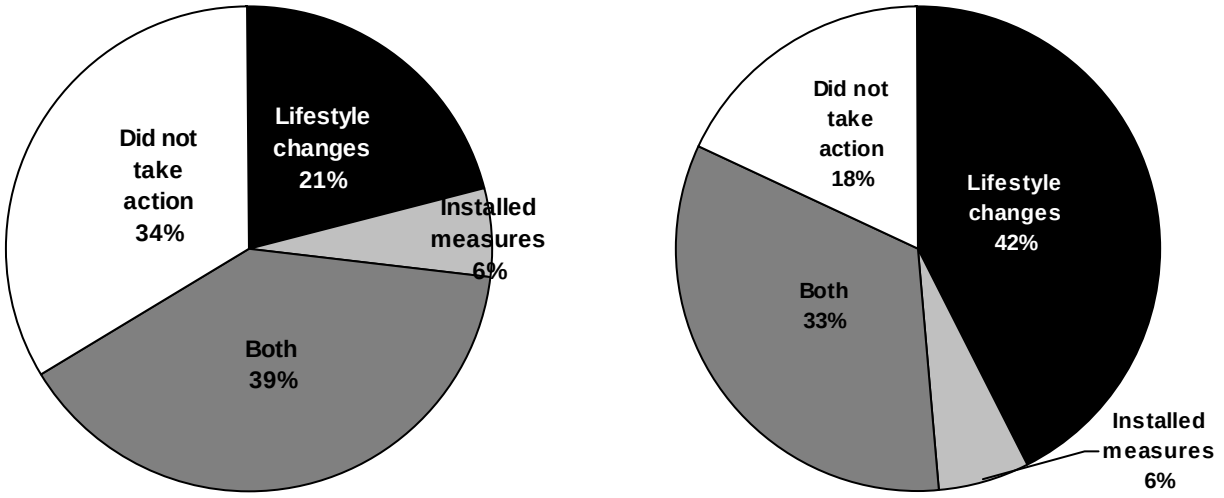
Table 8.2-2: Energy Efficiency Actions Most Frequently Mentioned By the General Population (multiple response, unprompted)

General population survey Q4: What information or types of actions are you aware of that could reduce energy usage in your household?	General Population (n=301)
Lighting related	40%
Lighting related behaviors (turning off lights)	*35%*
Lighting related measures (installing CFLs)	*13%*
Air conditioning related	24%
Air conditioning related behaviors (turning down AC)	*18%*
Air conditioning related measures	*7%*
Heating related	20%
Heating related behaviors (changing temperature)	*16%*
Heating related measures (installing new heater)	*6%*
Water related	17%
Water related behaviors (turning down water heater thermostat)	*12%*
Water related measures (installing new heater, insulating water heater)	*7%*
Installing energy efficient appliances	10%
Run major appliances during evening/off-peak hours	4%
Home weatherization related (weather stripping, sealing, testing for leaks)	9%
Heating related measures (installing new heater)	6%
Decrease usage/turn off when not in use	7%
Whole house – general	5%
Use more energy efficient alternatives	5%
Fans	4%
Installing new windows/doors	2%
Pool pumps	1%

8.3. Types of Energy Efficiency Actions Taken

Interestingly, a larger percentage of general population respondents (than HEES participants) report having installed measures (45% of general population respondents compared to 39% of participants *prior* to HEES). An additional 21% of the general population say they have made only behavioral changes (i.e., lifestyle changes) such as turning off lights, reducing the number of loads of laundry. Participants, prior to participation in HEES, were more likely to have made lifestyle changes than the general population (42% compared to 21%).

Figure 8.3-1: The Types of Changes Made by Respondents who Reported Taking Actions to Reduce Energy Consumption—General Population Compared To Participants Prior To Participation in HEES



General population (n=301) **Participants prior to participation (n=1,045)**

Based on Q5 and Q6 from general population survey and Q19 and Q20 from the process survey; Have you taken any actions to reduce your energy consumption? Would you say that you have made behavior or lifestyle changes, installed measures or both?

The figures above, however, do not show the number of measures installed or number of practices taken (i.e., they do not shown the depth of actions).

The actions primarily taken by respondents who said they have made lifestyle changes are turning things off when not in use or decreasing the usage or employing timers. Consumers who reported installing measures say that they have installed fluorescent/energy efficient light bulbs or new insulation, windows, or doors.

The table below presents the types of changes made as a result of the program, by participants who reported making a change to their practices or a measure. Among both participants and the general population, lighting is considered by most when taking action, likely because it requires a simple change and not a huge investment.

Similar to the general population; more respondents said they changed their behaviors in regards to lighting (and turning off other appliances when not in use), and installed fluorescent or energy efficient light bulbs.

Table 8.3-1: Actual Changes Made by Respondents Who Reported Taking Actions to Reduce Energy Consumption (multiple response)

Lifestyle Changes	General Pop (n=301)	Participants (n=1045)
Turn off lights/appliances/electrical equipment when not in use	31%	35%
Decreased usage / use timers	20%	3%
Switched to fluorescent/energy efficient light bulbs [a]	12%	--
Use more energy efficient alternatives [b]	7%	1%
Run full loads of dishes/laundry	8%	1%
Use major appliances during off-peak hours	8%	2%
Purchased/use energy efficient appliances [a]	6%	--
Control thermostat	6%	--
Air conditioning related behaviors (turning down AC)	--	19%
Heating related behaviors (changing temperature)	--	21%
Water related behaviors (turning down thermostat/water heater)	--	14%
Better insulation	4%	--
Turn off pool pump	--	4%
Use fans	5%	9%
Removed 2nd appliance	--	1%
Other	3%	1%
Installed Measures		
Fluorescent/energy efficient light bulbs	22%	21%
New insulation/windows/doors	12%	1%
Energy efficient refrigerator/freezer	7%	--
New heater/furnace	5%	6%
Installed new appliances (not specified)	5%	7%
Energy efficient washer/dryer	4%	--
Energy efficient air conditioner	4%	5%
Energy efficient ceiling fan	3%	--
Energy efficient stove/oven	2%	--
Programmable/automatic thermostat	2%	--
Energy efficient shower head	1%	--
Energy efficient dishwasher	1%	--
Home weatherization related (weather stripping, sealing, testing for leaks)	--	13%
Insulation related	--	9%
Water related measures (installing new heater, insulating water heater)	--	7%
Whole house (general)	--	4%
Other	2%	1%

a. Although the questions was "What type of lifestyle changes have you made?" some respondents answered by saying they installed measures.
b. Responses included hanging clothes out to dry, using a microwave, toaster oven or barbeque instead of the oven, using the fireplace.

Based on Q30 from process survey and Q7 and Q8 from general population survey; What type of actions have you taken? What types of lifestyle changes have you made? What have you installed?

Reasons for Not Taking Actions

Ten percent of program participants said they had not taken action prior to filling out the HEES survey. Forty percent of these 25 respondents said it was because they did not have enough

information, 16% said there were not enough savings or simply had not considered it. Twelve percent each said they felt the initial costs were too high or that they did not have enough information on the energy savings that would result from taking actions.

Among the general population, one third of the general population are either not aware of possible actions they could take or have not taken any actions. Twenty-two percent said they did not know of any specific energy-saving actions they could take, but 10% were aware *yet had not taken any actions*. Among these 30 respondents, one-half claimed that their energy use was already low (53%). Others said the costs of taking actions were too high or that there were not enough savings to warrant taking actions (10% each). Seven percent said they didn't have enough information on how to save energy. One respondent said that he wasn't interested and another simply had not considered it. Again, this is just a relatively small percentage of the total population.

8.4. Program Awareness and Participation

Participation in programs promoting energy efficiency is roughly similar between the general population and HEES participants. Only 14% of the general population respondents stated that they are both aware and have participated in a program. The percentage of HEES participants who participated in an energy efficiency program is comparable: only 14% of HEES participants stated that they had participated in another energy efficiency program prior to participating in HEES.[37]

One-half of respondents in the general survey are not aware of and/or have not heard of energy efficiency programs that are available to them; on the other side of awareness, 35% are aware but have not participated in any programs.

Table 8.4-1: Awareness and Participation in Energy Efficiency Programs

Process survey Q5 and general population survey QNP1 & NP4: Did you participate in any other efficiency programs before HEES? Are you aware of any energy efficiency programs? Have you participated in any energy efficiency programs?	**General Population Survey** (n=301)	**Participants Prior to Participation** (n=1045)
Have **not** participated in an energy efficiency program (prior to HEES for HEES participants)	86%	86%
Not aware of energy efficiency programs	*51%*	*n/a*
Aware but have not participated	*35%*	*n/a*
Participated in at least one energy efficiency program (prior to HEES for HEES participants)	14%	14%

*Significantly higher than the comparison group.

Customers who are aware of energy efficiency programs mentioned several different programs. The most frequently mentioned programs were utility programs (unspecified) and the Home Energy Efficiency Rebate program.

[37] Even when we remove the eight participants in HEES, participation is not significantly different.

HEES was also frequently mentioned. One out of every five customers, (20%) of the general population has heard of the Home Energy Efficiency Survey (HEES) program.[38] Two percent mentioned it unprompted while 18% stated they had heard of the program when prompted.

8.5. Utility Satisfaction

Even before participating in HEES, participants of the HEES program are significantly more satisfied with their utility than the general population. On a scale of 1 to 10 where 10 is very satisfied, 69% of HEES participants rated their overall satisfaction with their utility's services a 8, 9 or 10. On that same scale, however, responses from the general population were significantly higher than HEES participants regarding their satisfaction with monthly spending on electricity and gas. HEES participants may have enrolled in the program to help with this issue; customers at-large may not feel as strongly the need to participate in the program and reduce their spending on electricity and gas.

Table 8.5-1: Satisfaction With Utilities[a]

Percentage very satisfied with…	**General Population Survey** (n=301)	**Participant Satisfaction Prior to Participation** (n=1045)
Overall/General Services	62%	69%*
Monthly Spending on Electricity	37%*	24%
Monthly Spending on Gas	43%*	28%

*Significantly different from the comparison group.

[a] Note that w also asked pre- and post- satisfaction approximately nine to twelve months after participation to gauge increases in participation. The pre- and post- numbers described later in this report are used in the report summary.

Based on Q19, Q20a and Q20b from the general population survey and Q34, Q35a and Q35b from the process survey; On a scale of 1 to 10 how would you rate your satisfaction with the services provided by your utility? How satisfied are you with your monthly spending on electricity? How satisfied are you with your monthly spending on gas?

8.6. Other Demographic Differences

When we compared the home characteristics of participants versus the general population, we found no differences in year-round residency, heating fuel type, the number of rooms (i.e., a proxy for size), or in the age of the home.

As might be expected, the type of people who participate in HEES are more likely to own their home and pay their own bill (and thus be attracted to HEES to help them reduce their energy costs). However the large majority of both populations are owners, and nearly everyone pays their own energy bills.

Participants are also more likely to live in a single-family home, although as mentioned above, the number of rooms and the age of the homes reported by respondents are similar.

[38] This includes five people who mentioned it unprompted, and an additional 56 people who—when prompted—stated that they had heard of this program.

A larger percentage of general population respondents stated that they have just one occupant in the home.

Table 8.6-1: Home Characteristics of General Population versus Participants

(Only characteristics with some difference are shown)

Process and General Population surveys: QD3, QD4, QD5 and QD8	General Population Survey (n=301)	Participant Process Survey (n=1045)
Own or Rent		
Own	73%	78%[a]
Rent	24%	21%
Refused	3%	2%
Pay Energy Bill		
Yes	96%	98%[a]
No	3%[b]	1%
Refused	2%	1%
Type of Home		
Single family	75%	80%[a]
Apartment 5 or more units	9%[b]	5%
Duplex or attached	6%	7%
Mobile home	5%	3%
3-4 unit	3%	4%
Other/Refused	2%	2%
Number of People In Home		
1-person	21%[b]	13%
2-people	34%	35%
3-people	16%	18%
4-people	16%	17%
5 or more people	9%	15%[a]
Refused	3%	3%

[a] Significantly different from the general population.
[b] Significantly different from the participant process survey.

The general population is more likely to be Caucasian, this could perhaps in part because the in-home channel of the program appears to target minorities, although the large majority of both participants and the general population are Caucasian. The in-home component appears to have a larger percentage of Hispanic or Latino respondents (15% compared to 6% to 10% for the other channels).

Based on our survey findings, a larger percentage of those participating in the online component of HEES are renters (30% from the online surveys compared to the mail, 12%, or in-home channels, 16%); while a larger percentage of those participating in the mail component of HEES live in larger single family homes (89% versus 75% to 78% for the other channels). No other differences between the channels stand out.

There were no differences in income levels between participants in the process survey, and the general population. While consumption data is not available from the program tracking databases (or our survey efforts), when we looked at consumption for only those participants for whom we retrieved billing data (as part of the informal impact analysis), in general, it appeared that the

SCE in-home component of the program targets participants with a much lower consumption level than mail. In-home participants are also more likely to have a lower consumption than the sample of non-participants selected for the impact study. The SCE non-participant group was selected to serve as a comparison group for both the mail and in-home participants (for budget reasons), and their electricity consumption appears to fall somewhere between participants in these two channels. Further analysis of the differences between participants and non-participants are covered in the Pilot Impact section of this report.

In summary, it is difficult to measure true differences in awareness, knowledge and action because of the fact that HEES covers a variety of measures. However, our findings suggest that HEES participants overall could be predisposed to a higher awareness and understanding level, and have a greater willingness to taking actions to reduce their energy consumption than non-participants; but the channels attract different types of participants. It appears to be difficult to pick a non-participant sample that would be a good comparison group for both mail and in-home participants (the channels for which that we had consumption data) since they appear to target very different sizes of customers. Participants do not appear to have participated in utility energy efficiency program more frequently than the general population (as shown in Table 8.4-1.).

9. THE VALUE OF HEES AND THE ADOPTION OF HEES RECOMMENDATIONS

In this section, we evaluate the remaining assumptions about whether HEES fills the knowledge gap; provides information that engenders action; and plays a substantial unique informational role. We also look at one other longer-term indicator of program success: increasing overall customer satisfaction with the utility.

9.1. Evaluation of Program Assumptions

HEES Fills the Knowledge Gap

One of the short-term outcomes of HEES is to contribute to the overall understanding of participants. When we contacted participants shortly after they participated, the majority of participants felt that the information in the energy report (the output of HEES) explained their energy usage and the actions that they could take to reduce usage. Participants were slightly less likely to feel that the energy report provided sources of energy efficiency information and programs.

Table 9.1-1: Customer Perceptions of The Energy Report

Process Survey Q13d-Q13e, Q13g-Q13j: Agreement with statement regarding energy report	Total (n=1045)	Mail (n=242)	In-Home (n=242)	Online (n=561)
Information in the energy report explained my energy usage				
Strongly agree	43%	46%μ	40%	38%
Somewhat agree	31%	38%	33%	35%
Disagree (somewhat, strongly)	11%	7%	12%^	11%^
Don't know/neither	2%	1%	-	4%^#
Did not read report	13%	13%	15%	12%
Information in the energy report explained actions I could take to reduce my usage				
Strongly agree	43%	40%	57%^μ	39%
Somewhat agree	30%	35%#	20%	33%#
Disagree (somewhat, strongly)	11%	11%#	6%	12%#
Don't know/neither	3%	1%	2%	4%^
Did not read report	13%	13%	15%	12%
Energy report provided sources of energy efficiency information and programs				
Strongly agree	32%	26%	40%^μ	31%
Somewhat agree	32%	38%#	26%	33%#
Disagree (somewhat, strongly)	15%	17%	12%	15%
Don't know/neither	8%	7%	7%	9%
Did not read report	13%	13%	15%	12%
Energy report provided information that I was not already aware of				
Strongly agree	26%	21%	43%^μ	21%
Somewhat agree	33%	33%	28%	35%#
Disagree (somewhat, strongly)	25%	31%#	13%	27%#
Don't know/neither	3%	1%	<1%	5%^#
Did not read report	13%	13%	15%	12%
Energy report provided information to evaluate manufacturers claims				
Strongly agree	27%	24%	32%^μ	25%
Somewhat agree	35%	40%#	31%	34%
Disagree (somewhat, strongly)	13%	13%	9%	15%#
Don't know/neither	12%	10%	13%	13%
Did not read report	13%	13%	15%	12%
Energy report provided information that I needed to take actions that I was already considering				
Strongly agree	32%	29%	40%^μ	29%
Somewhat agree	33%	39%#μ	28%	32%
Disagree (somewhat, strongly)	17%	19%#	13%	17%
Don't know/neither	6%	1%	3%	9%^#
Did not read report	13%	13%	15%	12%

^ Significantly different from mail group.
# Significantly different from in-home group.
μ Significantly different from on-line group.

Overall, when we contacted participants more than nine months after they participated in HEES, 44% of respondents said they found the information useful. In response to our request to rate the value of the information they received in the energy report on a scale of 1 to 10 where 1 "is not at all useful" and 10 "is extremely useful," 44% of all respondents gave the information a rating of 8, 9, or 10. SCE/SoCalGas in-home customers were significantly more likely to find the information useful than SCE online and SoCalGas/SDG&E online customers.

Table 9.1-2: Usefulness of Information in Energy Analysis
(Percent Rating it 8, 9, or 10)

	Total (n=1390)	All Mail (n=701)	PG&E In-home (n=70)	SCE/SoCalGas In-home (n=150)	SCE Online (n=201)	SoCalGas/SDG&E Online (n=268)
10, 9, or 8	44%	45%	47%	52%	43%^	37%*^
Mean rating	*6.8*	*6.7*	*6.6*	*7.1*	*6.8*	*6.6*

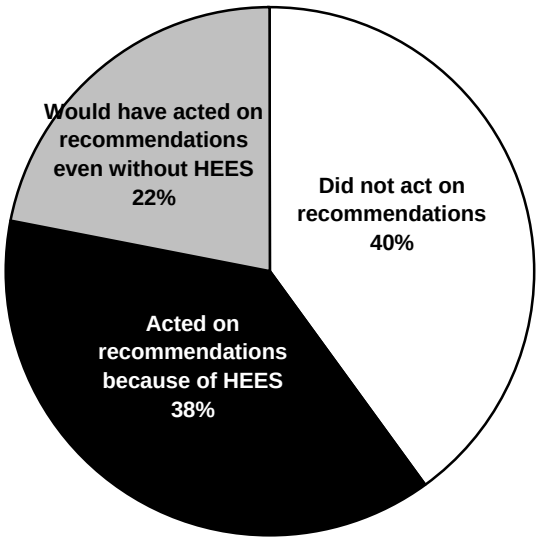
* Significantly different from all mail.
^Significantly different from SCE/SoCalGas in-home.
Based on question PR2 from the adoption survey; On a scale of 1 to 10 how would you rate the value of the information you received in the energy analysis?

Knowledge Engenders Action

Once customers are armed with knowledge about their home's energy usage, taking actions to reduce energy consumption is the logical next step. This is one of the most important expected short-term outcomes, measured by the percentage of participants who changed their behavior and practices based upon energy report.

When we contacted participants more than nine months after participating, at least 60% of HEES participants said that they took one of the recommendations made by HEES after they participated; and when we inquired specifically about the influence of HEES, 38% of all participants indicated that HEES was at least partly responsible for them taking one of the recommendations that we asked about.

Figure 9.1-1: Influence of HEES



Based on QFR1-QFR3 series from the Adoption Survey about adoption of recommendations, as well as more detailed questions including: Which statement best describes your household's plans to [recommendation] before you read the recommendation in your Energy Report? How likely is it that you would have [recommendation] if it had not been recommended in your Energy Report? If [recommendation] had not been recommended in your Energy Report, would you have done it at the same time, about 6 months later, or more than a year later, if at all?

Overall, we estimate that 13% of all of the recommendations made by HEES are taken. The recommendations that participants adopt most frequently are use compact fluorescent bulbs, seal air leaks and install weather stripping, cooling actions such as clean or replace dirty air conditioner filters and avoid using appliances at the hottest times of the day, lower water temperature and lower heater temperature settings.

A large number of participants also remove secondary refrigerators and freezers (hopefully through the recycling program, as specified by the recommendation).

Next to installing CFLs and weatherstripping, the most likely measures to be installed (at least in part) as a result of HEES are energy efficient shower heads, followed by washer or dryer, and refrigerator or freezer.

Table 9.1-3: Most Frequently Adopted Recommendations

Characterization	Adopted Measure *after* HEES	Adopted Measure *Prior* to HEES[b]	Did Not Adopt Measure	Number of Times Recs Made	Overall Number of Times Rec Taken In Part Because of HEES
Use compact fluorescent bulbs	21%	26%	36%	105,145	22,505
Seal air leaks and install weatherstripping	9%	25%	54%	99,158	8,585
Cooling recommendations including have ducts tested for leakage, seal ducts, clean or replace dirty air conditioner filters, shade windows, and avoid using appliances at the hottest times of the day	10%	50%	24%	66,424	6,716
Lower water temperature	20%	25%	40%	32,181	6,487
Lower heater temperature setting	16%	37%	31%	39,105	6,100
Remove secondary refrigerator/freezer	15%	9%	61%	33,944	5,195
Install energy efficient shower heads/faucet aerators	13%	23%	54%	36,075	4,573
Adjust temperature	17%	30%	38%	25,749	4,409
Raise AC temperature Setting	14%	36%	36%	27,464	3,923
Heating recommendations including have ducts tested for leakage, seal ducts, clean or replace dirty filters, shade windows, and avoid using appliances at the hottest times of the day	13%	31%	35%	21,470	2,884
Replace washer/dryer	7%	10%	71%	44,018	2,876
Use cooler water	11%	56%	23%	24,567	2,667
Turn off home electronics	25%	43%	23%	8,702	2,176
Replace refrigerator/freezer	10%	5%	71%	20,756	2,065
Weatherize doors/windows	14%	18%	49%	14,469	2,018
Seal leaks in ducts	30%	20%	43%	6,057	1,839
Remove or cover window AC	12%	23%	55%	15,430	1,804
Clean coils	20%	24%	44%	8,492	1,698
Maintain AC[a]	26%	33%	24%	5,529	1,448
Replace pool pump motor	10%	12%	65%	13,853	1,408
Insulate pipes	14%	10%	72%	9,306	1,303
Keep refrigerator full[a]	19%	45%	29%	6,164	1,174
Wash/dry full loads	12%	61%	19%	9,845	1,151
Turn off refrigerator/freezer	11%	7%	67%	9,687	1,109
Install whole house fan	4%	13%	80%	29,083	1,091

a. Adoption is based on 20-49 responses.
b. We show the percentage of customers who adopted measure prior to HEES to support process-related findings below that the recommendations are not always specific enough for customers. The survey does not ask about actions taken, and therefore the energy report sometimes recommends actions already taken by customers.

In addition to the recommendations about which we asked, a quarter (24%) of all respondents reported learning something from the HEES energy report that caused them to take actions or to purchase equipment that was even more efficient than the recommendations that we asked about. Respondents were asked about five recommendations from their specific HEES report, and then asked "Did you learn anything from the Energy Report that caused you to take actions or purchase any equipment that was even more efficient than what was recommended to you?" Additional details on responses are included in section 9. The high percentage of respondents who responded in the affirmative (24%) could be because they took an action recommended by HEES that we did not ask about, not necessarily an action that was actually "even more efficiently that was recommended to you."

Table 9.1-4: Took Action or Purchased Equipment More Efficient Than Recommended

Adoption Survey QPS1: Did you learn anything from the Energy Report that caused you to take actions or purchase any equipment that was even more efficient than what was recommended?	Total (n=1390)	All Mail (n=701)	PG&E In-home (n=70)	SCE/ SoCalGas In-home (n=150)	SCE Online (n=201)	SoCalGas/ SDG&E Online (n=268)
Yes	24%	24%	27%	25%	15%*	29%^
No	73%	73%$^{\mu}$	67%	72%	85%*	67%
Don't know	3%	3%	6%	3%	-	3%

*Significantly different from comparison groups.
^ Significantly different from all mail.
$^{\mu}$Significantly different from SoCalGas/SDG&E online.

Respondents who reported doing something more efficient than the recommendations that we asked about were asked to describe what they did. The most common responses were purchased new appliances, changed energy wasting habits, and purchased efficient light bulbs.

Table 9.1-5: More Efficient Action Taken (Multiple Responses)

Adoption Survey QPS2: What did you do that was more efficient than what was recommended?	Total (n=331)	All Mail (n=165)	PG&E In-home (n=19)	SCE/SCG In-home (n=38)	SCE Online (n=30)	SCG/SDG&E Online (n=79)
Purchased new appliance	34%	37%$^{\mu}$	53%$^{\mu}$	37%	23%	27%
Changed energy wasting habits	16%	12%	11%	18%	17%	23%*
Purchased efficient light bulbs	15%	7%	32%*	42%*	10%	18%*
Installed new windows	11%	15%^	11%	3%	10%	9%
Purchased new AC or heating unit	8%	10%$^{\mu}$	16%	-	13%	4%
Purchased new hot water heater	5%	3%	21%*^	3%	7%	8%
Installed insulation	5%	4%	11%	-	3%	8%
Fixed/cleaned appliance	3%	4%	5%	-	3%	4%
Purchased programmable thermostat	3%	1%	5%	-	13%*	4%
Purchased new pool pump	2%	4%	-	-	-	2%
Purchased appliance with Energy Star® label	2%	2%	-	-	-	4%
Removed unnecessary high energy items	2%	2%	-	3%	3%	1%
Installed solar panels	1%	2%	-	-	-	1%
Purchased/used fans	1%	2%	-	-	-	-
Shaded windows	1%	1%	-	-	7%	-
Other	4%	5%	-	3%	3%	5%
Nothing/Don't know	1%	2%	-	-	3%	-

* Significantly different from all mail.
^ Significantly different from SCE/SoCalGas in-home.
$^{\mu}$ Significantly different from SoCalGas/SDG&E online.

When we asked about persistence of practices (or behavioral changes made as a results of HEES), we found that in general, behavioral changes were still in place at the time of our survey, more than nine months after HEES. For 91% of the behavior-related recommendations, more than three quarters of respondents stated that they still frequently or always followed the practice.[39]

Less than 100% of the recommendations made by HEES are actionable since many participants had already taken at least some of the actions recommended by HEES (see Adopted measure *prior* to HEES in Table 9.1-3 above). This demonstrates why some customers could believe that the surveys are not specific enough. When we spoke with participants shortly after they participated, 26% of the participants say they had already done most of the recommended actions in the energy report, even before they had received it; 37% say they had taken about half the actions suggested; and another 21% had done one or two actions. Only 9% had not taken any of the actions recommended by HEES.

[39] An additional table on the persistence of the 44 "practice" recommendations can be added upon request. We found only a couple of practices where less than 75% "frequently or always" followed this practice at the time of our survey, and this was primarily because some respondents said that they sometimes did this. These were maintain ac (63% frequently or always and an additional 24% sometimes), and raise temperature on ac (73% frequently or always and 17% sometimes). Shade windows (67% frequently or always) and use programmable thermostats (71%) were also among those under 75%, but this was primarily because some respondents said that they don't know if they still do this.

Aside from recommendations that were not taken because they were already in place, 24% of the recommendations were not taken because participants felt that they "are not relevant" to the participant's home; for an additional 21% of the recommendation not taken, respondent felt that the recommendations were "too expensive." Other reasons mentioned include participants thinking that there is no need for the action, that they don't have enough time to do it, or that they can not do it because it will reduce their comfort level.

HEES Plays a Substantial, Unique Informational Role

Only a small percentage of participants feel that if HEES didn't exist, they could still find this kind of information. A very large percentage (from 37% for online up to 45% for in-home respondents) feel that HEES does play a unique information role and that they could not find this information anywhere else.

Table 9.1-6: Participant Perceptions of HEES

Process Survey Q13j: Agreement: If HEES program did not exist, I could still easily find this kind of information	Total (n=1045)	Mail (n=242)	In-Home (n=252)	Online (n=561)
Strongly agree	14%	16%	14%	14%
Somewhat agree	27%	31%#	21%	27%#
Disagree (somewhat, strongly)	39%	38%	45%μ	37%
Did not read report	13%	13%	15%	12%

^ Significantly different than mail group.
# Significantly different than in-home group.
μ Significantly higher than on-line group.

Satisfaction with Energy Bills

In addition to contributing to the overall understanding of energy efficiency and encouraging participants to change behaviors and to adopt energy efficient measures, the program also seeks to increase overall satisfaction with the utility. Increased utility satisfaction post-participation, including a positive utility perception and reduced customer complaints, is one of the longer-term indicators of program success.

As described in an earlier section (The Role of HEES), HEES participants appear to be less satisfied with their gas and electric bills than the general population. HEES, however, appears to help increase overall satisfaction with electric and/or gas bills. Overall, 16% of HEES respondents felt that they were satisfied (rating an 8, 9 or 10) with their monthly electric bill *before* the survey, compared to 27% *after* participating in HEES.[40]

[40] The percentage satisfied "before" HEES differs from that presented earlier because they come from different surveys, the first conducted shortly after participant, and the latter conducted more than nine months after participation. We use the 16% satisfied number here in order to compare before versus after among the same group of customers (as an indicator of perceptions due to the HEES program).

Approximately one-quarter (26%) of HEES participants were satisfied with their gas bill prior to the survey, compared to 30% after participating in HEES. (Note that not all utilities offer this program for gas customers.)

Table 9.1-7: Satisfaction with Monthly Spending on Bills before and after HEES
(Rating an 8, 9 or 10 on a 10-point scale)

	Electricity Bill				Gas Bill			
	Before		After		Before		After	
	Percent Satisfied	Mean Rating	Percent Satisfied	Mean Rating	Percent Satisfied	Mean Rating	Percent Satisfied	Mean Rating
Total	16%	5.0	27%*	5.7	26%	5.9	30%*	6.0
ALL MAIL	17%	5.0	27%*	5.6	26%	5.9	32%*	6.1
PG&E in-home	13%	4.6	24%*	5.2	23%	4.9	27%	5.2
SCE/SoCalGas in-home	14%	4.3	26%*	5.6	23%	5.9	27%	6.2
SCE online	21%	5.7	34%*	6.2	31%^	6.4	32%	6.1
SoCalGas/SDG&E online	14%	4.8	24%*	5.6	25%	5.8	27%	5.8

*Satisfaction is significantly higher than before the survey.
^We asked all customers, but not all utilities are gas utilities and/or offer recommendations to reduce gas usage.
Based on QX1-QX4 from adoption survey; On a scale of 1 to 10 how satisfied were you with your electricity bill before participating? After participating? How satisfied were you with your gas bill before participating? After participating?

Overall therefore, our findings validate the fundamental assumptions of the program and show that the program provides value to many customers. Despite the fact that this population of utility customers is fairly aware about energy efficiency actions (see Figure 8.1-2), HEES still plays a unique informational role for many.

10. PARTICIPATION IN OTHER UTILITY PROGRAMS

The primary goals of HEES are to increase awareness of energy efficiency opportunities, encourage adoption of energy efficient practices, and induce a permanent change in attitudes and actions towards energy efficient products and services. Ultimately, the program seeks to provide information to reduce usage.

One of the desired outcomes of HEES, however, is to encourage customers to participate in other energy efficiency programs. This is shown in the Program Logic Models (Figures 3.1-1 to 3.1-3) as an intermediate outcome. The logic is that participants will read the energy report and then inquire into other energy programs, and then through other energy programs, replace and purchase high efficiency equipment.

HEES tries to attain this outcome by: providing recommendations in the energy reports (some versions only) that encourage customers to participate in other programs, including promotional inserts in the energy report, providing links to other programs in the online survey, and verbally promoting programs during the in-home survey. The objective of this section is to examine this outcome and determine the extent to which HEES influences customers to participate in additional energy efficiency programs offered by the utility.

We first reviewed the HEES databases to determine the percentage of HEES customers who participated in other utility programs following the receipt of the HEES energy report. We then conducted telephone interviews with customers who first participated in HEES, and then participated in a follow-up program. We asked customers who appear to have been influenced by HEES (based on the database review) about the extent to which they were influenced to participate in an additional program. For this analysis, we looked at two utilities (SCE and PG&E) and a total of four delivery channels: (1) PG&E mail[41], (2) SCE mail, (3) SCE in-home, and (4) SCE online. We did not include Sempra (that is, SoCalGas and SDG&E) in this analysis due to difficulties in obtaining program databases from this organization.

Our findings below suggest that while some participants read the recommendations about HEES and were influenced *in part* by HEES, there does not appear to be conclusive evidence that HEES leads to significant increases in participation in other programs.

10.1. HEES Efforts to Encourage Additional Program Participation

Based on utility interviews, the mail and in-home efforts often promote the Rebate and Appliance Recycling programs; and the online survey offers links to the Appliance Recycling program, Single-Family Rebate program, Summer Discount Plan (AC Cycling program), and the 20/20 (Summer Savings Plan) program. Utility sponsors have also mentioned that they occasionally provide brochures or inserts for these programs with the mailed energy reports or hand them out during the in-home visits, but only when the brochures are available.

[41] PG&E in-home and online data were not included in the analysis for PG&E due to limitations in the database (i.e., in-home did not begin until 2005, and online does not collect adequate customer information).

The mail and online HEES energy reports provide some customer-specific recommendations that encourage customers to upgrade their appliances and to take advantage of the Rebate and Appliance Recycling programs. The Rebate program targets refrigerators; heating, ventilation, and air conditioning (HVAC) equipment; pool pumps and motors; and building shell measures such as attic and wall insulation and windows. Both PG&E and SCE recommendations relating to those types of upgrades tend to include information on the rebate associated with it, along with a website address and phone number to call (e.g., "PG&E is offering $125-$300 rebates on qualifying swimming pool pumps and motors. For more information, please visit our website at www.pge.com/foryourhome or call our Smarter Energy Line at 1-800-933-9555"). In addition, all recommendations to replace or recycle a refrigerator or freezer include information on the applicable incentive through the Appliance Recycling program along with a phone number and website address for access to more information.

Several utilities added recommendations (or added text to recommendations) in 2005 in order to give participants more actionable recommendations on other programs that they could participate in. For example, in 2005, SDG&E changed their "reduce the hours your pool filter operates to 8 hours per day" to "Consider replacing pump & motors that are over 10 years old with newer energy efficient models. Rebates may be available on qualified energy-efficient pool pumps and motor replacement. Contact SDG&E at 1-800-644-6133 or visit www.sdge.com to verify rebate availability and eligibility requirements before buying or installing qualifying products."

In May of 2005, following the program theory meeting, SCE also added "participate in the Summer Discount Program" and "participate in the 20/20 program." The 20/20 recommendation was made 10,741 times in the remainder of 2005 (and there were a total of 12,710 participants in those months) so it seems like that recommendation was made to virtually all participants. Both of these additions, however, were made subsequent to the period analyzed in our database review, which looks specifically at 2004 participants.

Based on self-reports, customers most frequently participate in the Appliance Recycling program, followed by the Rebate programs, the Summer Discount Plan (or AC Cycling program), and the 20/20 program. This is true across all survey efforts with HEES participants, HEES non-participants, and the general population. As such, we focused our analysis on participation in these programs following participation in HEES.

Table 10.1-1: Programs Most Frequently Participated In (Multiple Responses)
Self-reported Data From Multiple Survey Efforts[a]

	Total HEES Participants Before participating in HEES (n=158)	Total HEES Participants After participating in HEES (n=121)	Non-Participants (n=102)	General Population (n=44)
Appliance Recycling	22%	23%	18%	9%*
Rebate (HEER/SFEER)	13%	14%	13%	18%
Summer Discount Plan (AC Cycling)	10%	14%^	7%	5%
20/20 (Summer Savings Plan)	6%	7%	11%	-
CARE	4%	4%	8%	5%
LIFE	4%	1%	4%	-
Residential Lighting	3%	4%	-	5%
CHEERS	3%	4%	3%	-
Energy Management Assistance (EMA)	1%	-	-	-
GoodWatts Plan	1%	1%	-	-
HEES	NA	NA	-	20%
ENERGY STAR® Programmable Thermostat	NA	NA	-	2%

[a]Pre and post survey groups are non-overlapping. No significant difference exist between the "Before" and "After" groups.
*Significantly different from the comparison groups.
^ Significantly different from Non-Participant group.
Based on QOP2 and QOP5 from the adoption survey, QOP2 from non-participant survey and QNP5 from general population survey; Which programs did you participate in between September 2002 and when you participated in HEES? Which programs did you participate in since you participated in HEES? Have you participated in any energy efficiency programs since September 2002? Which energy efficiency programs have you participated in?

10.2. Crossing Program Databases

We looked at participation in the Single-Family Rebate and Appliance Recycling programs for all of the channels that we examined. For SCE customers only, we also looked at participation in the Multi-Family Rebates, Summer Discount/AC Cycling, and 20/20[42] programs. (Note that PG&E did not provide information on these other programs.) If a customer participated in HEES and another program, we compared the month and year of participation in the other energy efficiency program to the date that the HEES survey was completed to determine if the participation occurred before or after HEES.[43]

Table 10.2-1 shows that for SCE, the percentage of customers who participated in another program varies by delivery channel from 12% of mail participants to nearly 19% of online and

[42] The analysis found that 7.5% of SCE customers participate in the 20/20 program, however, some of these customers may have automatically qualified for this program because of their energy usage and may not have actively chosen to participate in the program. Therefore, this program is only included in some of the analyses throughout this report.
[43] We assumed customers who participated in both programs in the same month had participated in HEES first.

in-home participants. Based on our database review, 14% of SCE customers appear to have been channeled by HEES into one of these four programs. When we add the 20/20 program, the total number of customers participating in programs rises to just over 20%.

Table 10.2-1: Percent of Customers Who Participated in at Least One Other Program Offered by SCE after HEES[a]

Channel	SCE Customers Who Participated in at Least One Other Program after HEES (excluding 20/20)	SCE Customers Who Participated in at Least One Other Program after HEES (including 20/20)
Mail	12.1%	18.8%
Online	18.9%	24.0%
In-Home	18.8%	25.7%
Total	**14.0%**	**20.6%**

a. Based on database review

Table 10.2-1 above shows participation including and excluding the 20/20 program. We found that 7.5% of SCE customers participated in the 20/20 program; however, some of these customers were automatically been signed up for the 20/20 program and did not have actively chosen to participate in the program. Therefore, we do not include the 20/20 program in our analyses for the majority of this section. The estimates shown in the table above represent the upper limit on the percentage of HEES customers who have been influenced by HEES.[44]

10.3. Differences between Utilities

Since PG&E only provided information about mail customers who participated in the Single-Family Rebate or Appliance Recycling programs, we could only compare overall participation numbers among the utilities for these two programs (i.e., HEES mail survey participants in the Single-Family Rebate or Appliance Recycling programs). The percentage of customers who participated in one of these two energy efficiency programs after HEES is lower for PG&E than for SCE (5.3% compared to 7.3%). Note that for the rest of our analysis, we often omit PG&E since we only have information about the two programs mentioned above.

Table 10.3-1: Percent of Customers Who Participated in the Single-Family Rebate or Appliance Recycling Programs after HEES Based on Database Review

Channel	Participation in Single-Family Rebate or Appliance Recycling Program after HEES	
	SCE	PG&E
Mail	7.3%	5.3%

[44] This is if you are looking only at the programs that we examined. The percentage that were channeled into other programs would be higher if we consider additional programs.

10.4. Influential Factors in Program Participation: HEES versus Other Factors

Following the database review, we conducted telephone interviews with PG&E and SCE HEES participants who also participated in one of the other programs after participating in HEES. We asked those customers who appeared to have been influenced by HEES (based on the database review) about the extent to which they were actually influenced.

We initially asked respondents, unaided, how they first heard about the program. None of the respondents mentioned HEES unprompted. The factors that respondents mention most often vary slightly by program. Participants said they heard about the Single-Family Rebate program most often through a retailer (29%) or mailing (26%). This is the only program where the retailers appear to play a large role, and this role is expected given the nature of the program (often rebates are promoted at the time of the purchase to help bring down the customer's first costs). Participants heard about other programs most often through a mailing or word of mouth.

We then asked participants to rate on a scale of 1 to 5, where 1 is no influence and 5 is a great deal of influence, the influence that different factors had on their decision to participate in additional programs. The factors include statewide television or radio campaigns; utility bill inserts or mailings; HEES recommendations; newspaper advertisements; community events, fairs, festivals or home shows; and local government or local organizations. When we look at the factors by program, bill inserts tend to be the most influential. This finding is consistent with the finding about the HEES program that suggests that HEES participants most often learned about HEES through bill inserts. Generally, HEES is not considered the most important factor in alerting customers to other programs. However, depending on the program, between 33% and 42% of customers identified HEES as one of the motivating factor in their decision to participate in additional programs. (See Figure 10.4-1 below.) Note that this percentage includes anyone who gave a rating of 2 or more (even though a rating of 2 does not indicate that HEES was much of an influence in their decision making). The bars in the table distinguish between the percentage that gave a low rating of 2 or 3 versus the percentage that gave a higher rating of 4 or 5.

Figure 10.4-1: Influence of Different Factors by Program

Figure 10.4-1a: Single-Family Rebate Program

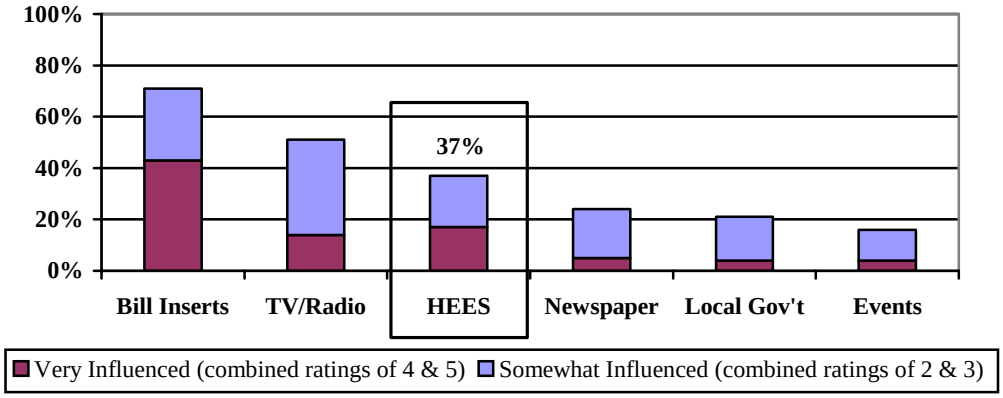


Figure 10.4-1b: Appliance Recycling Program

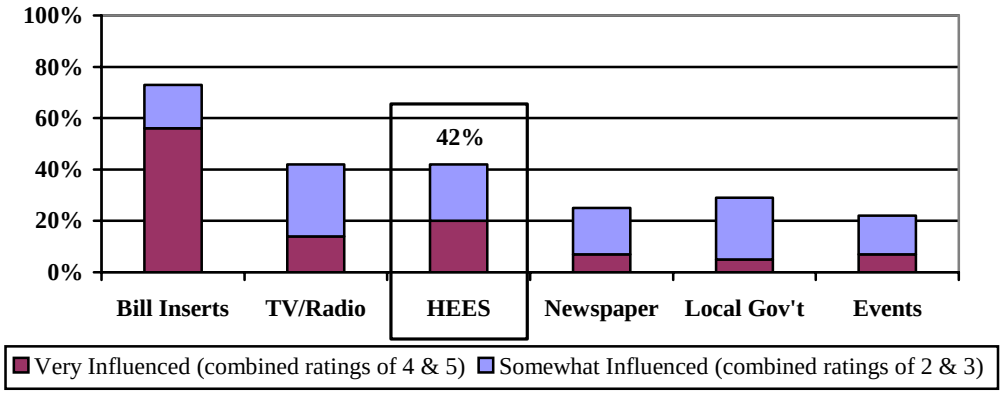
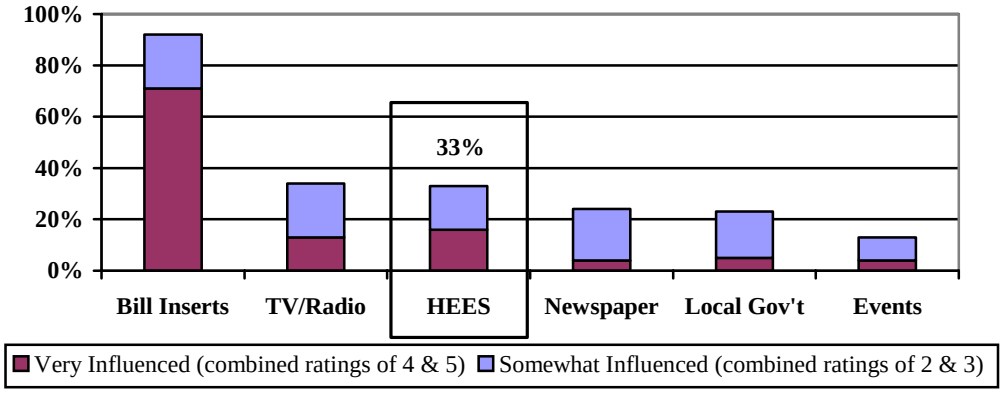


Figure 10.4-1c: Summer Discount/AC Cycling Program



Based on QB1-QB6, QD1-QD6 and QE1-QE6 from the database matching survey. On a scale of 1 to 5 how much of an influence did [Statewide television or radio campaigns] have on your decision to participate in the Rebate Program/Appliance Recycling Program/ Summer Discount Plan or AC Cycling Program? Utility bill inserts or mailings? Home Energy Survey or web site? Newspaper advertisements? Community events, fairs, festivals or home shows? Information from your local government or local organizations?

When we looked at the influence of HEES by channel, the range was slightly larger. As shown in Table 10.4-1 below, among those who participated in additional programs after HEES, from 28% to 50% of respondents (by channel) stated that HEES had some influence (a rating of 2 or higher). The online and in-home delivery mechanisms were the most effective, with mail being less effective.

Overall, HEES does appear to have some influence on more than a third of the customers who participated in a program after HEES, but for many it is just one of several factors. Only 18% of respondents say HEES is very influential (represented by a rating of 4 or 5) in their decision to participate in the other programs.

Table 10.4-1: Percent of Customers Influenced by HEES Based on ODC Telephone Survey

Utility/Channel	Influenced by HEES*
PG&E Mail	32.3%
PG&E Total	**32.3%**
SCE Mail	28.2%
SCE Online	48.9%
SCE In-Home	43.9%
SCE Total	**39.0%**

* Provided a rating of at least 2 out of 5

Based on QB3, QD3 and QE3 from the database matching survey. On a scale of 1 to 5 how much of an influence did [Home Energy Survey or web site] have on your decision to participate in the Rebate Program/Appliance Recycling Program/ Summer Discount Plan or AC Cycling Program?

10.5. Overall Effectiveness of HEES

To determine overall effectiveness, we combined the results of our database review with the results of our telephone survey. Overall, effectiveness by delivery mechanism and utility (channel) ranges from 1.7% to 9.2%. Overall, 5.5% of SCE participants participated in a follow-up energy efficiency program (at least in part) as a result of HEES.

Table 10.5-1: Overall Effectiveness by Channel
All Programs Combined

1	2	3	4
Channel	**Percent Who Participated in at Least One Other Program after HEES**	**Percent of Column 2 Who Were Influenced by HEES***	**Overall Effectiveness**
PG&E Mail	5.3%	32.3%	1.7%
PG&E Total	**5.3%**	**32.3%**	**1.7%**
SCE Mail	12.1%	28.2%	3.4%
SCE Online	18.9%	48.9%	9.2%
SCE In-Home	18.8%	43.9%	8.3%
SCE Total	**14.0%**	**39.0%**	**5.5%**

* Provided a rating of at least 2 out of 5

Based on QB3, QD3 and QE3 from the database matching survey. On a scale of 1 to 5 how much of an influence did [Home Energy Survey or web site] have on your decision to participate in the Rebate Program/Appliance Recycling Program/ Summer Discount Plan or AC Cycling Program?

10.6. Estimates of Customers Channeled to Other Programs

The evidence suggests that channeling HEES participants to other programs is not consistent across the utilities. However, if we assume that the SCE percentages (currently, our most robust estimate since it includes four programs) are representative of all utilities, then we can use those percentages to estimate that, in total, HEES funnels 7,886 customers into these other utility programs each year. (See Table 10.6-1.)

Table 10.6-1: Estimated Number of Customers
Participating in Programs Due to HEES

Channel	2004 and 2005 HEES Participants in All Channels	Overall Effectiveness[a]	Total Numbers Fed into Other Programs
Mail	**102,269**	**3.4%**	**3,477**
Online	**33,761**	**9.2%**	**3,106**
In-Home	**15,702**	**8.3%**	**1,303**
Total	**151,732**		**7,886[b]**

[a] Overall effectiveness of HEES to influence participants to participate in additional programs. To determine overall effectiveness, we used SCE results shown in Table10.5-1 (combined results of our database review with the results of our telephone survey).

[b] Approximately 7% of these customers participate in more than one additional program (6.7% in two programs and 0.4% in three programs).

Below we look specifically at which program customers appear to be participating in as a result of HEES.[45]

[45] It is beyond the scope of this work to estimate the percentage of overall participation in other energy efficiency programs.

10.7. Analysis by Program

When we look at the effectiveness by program, it appears that HEES is slightly more effective at channeling customers into the AC Cycling program, as 2.7% of HEES participants participate in this program. Overall, less than 2% of HEES participants participate in the Single-Family Rebate program (1.7%) or Appliance Recycling (1.9%). The percent of participants who indicate that they were influenced by HEES to participate in additional programs varies by program from 33% to 42%. It is not clear whether the variation is due to messaging or applicability of the programs. The actual level of influence most likely falls somewhere in this range.

Table 10.7-1: Percent of Customers Who Participated after HEES by Program[a]

Program	Customers Who Participated in Program after HEES (n=7886)		Overall Effectiveness
	Percent	Influenced by HEES[b]	
AC Cycling	8.1%	32.9%	2.7%
Single Family Rebate	4.4%	37.6%	1.7%
Appliance Recycling	4.4%	42.4%	1.9%

a. Based on a database review
b. Provided a rating of at least 2 out of 5.
Based on QB3, QD3 and QE3 from the database matching survey. On a scale of 1 to 5 how much of an influence did [Home Energy Survey or web site] have on your decision to participate in the Rebate Program/Appliance Recycling Program/ Summer Discount Plan or AC Cycling Program?

When we consider that one customer can be channeled into more than one program, the actual number of savings opportunities created by HEES is more than the 7,886 customers shown in Table 10.6-1 above. As shown in Table 10.7-2, 2,579 HEES customers are fed into the Single-Family Rebate program, 2,883 are fed into the Appliance Recycling program, and 4,097 HEES participants are channeled into the AC Cycling program for a total of 9,559 possible savings opportunities created (at least in part) as a result of HEES.

Table 10.7-2: Estimated Number of Customers Fed to Each Program

Program	2004 and 2005 HEES Participants in All Channels	Overall Effectiveness	Total Number Fed into Other Programs
Single-Family Rebate	151,732	1.7%	2,579
Appliance Recycling	151,732	1.9%	2,883
AC Cycling	151,732	2.7%	4,097
Total			**9,559**

A Closer Look at Participants Who Were Given Recommendations

As mentioned above, the mail and online HEES energy reports provide some customer-specific recommendations that could encourage customers to participate in the Rebate and Appliance Recycling programs. The databases do not identify which customers actually receive an insert or

brochure, but when we look more closely at a smaller subset of customers who were clearly given a recommendation that was linked to another program, we find that most customers were given at least one recommendation about the Rebate program—at least 85% of HEES participants were given some recommendation about the Rebate program. (See Table 10.7-3) As such, the percentage of customers participating in those additional programs does not significantly increase for any of the channels.

There is also some indication that those who received the recommendations are more likely to act than those who did not receive the recommendations.

Table 10.7-3: Comparison of Participation in the Rebate Program Between Customers Who Were Given a Recommendation Mentioning the Program and Customers Who Were Not[a]

	SCE Mail		SCE Online		PG&E Mail	
	% of HEES Participants (n=17,186)	% Participated in Rebate Program after HEES (percentage of those in prior column)	% of HEES Participants (n=1,801)	% Participated in Rebate Program after HEES (percentage of those in prior column)	% of HEES Participants (n=20,510)	% Participated in Single-Family Rebate Program after HEES (percentage of those in prior column)
At least one recommendation mentioned the Rebate program	94%	4.2%^	85%	8.4%	99%	4.8%
No recommendations mentioned the Rebate program	6%	2.4%	15%	6.2%	1%	4.3%
All participants	100%	4.0%	100%	8.1%	100%	4.8%

a. Includes both the Single-Family Rebate and Multi-Family Rebate programs for SCE and the Single-Family Rebate program only for PG&E.

^ Significantly higher than the percentage of HEES participants who did not receive the recommendation.

Fewer HEES participants received recommendations about the Appliance Recycling program than about the Rebate program because Appliance Recycling focuses primarily on refrigerators and freezers. As shown in Table 10.7-4, the difference in the rate of participation in the Appliance Recycling program between all participants and participants who were given a specific recommendation is greatest for SCE mail and online HEES participants. While 4.1% of all SCE mail participants participated in the Appliance Recycling program after HEES, 6.2% of those who were given a recommendation that specifically mentioned the program subsequently participated. Similarly, 13.6% of SCE online participants who received a recommendation that mentioned the Appliance Recycling program participated in the program after HEES, compared to 6.8% of all SCE online participants. PG&E mail does not appear to be a very effective means of channeling customers into the Appliance Recycling program. Since only less than 1% of all HEES participants participate in the Appliance Recycling program after HEES, it is not

surprising that there is only a slight increase in participation by those who were given a specific recommendation.

Table 10.7-4: Comparison of Participation in the Appliance Recycling Program Between Customers Who Were Given a Recommendation Mentioning the Program and Customers Who Were Not

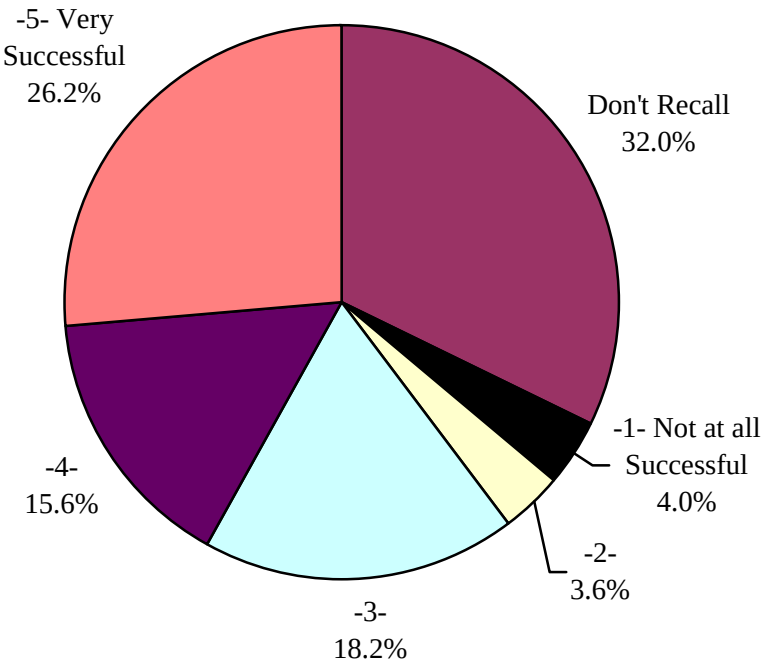
	SCE Mail		SCE Online		PG&E Mail	
	% of HEES Participants (n=17,186)	% Participated in Appliance Recycling Program after HEES (percentage of those in prior column)	% of HEES Participants (n=1,801)	% Participated in Appliance Recycling Program after HEES (percentage of those in prior column)	% of HEES participants (n=20,510)	% Participated in Appliance Recycling Program after HEES (percentage of those in prior column)
At least one recommendation mentioned the Appliance Recycling program	47%	6.2%^	26%	13.6%^	55%	0.6%^
No recommendations mentioned the Appliance Recycling program	53%	2.2%	74%	4.4%	45%	0.4%
All participants	100%	4.1%	100%	6.8%	100%	0.5%

^ Significantly higher than the percentage of HEES participants who did not receive the recommendation.

10.8. Customer Perceptions of Effectiveness of HEES at Conveying Program Info

Regardless of whether or not HEES influenced their participation, 42% of those surveyed perceive HEES to be effective at conveying information, providing a rating of 4 or 5 on a 5-point scale. When we specifically asked customers who could recall HEES about the ability of HEES to convey information about other programs, the percentage of respondents who think HEES is effective at conveying information increases to 60%.

Figure 10.8-1: Information Conveyed by HEES About Other Energy Efficiency Programs (n=225)



10.9. Does HEES Increase Participation in Other Programs?

As shown in an earlier section, only a small number of HEES participants participated in an energy efficiency program prior to HEES, and HEES participants reported that they were not more likely than the general population to participate in programs prior to HEES. They do not, therefore, appear to have a greater proclivity towards participating than non-participants. This lessens some (but not all) of the concerns about a self selection bias between participants and non-participants (discussed further in the separate write-up of the impact analysis).

Findings from our survey conducted more than nine months after participation found similar results: that majority of respondents did not participate in an energy efficiency program before HEES. Furthermore, when we compare the before and after periods, it appears that participation rates among participants are similar for both periods.

Table 10.9-1: Self-Reported Participation in Energy Efficient Programs Before and After Receiving the Audit/Survey

Adoption Survey QOP1 and QOP4: Did you participate in any energy efficiency programs …	Total (n=1390)	All Mail (n=701)	PG&E In-home (n=70)	SCE/SCG In-home (n=150)	SCE Online (n=201)	SCG/SDG&E Online (n=268)
before receiving the analysis?						
Yes	11%	13% [d]	11%	5%	13% [d]	9%
No	84%	83%	77%	89% [bc]	85%	84%
Don't know/refused	5%	5% [e]	11% [be]	5%	2%	6% [e]
after receiving the analysis?						
Yes	9% [d]	9%	7%	4%	9% [d]	10% [d]
No	88%	87%	84%	93% [bcf]	90%	87%
Don't know/refused	4%	4% [e]	9% [e]	3%	1%	4%

[b] Significantly different from all mail.
[c] Significantly different from PG&E in-home.
[d] Significantly different from SCE/SCG in-home.
[e] Significantly different from SCE online.

HEES Participants versus HEES Non-participants

Based on our database review, participation among a randomly selected group of non-participants in 2004 and 2005 is similar to program participation by HEES participants. Over the full 2004 and 2005 time period, 25.7% of SCE HEES participants and 25.6% of SCE HEES non-participants took part in one of the additional energy efficiency programs that we examined. (Note the table below does include the 20/20 program, and encompasses a larger time period than just "post HEES participation" since non-participants do not have a post-HEES participation period.)

Table 10.9-2: Percent of Customers Who Self-Report That they Participated in at Least One Other Program Offered by SCE[a]

Program	SCE – HEES Participants Participated in at Least One Other Program *after* HEES[b]	SCE – HEES Participants Participated in at Least One Other Program Since Jan 2004	SCE – HEES Non-Participants Participated in at Least One Other Program Since Jan 2004
Single-Family Rebate	4.0%	6.5%	4.7%
Multi-Family Rebate	1.4%	2.4%	1.7%
Appliance Recycling	4.4%	5.5%	6.0%
AC Cycling	5.7%	7.5%	7.9%
20/20	7.5%	7.5%	8.2%
Total	**20.6%**	**25.7%**	**25.6%**

a. Based on database review by program
b. The percentage of HEES participants shown in the second column is slightly higher than that shown in the first column because we used the full time period to compare participants and non-participants

Similarly, when we compare self-reported survey findings from HEES participants to non-participants, it appears that SCE HEES participants are not more likely to participate in other programs than non-participants. This finding agrees with our findings from the database analysis; however, our database analysis is more accurate due to the fact that participants do not always accurately report participation.

Table 10.9-3: Percent of Customers Who Participated in at Least One Other Program Offered by the Utility after HEES: Participants Compared to Non-Participants

Channel	Self-Reported Participation Among Participants Since 2002	Self-Reported Participation Among Non-Participants Since 2002
SCE Mail	17.4%	n/a
SCE Online	21.1%	n/a
SCE In-Home	8.8%	n/a
SCE Total	**16.4%**	**14.8%**

* Statistically higher than non-participants.

The same is true for PG&E: we did not find a significant difference in participation rates between HEES participants and HEES non-participants.

Table 10.9-4: Percent of Customers Who Participated in At Least One Other Program Offered by PG&E Based on Database Review by Program

Utility Program	PG&E- Participated in At Least One Other Program After HEES[a]	PG&E – HEES Participants Participated in At Least One Other Program Since 2004	PG&E – HEES Non-Participants Participated in At Least One Other Program Since 2004
Single-Family Rebate	4.8%	7.2%	5.2%
Appliance Recycling	0.5%	0.6%	1.0%
Total	**5.3%**	**7.8%**	**6.2%**

a. The percentage of HEES participants shown in the second column is slightly higher than that shown in the first column because we used the full time period to compare participants and non-participants

Overall, HEES influences a small percentage of participants to participate in other energy efficiency program efforts, but for many it is only one of a number of factors that influence their decision to participate. Based on all of our findings above, there does not appear to be conclusive evidence that HEES leads to significant increases in participation. This is also consistent with findings for the impact analysis, (presented informally to the CPUC), which show that the impacts from HEES do not double count any savings that would show up in other energy efficiency programs.

Our methodology did not allow us to determine reasons why HEES participants did not participate more frequently in other programs. The study sponsors should consider exploring this issue further. If they wish to increase the percentage of customers who are fed into resource acquisition programs, the study sponsors should first determine why HEES participants did not participate. If HEES participants need more marketing that is more targeted, sponsors should then consider coordinating with other energy efficiency programs and following up with customers based on the information that the customer provides in the HEES program survey to increase the percentage of customers who feed into other programs. For example, a customer who states that they have a pool could be a candidate for the next targeted pool pump

replacement program mailing. Our data suggest that customers are eager to get this additional information—61% of participants in the process survey said they wanted the utility to follow-up with additional ways to help them save energy.

Based on our finding in this section and in the earlier section about the types of recommendations given, HEES needs to be more linked to other IOU programs so that participants know exactly which programs are available to them, and which programs match the recommendations in the audit. The utilities should provide one-step contact and enrollment procedures for HEES participants. The effect of "following up" with customers, however, will depend on the reasons why HEES participants did not participate more frequently (e.g., if customers already participated, or don't need new appliances, following up will not increase participation rates in the respective programs.)

APPENDICES A-F
SAMPLE SURVEYS AND REPORTS
BY CHANNEL AND UTILITY

HEES Mail Surveys and Reports

The mail survey is the same across all utilities, with variations in the reports due to fuel type and utility (i.e., the SCE report presents only data and recommendations for electric; SoCalGas presents only gas recommendations; and PG&E/SDG&E present both gas and electric recommendations). The mail survey is offered in different languages, depending on the utility (English, Spanish, Chinese, Vietnamese, and Korean).

HEES Online Surveys and Reports

HEES In-Home Surveys and Reports

APPENDICES G-K
ODC SURVEYS AND ADDITIONAL ANALYSIS

ODC Surveys

Unique Recommendations Table

Comments on the Evaluation

Appendix A

Mail Survey and Report
(SCE as example)

Languages:
English
Spanish
Chinese
Vietnamese

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Dear SCE Customer:

We are offering you a FREE service that can help you save on your energy bills.

Would you like to:

- Find out what you can do to lower your electric costs?
- See how much electricity you use in a year?
- Know what appliances in your home use the most energy?

Take a few minutes to complete the enclosed Energy Use Questionnaire. We will analyze it for FREE and return the results to you.

You will receive, upon completing your Energy Use Questionnaire:

- ✔ A graph/chart of how much energy you use annually;
- ✔ An itemized list of the energy your electric appliances use;
- ✔ Energy saving tips and cost saving ideas.

After filling out this questionnaire, return it in the postage-paid envelope provided for you.

Your responses to this questionnaire will be used to provide you information about your energy use. If you have any questions about this FREE service, please call us at 1-800-362-7413

Si usted solo habla español, nosotros tenemos quien conteste sus preguntas sobre la conservacion de energia en su hogar. Llame gratis al 1-800-362-7413.

We look forward to hearing from you.

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Dear SCE Customer:

We are offering you a FREE service that can help you save on your energy bills.

Would you like to:

- Find out what you can do to lower your electric costs?
- See how much electricity you use in a year?
- Know what appliances in your home use the most energy?

Take a few minutes to complete the enclosed Energy Use Questionnaire. We will analyze it for FREE and return the results to you.

You will receive, upon completing your Energy Use Questionnaire:

- A graph/chart of how much energy you use annually;
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Si usted solo habla español, nosotros tenemos quien conteste sus preguntas sobre la conservacion de energia en su hogar. Llame gratis al 1-800-362-7413.

We look forward to hearing from you.

SOUTHERN CALIFORNIA EDISON

HOME ENERGY SURVEY

When answering the survey, please use a **pencil** and fill in the bubbles completely to insure that we can perform a quality analysis.

Correct ● Wrong ⊗ ✓

If you have questions about this survey please call us at **800-362-7413.**

SOUTHERN CALIFORNIA EDISON®
An *EDISON INTERNATIONAL*® Company

3161086

SOUTHERN CALIFORNIA EDISON®
An *EDISON INTERNATIONAL*® Company

FOR SERVICE AT: 6946 KINGSBURY BLVD

OPINIOND1
JENNIFER MITCHELL-JACKSON
OPINION DYNAMICS
6946 KINGSBURY BLVD
SAINT LOUIS, MO 63130

(per SCE request)

Please fill out the survey for the address to the left following "For Service at."

Thank you for participating. Please return your survey in the enclosed reply envelope and we will send you your **free** home energy analysis soon.

3161086

YOUR HOME AND LIFESTYLE

1. What type of building do you live in? (Choose one.)

- ○ One story house
- ○ Two-story house
- ○ Mobile home
- ○ Other

Apartment/Condo

- ○ High rise (4+ stories)
- ○ Low rise (1-3 stories)
- ○ Townhouse or row house (Neighboring units on one or both sides, but not above or below.)

2. Do you own or rent your home?

○ Own ○ Rent

3. What portion of the year is this home occupied?

○ Year round ○ Summer only ○ Winter only ○ Other seasons

4. Approximately how old is your home?

○ New (Less than one year) ○ 11-15 yrs. ○ 31-50 yrs.
○ 1-5 yrs. ○ 6-10 yrs. ○ 16-30 yrs. ○ Over 50 yrs.

5. How many rooms are in your home? (Only include areas used as living space. Do NOT include bathrooms and hallways.)

○ 1-2 rooms ○ 5 rooms ○ 7-8 rooms ○ 11-12 rooms
○ 3-4 rooms ○ 6 rooms ○ 9-10 rooms ○ 13+ rooms

6. What is the approximate square footage of the living space of your home? (Do not include unconditioned garage, attic, or basement space.)

○ Less than 500 ○ 1001-1250 ○ 2001-2500 ○ 4001-5000
○ 501-750 ○ 1251-1500 ○ 2501-3000 ○ Over 5000
○ 751-1000 ○ 1501-2000 ○ 3001-4000

7. Indicate the number of people that live in your home at least half of the year.

Number of People

1	2	3	4	5	6	7	8	9	10	11	12+
○	○	○	○	○	○	○	○	○	○	○	○

8. Are your home's exterior walls insulated?

○ Yes, all walls ○ No
○ Yes, some walls ○ Unsure

9. Choose the statement that best describes your attic/ceiling insulation.

○ Poor (0-3 inches) ○ Excellent (9 or more inches)
○ Fair (3-6 inches) ○ Unsure
○ Good (6-9 inches)

10. Choose the statement that best describes your windows.

○ All or most are double pane.
○ All or most are single pane.
○ My home has a mixture of single and double pane windows.

11. How would you describe air leakage/drafts around your windows and exterior doors?

○ Very drafty ○ Somewhat drafty ○ No noticeable drafts

12. Are you considering remodeling your home?

○ Yes, within a year ○ Yes, within two years ○ No

We would appreciate this information to help us better serve our customers. However, completing the next two questions is optional.

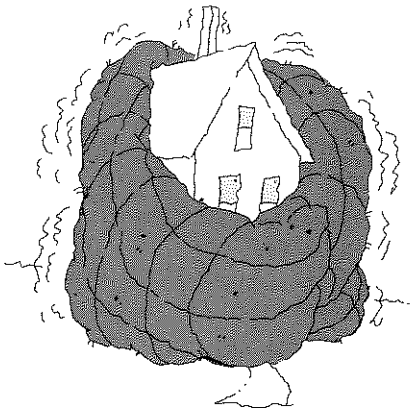
13. Annual household income.

○ $10,000-$19,999 ○ $30,000-$39,999 ○ $50,000-$74,999
○ $20,000-$29,999 ○ $40,000-$49,999 ○ $75,000+

14. Age of the head of the household.

○ 20 or younger ○ 25-34 ○ 45-54 ○ 65+
○ 21-24 ○ 35-44 ○ 55-64

3161086



HEATING

1. Do you pay to heat your residence?
   - ○ Yes
   - ○ No, it is part of my rent/condo fee. (Go to *Heating*, question 8.)
   - ○ No heating system. (Go to *Heating*, question 8.)

2. What type of heating system do you use to heat your home? (If there is more than one heating system, describe the system that provides most of the heat as "Main Heating" and the other system(s) as "Additional Heating.")

	Main Heating (shade only one box below)	**Additional Heating** (shade all boxes that apply)
Natural Gas		
Central forced air furnace	○	○
Wall/floor heater	○	○
Other system type	○	○
Electric		
Resistance/baseboard/ceiling	○	○
Heat pump	○	○
Forced air furnace	○	○
Wall/floor heater	○	○
Other system type	○	○
Woodstove/Fireplace Insert	○	○
Fireplace	○	○
Propane	○	○
Other Fuel	○	○

3. How old is your main heating system?
   - ○ New (less than one year)
   - ○ 1-5 years
   - ○ 6-10 years
   - ○ 11-15 years
   - ○ 16-30 years
   - ○ Over 30 years

4. Do you use a programmable thermostat for either heating or cooling?
   - ○ No
   - ○ Yes, cooling
   - ○ Yes, heating
   - ○ Yes, both

5. At what temperature is the thermostat set during the winter months? (Choose one answer for each time period.)

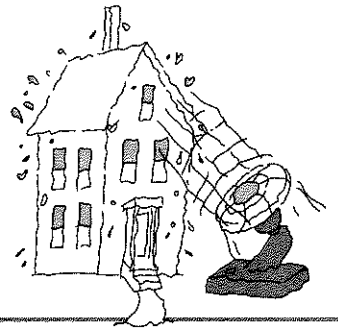
Typical settings

	Off	Below 55°	55-60°	61-63°	64-66°	67-70°	71-74°	Above 74°
Day	○	○	○	○	○	○	○	○
Evening	○	○	○	○	○	○	○	○
Night	○	○	○	○	○	○	○	○

6. How often do you use your **additional** heating system(s) during the winter months?
   - ○ No additional heating
   - ○ Rarely (20% of the time)
   - ○ Sometimes (20-50% of the time)
   - ○ Often (50-80% of the time)
   - ○ Always (80% or more)

7. How many rooms are heated by your **additional** heating system(s)?
   - ○ All rooms
   - ○ 1 room
   - ○ 2-3 rooms
   - ○ 4-7 rooms
   - ○ 8-10 rooms
   - ○ More than 10 rooms

8. How many portable electric heaters do you use?
   - ○ None
   - ○ One
   - ○ Two
   - ○ Three or more



COOLING

Central Air Conditioner

1. What type of central cooling system do you use?
   - ○ No central cooling system. (Go to *Room Air Conditioning*, question 6.)
   - ○ Standard central system
   - ○ Central with evaporative precooler
   - ○ Heat Pump
   - ○ Evaporative (swamp cooler)
   - ○ Other

2. Is your cooling cost included in your utility bill?
   - ○ Yes
   - ○ No, cooling is included in my rent/condo fee. (Go to *Room Air Conditioning*, question 6.)

3. Approximately how old is the central cooling unit?
   - ○ New (less than one year) ○ 6-10 years ○ 16-30 years
   - ○ 1-5 years ○ 11-15 years ○ 31+ years

4. At what average temperature do you set the thermostat during the summer months? (Choose one answer for each time period.)

	Typical settings						
	Below 70°	70-73°	74-76°	77-80°	81-83°	Above 83°	Off
Day	○	○	○	○	○	○	○
Night	○	○	○	○	○	○	○

5. Please indicate how often the central cooling unit is used during the summer. (Choose one for each time period.)

	Never	Rarely (20% of time)	Sometimes (40% of time)	Often (70% of time)	Always
Day	○	○	○	○	○
Night	○	○	○	○	○

Room Air Conditioning

6. How many window/wall air conditioners do you use?
   - ○ None (Go to *Fans*, question 9.)
   - ○ 1 unit ○ 2 units ○ 3 units ○ More than 3 units

7. What is the age of the window/wall air conditioner that is used most frequently?
   - ○ New (less than one year) ○ 6-10 years ○ 16+ years
   - ○ 1-5 years ○ 11-15 years

8. Please indicate how often the primary room air conditioner is used during the summer. (Choose one for each time period.)

	Never	Rarely (20% of time)	Sometimes (40% of time)	Often (70% of time)	Always
Day	○	○	○	○	○
Evening	○	○	○	○	○
Night	○	○	○	○	○

Fans

9. How many of the following fans are used in your home?

	1	2	3 or more
Attic ventilation fan	○	○	○
Portable fan	○	○	○
Ceiling fan	○	○	○
Whole house fan	○	○	○

10. Please indicate how often the following fans are used during the summer.

	Never	Rarely	Sometimes	Often	Always
Portable fan	○	○	○	○	○
Ceiling fan	○	○	○	○	○
Whole house fan	○	○	○	○	○

WATER HEATING

1. Do you pay to heat your water?
   - ○ Yes
   - ○ No, it is included in my rent/condo fee. (Go to *Laundry*, question 1.)

2. Which of the following best describes the water heater? (Choose one box below.)

Natural Gas
- ○ Standard separate tank
- ○ Tank with solar collectors
- ○ Other system type

Electric
- ○ Standard separate tank
- ○ Tank with solar collectors
- ○ Other system type

Propane/Other fuel
- ○ Any system type

3. Approximately how old is the water heater?
   - ○ New (less than one year)
   - ○ 1-5 years
   - ○ 6-10 years
   - ○ 11-15 years
   - ○ 16-30 years
   - ○ Over 30 years

4. What is the temperature setting of the water heater? (Medium is the standard factory setting.)
   - ○ High (more than 150° F)
   - ○ Medium (130°-150° F)
   - ○ Low (below 130° F)

5. Consider the total number of people in your home and then mark the total number of baths and showers taken during a typical day.

○ Less than one	○ 3	○ 6	○ 9
○ 1	○ 4	○ 7	○ 10
○ 2	○ 5	○ 8	○ More than 10

6. Do you use flow restrictors or energy-saving (low flow) showerheads?
   - ○ Yes, all showers
   - ○ Yes, some showers
   - ○ No
   - ○ Don't know

7. Do you use an instantaneous water heater (at sink)?
   - ○ No
   - ○ Yes

LAUNDRY

Clothes Washer

1. Do you have a washing machine? (Do not include coin-operated machines or machines in apartment common areas.)
   ○ Yes ○ No (Go to *Clothes Drying*, question 3.)

2. How many loads of laundry are washed **each week** in your home using this machine? (One answer for each temperature.)

	0	1	2	3	4	5	6	7	8	9	10+
Hot Water	○	○	○	○	○	○	○	○	○	○	○
Warm Water	○	○	○	○	○	○	○	○	○	○	○
Cold Water	○	○	○	○	○	○	○	○	○	○	○

Clothes Drying

3. Do you have a clothes dryer? (Do not include coin-operated machines or machines in apartment common areas.)
   ○ Yes ○ No (Go to *Refrigerators*, question 1.)

4. What is the heating fuel for your clothes dryer?
   ○ Natural gas ○ Electricity ○ Propane/other fuel

5. Approximately how many loads does your household dry **each week** using this clothes dryer?

○ None	○ 3	○ 6	○ 9	○ 12
○ 1	○ 4	○ 7	○ 10	○ 13
○ 2	○ 5	○ 8	○ 11	○ 14 or more

6. Do you line-dry clothing? (If so, choose one answer for each season.)
   ○ Do not have access to a clothesline (Go to *Refrigerators*, question 1.)

	Never	Rarely	Sometimes	Often	Always
Summer	○	○	○	○	○
Winter	○	○	○	○	○

REFRIGERATORS

1. How many refrigerators do you have plugged in?
   ○ 0 (Go to *Freezers*, question 1.) ○ 1 ○ 2 ○ 3 or more

2. What style best describes the refrigerator(s)?

	Refrigerator 1	Refrigerator 2	Refrigerator 3
Single Door	○	○	○
Top-Bottom	○	○	○
Side-by-Side	○	○	○

3. What size, in cubic feet, best describes the above refrigerator(s)? (Refrigerator information is usually found on a nameplate just inside the door.)

	Refrigerator 1	Refrigerator 2	Refrigerator 3
Very small (under 13 cu.ft.)	○	○	○
Small (13-16 cu.ft.)	○	○	○
Medium (17-20 cu.ft.)	○	○	○
Large (21-23 cu.ft.)	○	○	○
Extra large (over 23 cu.ft.)	○	○	○

4. What type of defrost does the above refrigerator(s) have?

	Refrigerator 1	Refrigerator 2	Refrigerator 3
Automatic (frost-free)	○	○	○
Manual	○	○	○
Partial automatic*	○	○	○

* (These have a frost-free refrigerator and a manual defrost freezer.)

5. What is the age of the above refrigerator(s)?

	Refrigerator 1	Refrigerator 2	Refrigerator 3
New (less than one year)	○	○	○
1-5 years	○	○	○
6-10 years	○	○	○
11-15 years	○	○	○
16-20 years	○	○	○
More than 20 years	○	○	○

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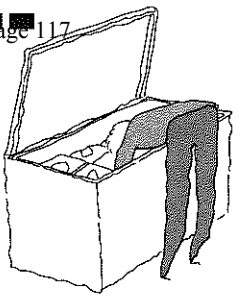


STAND-ALONE FREEZERS

1. How many stand-alone freezers do you have plugged in?
   (Do not include freezers that are part of your refrigerator unit.)
   ○ 0 (Go to *Food Preparation*, question 1.) ○ 1 ○ 2 or more

2. What style best describes the freezer(s)?

	Freezer 1	Freezer 2
Upright	○	○
Chest	○	○

3. What size, in cubic feet, best describes the above freezer(s)?
   (Freezer info. is usually found on a nameplate just inside the door.)

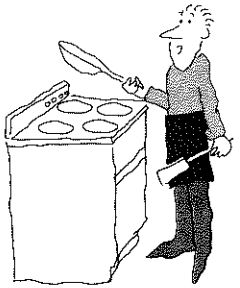
	Freezer 1	Freezer 2
Small (under 13 cu. ft.)	○	○
Medium (13-16 cu. ft.)	○	○
Large (17-20 cu. ft.)	○	○
Extra Large (over 20 cu. ft.)	○	○

4. What type of defrost does the above freezer(s) have?

	Freezer 1	Freezer 2
Automatic (frost-free)	○	○
Manual	○	○

5. What is the age of the above freezer(s)?

	Freezer 1	Freezer 2
New (less than one year)	○	○
1-5 years	○	○
6-10 years	○	○
11-15 years	○	○
16-20 years	○	○
More than 20 years	○	○



FOOD PREPARATION

1. What type of range/oven do you use?
   - ○ Electric only
   - ○ Natural gas only
   - ○ Combination: electric and gas
   - ○ Other

2. Does your range/oven have a pilot light?
   - ○ Yes, both the range and the oven have a pilot light.
   - ○ Yes, only the range has a pilot light.
   - ○ Yes, only the oven has a pilot light.
   - ○ No.

3. During a typical **week**, how often are the following meals prepared in your home? (Choose one answer for breakfast, lunch, and dinner.)

	Never	Rarely (1-2 times)	Sometimes (3-4 times)	Often (5-7 times)
Breakfast	○	○	○	○
Lunch	○	○	○	○
Dinner	○	○	○	○
Other	○	○	○	○

4. How often do you use your microwave oven?
   - ○ Never
   - ○ Rarely
   - ○ Sometimes
   - ○ Often
   - ○ We don't have a microwave oven.

5. How often do you run your dishwasher **each week**?
   - ○ We do not have or use a dishwasher. (Go to question 1 in the *Spas, Hot Tubs, and Pools* section.)
   - ○ 1
   - ○ 2
   - ○ 3
   - ○ 4
   - ○ 5
   - ○ 6
   - ○ 7
   - ○ 8
   - ○ 9
   - ○ 10 or more

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SPAS, HOT TUBS AND POOLS

1. Do you have a spa or hot tub at your home? (Do not include whirlpool bath tubs.)
   - ○ Yes, and I pay to heat it.
   - ○ Yes, but I do not pay to heat it. (Go to question 6.)
   - ○ No spa or hot tub (Go to question 6.)

2. How is the spa or hot tub heated?
   - ○ Electricity
   - ○ Electric heat pump
   - ○ Natural gas
   - ○ Propane (bottled gas)
   - ○ Solar with electric backup
   - ○ Solar with gas backup

3. Do you use an insulated cover on your spa or hot tub?
   - ○ Yes
   - ○ No
   - ○ No, but it is located indoors

4. Please indicate how often you use your spa or hot tub in both the summer and winter.

	Summer	Winter
Never	○	○
Rarely	○	○
Once a month	○	○
Once a week	○	○
2-4 times a week	○	○
5 or more times a week	○	○

5. How large is your spa or hot tub?
   - ○ Small (3 people or less)
   - ○ Medium (4 to 6 people)
   - ○ Large (7 or more people)

6. Do you have a swimming pool?
   - ○ Yes, and I pay for its energy use
   - ○ Yes, but it is in a common area and I do not pay for its energy use (Go to *Lighting*, question 1.)
   - ○ No pool (Go to *Lighting*, question 1.)

7. Is your pool pump over 10 years old?
   - ○ Yes
   - ○ No

8. Please indicate the number of **hours per day** the swimming pool filter operates. (Choose one for each season.)

	Summer	Winter
Not operated	☐	☐
Up to 2 hours	☐	☐
3-4 hours	☐	☐
5-6 hours	☐	☐
7-8 hours	☐	☐
9-12 hours	☐	☐
13-23 hours	☐	☐
24 hours	☐	☐

9. How often do you use natural gas to heat your pool?

	Summer	Winter
Never	☐	☐
Rarely	☐	☐
Once a month	☐	☐
Once a week	☐	☐
Two or four times a week	☐	☐
Keep pool heated continuously	☐	☐

LIGHTING

1. How many of the following light fixtures do you use inside or outside your home?

	None	1-4	5-9	10+
Standard incandescent light bulbs	☐	☐	☐	☐
Track lighting	☐	☐	☐	☐
Spot or flood lamps	☐	☐	☐	☐
Fluorescent tubes	☐	☐	☐	☐
Compact fluorescent light bulbs	☐	☐	☐	☐
Halogen torchiere (floor lamp)	☐	☐	☐	☐
HID (sodium vapor or metal halide)	☐	☐	☐	☐
Other	☐	☐	☐	☐

2. Which of the following best describes how often the interior lights are used in the evenings until bedtime?

☐ Most of the lights (more than ten lamps/bulbs on simultaneously)
☐ Many of the lights (six to nine lamps/bulbs on simultaneously)
☐ Some of the lights (three to five lamps/bulbs on simultaneously)
☐ Few lights (two or fewer lamps/bulbs on simultaneously)

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OTHER APPLIANCES

1. Indicate how many of the following appliances are used in your home. (Choose no more than one response for each appliance listed.)

	1	2	3 or more
Television	☐	☐	☐
VCR/DVD	☐	☐	☐
Stereo system	☐	☐	☐
Personal computer	☐	☐	☐
Humidifier	☐	☐	☐
Dehumidifier	☐	☐	☐
Well pump	☐	☐	☐
Irrigation pump	☐	☐	☐
Heated waterbed	☐	☐	☐
Aquarium	☐	☐	☐
Pond Pump	☐	☐	☐

2. How many **total** hours are your TVs on per day? (Include all TVs in your home.)

☐ No TVs ☐ 1-3 ☐ 7-10 ☐ 15-20 ☐ 27-35
☐ Less than 1 ☐ 4-6 ☐ 11-14 ☐ 21-26 ☐ More than 35

3. How often* do you use the following natural gas appliances? (Do not include propane/bottled gas appliances.)

	Never	Rarely	Occasionally	Frequently
Gas fireplace	☐	☐	☐	☐
Outdoor natural gas barbeque	☐	☐	☐	☐
Outdoor natural gas heaters	☐	☐	☐	☐
Outdoor natural gas lighting	☐	☐	☐	☐

*Rarely = about once/month, occasionally = up to once/week, frequently = 2 time/week or more.

4. If you **regularly use** (3 or more hours per week) any other appliances not mentioned, please select them below.

	Electric	Gas		Electric
Kiln	☐	☐	Shop tools	☐
Medical equipment	☐	☐	Welding equipment	☐
Other	☐	☐	Air Compressor	☐

Describe: _____

SOUTHERN CALIFORNIA EDISON®

An *EDISON INTERNATIONAL*® Company

Your Energy Report

Thank You for Participating in The Energy Savings Survey.

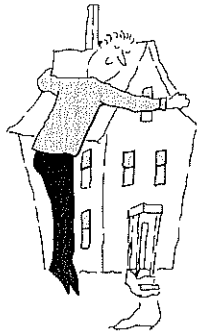
The enclosed package provides helpful information about your current energy usage. The tables and charts show how your household uses energy and how much various appliances cost you to operate. We have also listed possible ways to reduce your bill, along with estimates of the annual savings that could result if you consistently adopt these energy efficient practices as part of your day-to-day activities.

Thank you for your participation! Edison wishes to help you with your energy use. If you have questions about this information, please call 1-800-362-7413.

Southern California Edison.

JONES, BOB
765 WILLOWBROOK LN
ARCADIA CA 91766

ENGLISH2003



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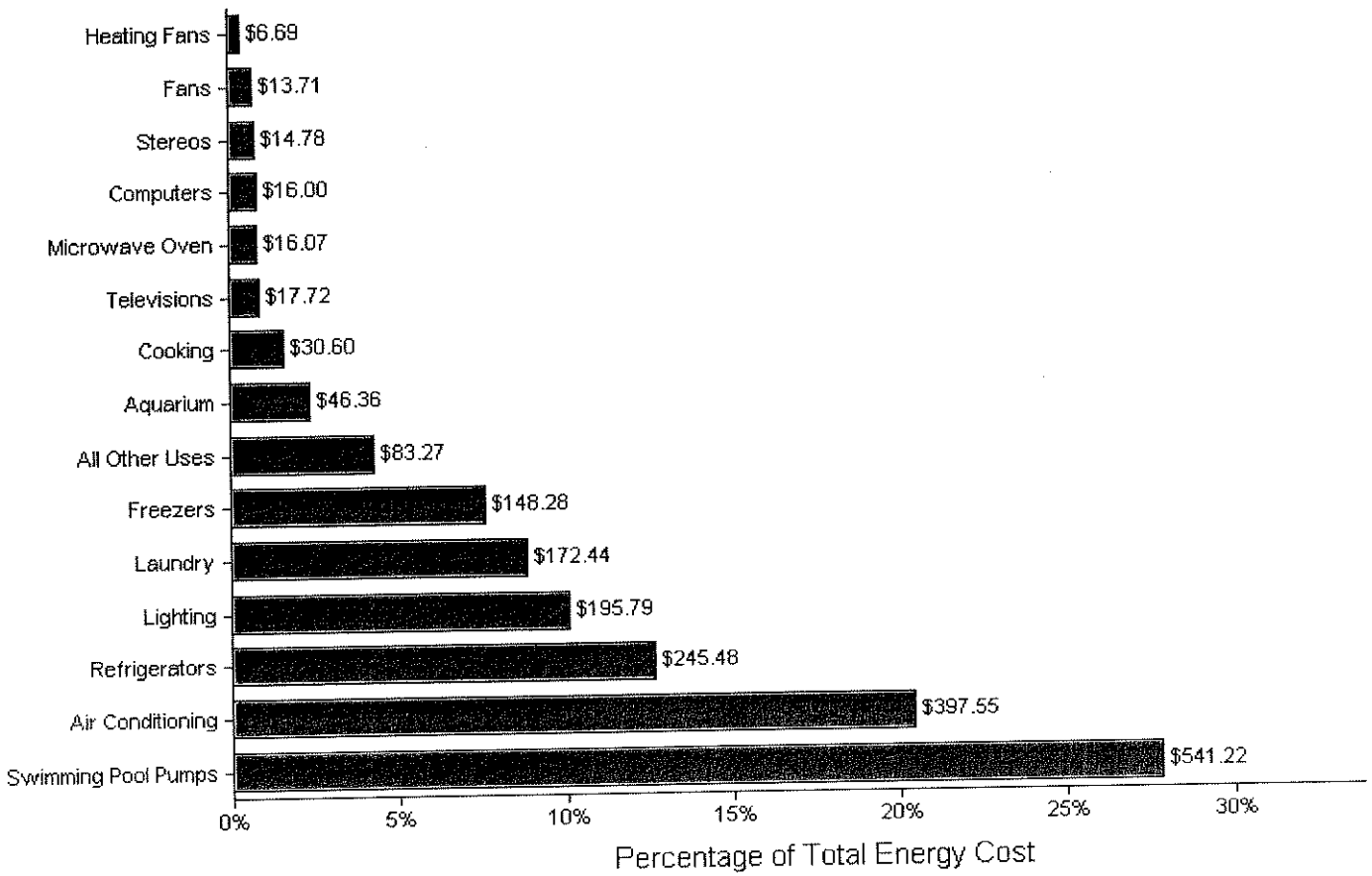
Energy Cost

Your Energy Cost

August 15, 2001 - August 8, 2002



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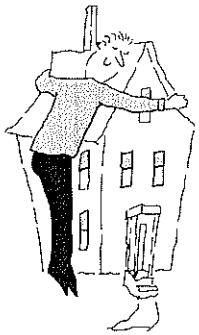

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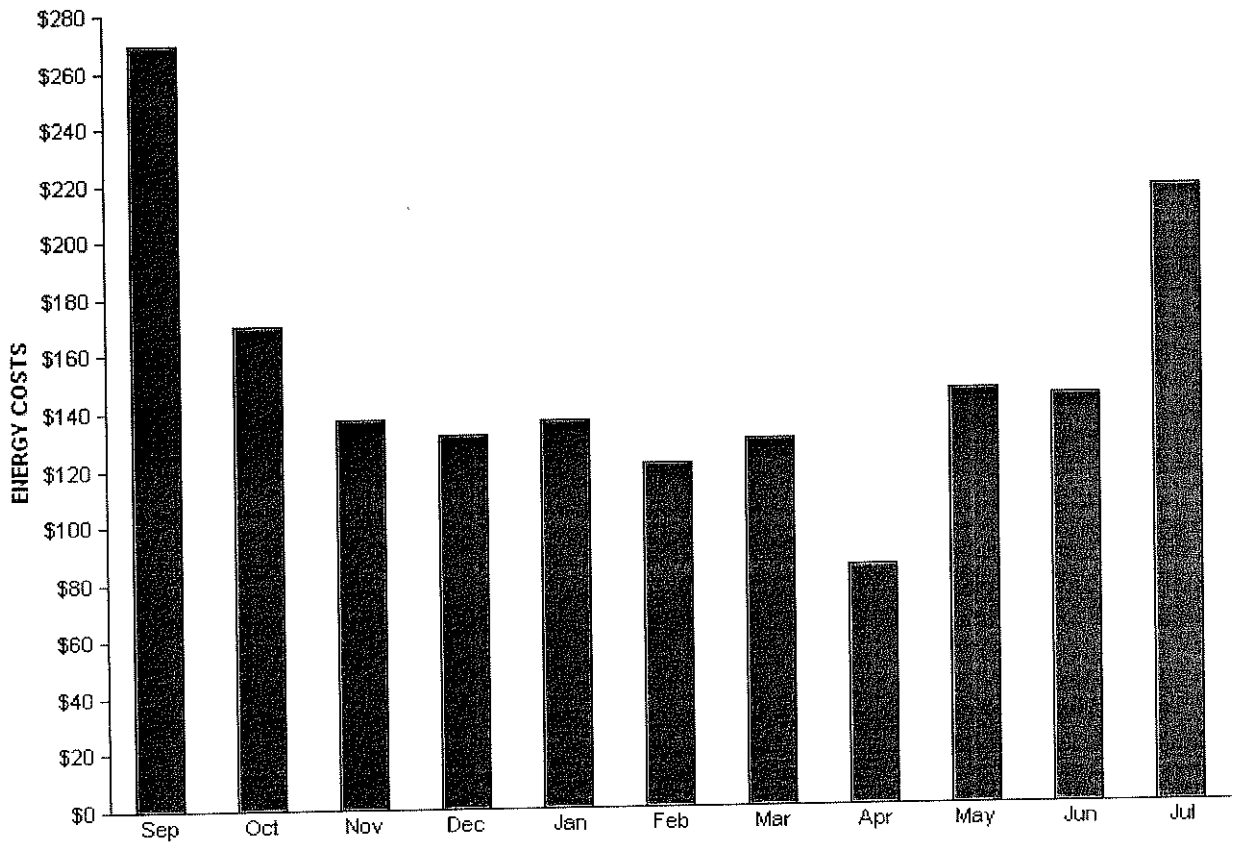
Annual Trend

Your Monthly Energy Cost

September 1, 2001 - August 1, 2002



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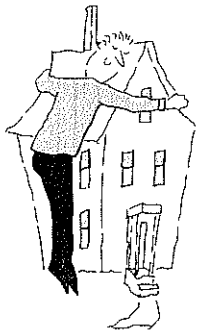

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Savings Tips

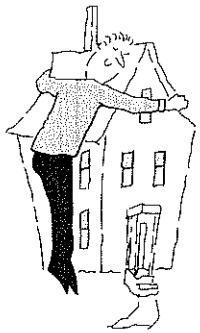
Cost & Energy Saving Measures

Listed here are money-saving measures that apply specifically to your household. Each of these measures represents an opportunity for you to save energy in your home and money in your pocket.

A Comment About Cooling...

Cleaning your air conditioner filter monthly helps your unit run better, as does an annual tune up. Shading windows with eastern, southern, and especially western exposures can help reduce unwanted heat gain. It is also good to keep your drapes or blinds closed on these windows during the day. Appliances such as dishwashers, clothes washers and dryers give off heat, so try to avoid their use during the hottest times of the day. If you decide it is time to replace your existing air conditioning unit, choose the most energy efficient model you can.

Starting April 1, 2002, through March 31, 2003, based on available funding, Southern California Edison offers up to $425 depending on the efficiency of the model purchased. Rebate reservations are no longer required. To apply, contact SCE's 24-hour automated line at 1-800-844-4509 or visit www.sce.com for a rebate application and more information. Applications are paid on a first come, first served basis. Some restrictions apply.



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Savings Tips

Cost & Energy Saving Measures

Listed here are money-saving measures that apply specifically to your household. Each of these measures represents an opportunity for you to save energy in your home and money in your pocket.

Raise Your Air Conditioner's Temperature Setting
Annual Savings: $43 - $53

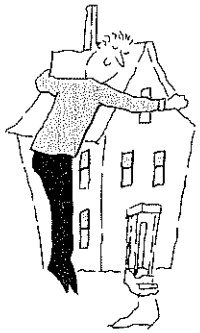
Raise the thermostat setting of your central air conditioner and save on cooling costs. We suggest that you keep your cooling thermostat set at 78 degrees to achieve the above savings.

Starting April 1, 2002, through March 31, 2003, based on available funding, Southern California Edison offers $20 for qualifying programmable thermostats. Rebate reservations are no longer required. To apply, contact SCE's 24-hour automated line at 1-800-844-4509 or visit www.sce.com for a rebate application and more information. Applications are paid on a first come, first served basis. Some restrictions apply.

Install a Whole House Fan
Annual Savings: $91 - $111

Adding a whole house fan to your home can give you "cool" savings by reducing your central air conditioning use. Warm air will be drawn out through your attic and be replaced with cooler outdoor air, decreasing the need for air conditioning. If you install a whole house fan, it is important to have enough attic ventilation to allow a large flow of air to move through the attic. Also, in the winter, be sure to seal the fan opening to the attic with either an insulated cover or polyethylene sheet.

Southern California Edison offers $75 for qualifying whole house fans. Rebate reservations are no longer required. To apply, contact SCE's 24-hour automated line at 1-800-844-4509 or visit www.sce.com for a rebate application and more information. Applications are paid on a first come, first served basis. Some restrictions apply.



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Savings Tips

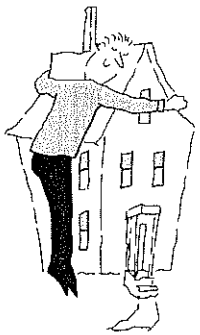
Cost & Energy Saving Measures

Listed here are money-saving measures that apply specifically to your household. Each of these measures represents an opportunity for you to save energy in your home and money in your pocket.

Replace Your Primary Refrigerator
Annual Savings: $72 - $97

Your primary frost-free refrigerator is over ten years old; you may want to replace it soon. An energy efficient refrigerator uses less electricity to operate, reducing your electric bills. Check the ENERGYGUIDE label posted on a new refrigerator to determine how much electricity it uses. The lower the number, the better. Although one model may cost less to purchase, it may cost more in the long run because it requires more electricity to operate.

SCE is offering an incentive of $35 or a 5-pack of compact fluorescent bulbs (a $50 value) when you recycle your old refrigerator. You can see if you qualify and schedule a pickup by calling (800) 234-9722 on weekdays between 8 am and 6 pm or by visiting our web site at www.sce.com. Hearing impaired call (800) 234-9710 and Spanish call (800) 253-5661. Restrictions apply and incentives are limited.



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Savings Tips

Cost & Energy Saving Measures

Listed here are money-saving measures that apply specifically to your household. Each of these measures represents an opportunity for you to save energy in your home and money in your pocket.

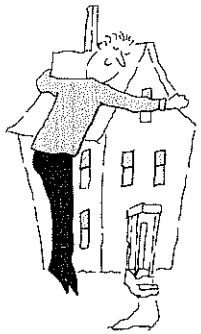
Replace Your Pool Pump Motor

If your pool pump motor is over 8 years old, you may want to replace it with an Energy-Efficient Pool Pump Motor (EEPPM).
Energy-efficient pool pump motors are usually interchangeable with standard motors. New motor design improvements and construction materials have made them more energy efficient - manufacturers use more copper to reduce electrical losses and better magnetic materials to lessen mechanical losses. These upgrades often result in longer life as well as increased efficiency.

Southern California Edison offers up to $250 for qualifying pool pump/motors. Rebate reservations are no longer required. To apply, contact SCE's 24-hour automated line at 1-800-844-4509 or visit www.sce.com for a rebate application and more information. Applications are paid on a first come, first served basis. Some restrictions apply.

Install A Timer For Your Pool Filter Pump

A timer for your pool filter, if not already installed, can be set to provide adequate filtration and chlorination during and after use of the facility. It will also minimize the run time of your pump, thereby reducing your energy usage. Set the timer to run the filter as few as four hours per day.



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Savings Tips

Cost & Energy Saving Measures

Listed here are money-saving measures that apply specifically to your household. Each of these measures represents an opportunity for you to save energy in your home and money in your pocket.

Caulk Cracks And Gaps Around The House

Caulking and weatherstripping is not limited to windows and doors. As much as 80 percent of outside air infiltration enters through places where two different outside materials meet. Examples of such places include where the wooden sill of the house meets the foundation, where dryer vents and fan covers pass through the wall, where plumbing pipes and telephone wires enter the house, and around electric outlets on outside walls. Look for these cracks on the interior and exterior of your house and fill them with caulk. For electrical outlets, either caulk around the electrical box or install a rubber gasket behind the cover plate. Use only caulking compounds which are flexible over large temperature ranges and that will last for many years. Check the manufacturer's label for the best type of caulk.

A Comment About Lighting...

Consider using compact fluorescent bulbs. An 18 watt compact fluorescent bulb will give you the same amount of light as a 75 watt incandescent at 25% of the operating cost. Compact fluorescent bulbs also last ten times longer than incandescent bulbs. You can also reduce your lighting usage with automatic timers that switch interior lights on and off at preset times. Timers will discourage intruders while using less energy than leaving lights on all night.

Appendix B

PG&E Online Survey and Report

PG+E online REPORT

My Home Profile

Describe your Home Profile by answering these questions. When you finish, click Next at the bottom of the page to save your answers. We will analyze your home profile and give you energy-saving ideas on the very next page.

What best describes your home?

( ) Detached single family ( ) Townhouse
( ) Semi-detached duplex ( ) Apartment/condo
(•) Multifamily ( ) Mobile home

How many levels does your home have, excluding basement and unfinished attic?

( ) 1 (•) 2 ( ) 3 ( ) >3

How old is your home in years?

( ) Less than 5 years ( ) 5-9 (•) 10-15 ( ) 16-20 ( ) 21-40 ( ) Over 40

Does your home have an attic?

( ) Yes (•) No

Do you have a basement?

( ) Heated ( ) Unheated (•) No

Excluding bathrooms and hallways, how many rooms are in your home?

5

How would you describe the size of your rooms?

( ) Above average (•) Average ( ) Below average

Here is our estimate of the size of your home based on your previous answers. If this is not accurate, you can change it here.

900 sq. ft.

How many people live in your home?

2

What is the fuel used in your primary heating system?

( ) Electric (•) Gas ( ) Oil ( ) Propane ( ) Wood

What is the fuel used to heat your water?

( ) Electric (•) Gas ( ) Oil ( ) Propane

How do you cool your home:

...Central A/C? ...Evaporative Cooling? ...Room A/Cs? How many?

○ Yes ◉ No ○ Yes ◉ No ○ Yes ◉ No <Choose one>

Do you own or rent?

○ Own ◉ Rent

Only answer the following questions if you rent.

Which, if any, utility bills are paid by your landlord?

☐ Electric ☐ Gas ☐ Oil ☐ Propane

Who pays for the following?

	I pay	Owner pays
heating?	◉	○
water heating?	◉	○
air-conditioning?		

E-mail Address

E-mail:
jmj@opiniondynamics.com

Please provide your e-mail address for future communications about energy programs that may benefit you.
◉ Yes ○ No

Go to Home Profile Results **Next ⇨**

BERKELEY, CA 94720

My Home | Find Ways to Save | Energy Calculators

Home Profile | My Appliances | My Energy Bills | My Report

Appliances in My Home

Please tell us about the appliances you have in your home. Answer all of the questions on this page and then click the Next button to go to the appliance results page.

Wood Stove
◯ Yes ◯ No

How many?
<Choose one>

Fireplace
◯ Yes ◯ No

How many?
<Choose one>

Fireplace Fuel
◯ Gas
◯ Wood
◯ Propane

Portable Space Heater
◯ Yes ◯ No

How many?
<Choose one>

Portable Space Heater Fuel
◯ Electric
◯ Propane

Halogen Pole Lamps (Torchiere)
◯ Yes ◯ No

How many?
<Choose one>

Bulb wattage?
◯ 300 Watt ◯ 500 Watt

Ceiling Fan
◯ Yes ◯ No

How many?
<Choose one>

Whole House Fan
◯ Yes ◯ No

Attic Fan
◯ Yes ◯ No

Dishwasher
◯ Yes ◯ No

How many?
<Choose one>

Clothes Washer
◯ Yes ◯ No

How many?
<Choose one>

Clothes Dryer Fuel

Clothes Dryer

How many?


◯ Yes ◯ No

<Choose one>

◯ Electric
◯ Gas
◯ Propane


Refrigerator
◯ Yes ◯ No

How many?
<Choose one>


Stand-alone Freezer
◯ Yes ◯ No

How many?
<Choose one>


Cooktop
◯ Yes ◯ No

Cooktop Fuel
◯ Electric ◯ Gas ◯ Propane

Oven Fuel


Oven
◯ Yes ◯ No

How many?
<Choose one>

◯ Electric
◯ Gas
◯ Propane


Microwave
◯ Yes ◯ No

How many?
<Choose one>


Television
◯ Yes ◯ No

# of Color
<Choose one>

# of B&W
<Choose one>


Computer
◯ Yes ◯ No

How many?
<Choose one>

Pool Heater Primary Fuel


Pool Pump
◯ Yes ◯ No

Pool Heater
◯ Yes ◯ No

◯ Electric
◯ Gas
◯ Oil
◯ Propane


Hot Tub
◯ Yes ◯ No

Hot Tub Primary Fuel
◯ Electric ◯ Gas ◯ Oil
◯ Propane


Well Pump
◯ Yes ◯ No

How many?
<Choose one>

Sump Pump

How many?


Yes No <Choose one>


Heated Waterbed
Yes No
How many?
<Choose one>


Humidifier
Yes No
How many?
<Choose one>


Dehumidifier
Yes No
How many?
<Choose one>

Miscellaneous Appliances (check all that you have)

Air Purifier	Aquarium	Auto Block Heater
Bottled Water Dispenser	Coffee Maker	Fax Machine
Copier	Electric Blanket	Grow Light
Heated Towel Bar	Instant Hot Water	Pipe and Gutter Heater
Kiln	Sauna	Steam Room
Compactor	Disposal	Wine Chiller

Previous Back to Home Profile Results Go to Appliance House... Next

BERKELEY, CA 94720

My Home | Find Ways to Save | Energy Calculators

Home Profile | My Appliances | My Energy Bills | My Report

My Energy Bills

Please use the tables provided below to enter your energy usage from your utility bills. Enter usage for at least 2, but no more than 13 consecutive bills. This information will be used to improve the accuracy of our estimates and to show how your bills compare to other similar homes.

Electric Bill

Rate Type:	Standard
Latest Bill Date:	Jun 2005

Date	kWh
Jun 2005	
May 2005	
Apr 2005	
Mar 2005	
Feb 2005	
Jan 2005	
Dec 2004	
Nov 2004	
Oct 2004	
Sep 2004	
Aug 2004	
Jul 2004	
Jun 2004	

Gas Bill

Latest Bill Date:	Jun 2005

Date	Therms
Jun 2005	
May 2005	
Apr 2005	
Mar 2005	
Feb 2005	
Jan 2005	
Dec 2004	
Nov 2004	
Oct 2004	
Sep 2004	
Aug 2004	
Jul 2004	
Jun 2004	

Previous | Back to Appliance Graph | Go to My Home Energy Center | Next

PG+E alive SURVEY

BERKELEY, CA 94720

My Home | Find Ways to Save | Energy Calculators

Home Profile | My Appliances | My Energy Bills | My Report

Home Profile Results

Thank you for entering your Home Profile. Here are the Top Ways to Save for your home. We've also estimated how your energy use compares with similar homes. Next, find out how much energy your appliances use. Analyze my appliances now. To find tools to help you find the most efficient improvement projects for your home, click on the Energy Calculators.

What are my top ways to save?

Savings Opportunities	Annual Savings
Water Heating	
Insulate water heater tank	$2 - $3
Install efficient showerheads	$17 - $28
Lighting	
Use compact fluorescent bulbs in recessed fixtures	$27 - $33
Use compact fluorescent bulbs in high-use lamps	$36 - $44
Replace halogen torchieres	$21 - $26
Heating and Cooling	
Seal leaks in ducts	$5 - $9

Detailed Analysis
Find more ways to save

How does my home compare?

Annual Total Energy Use

$857
Avg. Home

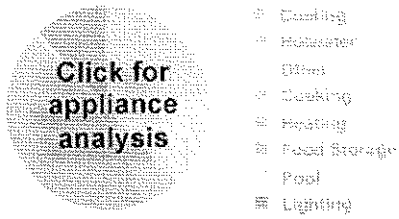
Uses Least Energy — Uses Most Energy

(•) Total ( ) Electricity ( ) Gas

My Energy Bills
Enter your energy bills to find out how your home's energy use compares.

How does my home use energy?

Annual Total Energy Cost



My Appliances
Go to the Appliances analysis section to find out how much it costs to run your appliances.

Seasonal Tips and Tools

Quick Tips
Periodic maintenance of your air conditioning unit will improve the efficiency of the system and extend its life. The service call will involve a general tune-up, inspection, and cleaning of the system. It is also possible that the refrigerant will need recharging.

Cooling Calc
Thinking about a new cooling system...cooling calc can help you decide.

Find Cooling Savings
Find ways to save on your cooling costs.

Previous | Back to Home Profile Questions | Go to Appliance Questions | Next

BERKELEY, CA 94720

Home Energy Analysis Report

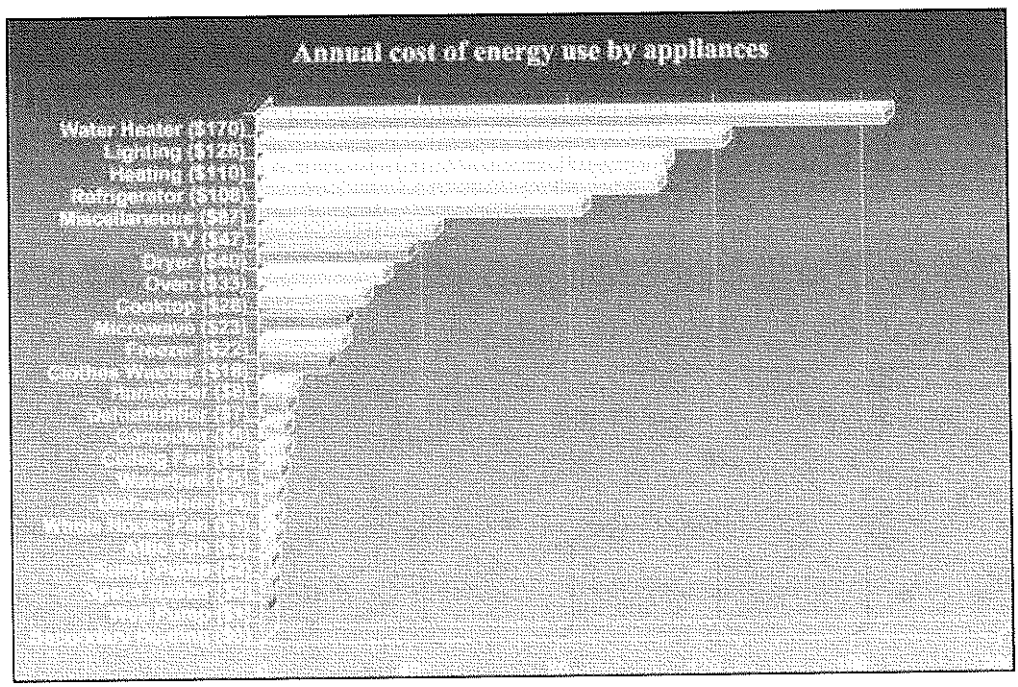
Your report is based on default answers for some sections of the home analysis. Because you have not answered all the detailed questions, your report may include Ways to Save that are not applicable to your home. For a more accurate analysis, complete all remaining sections of the home analysis.

Introduction
Here is your Home Energy Analysis Report designed to help you save energy and money. This report was prepared especially for your home. The figures on energy costs and savings are based on the information you provided. The savings opportunities included in this report can help you save money on your utility bills. Please keep in mind that all figures in this report are estimates.

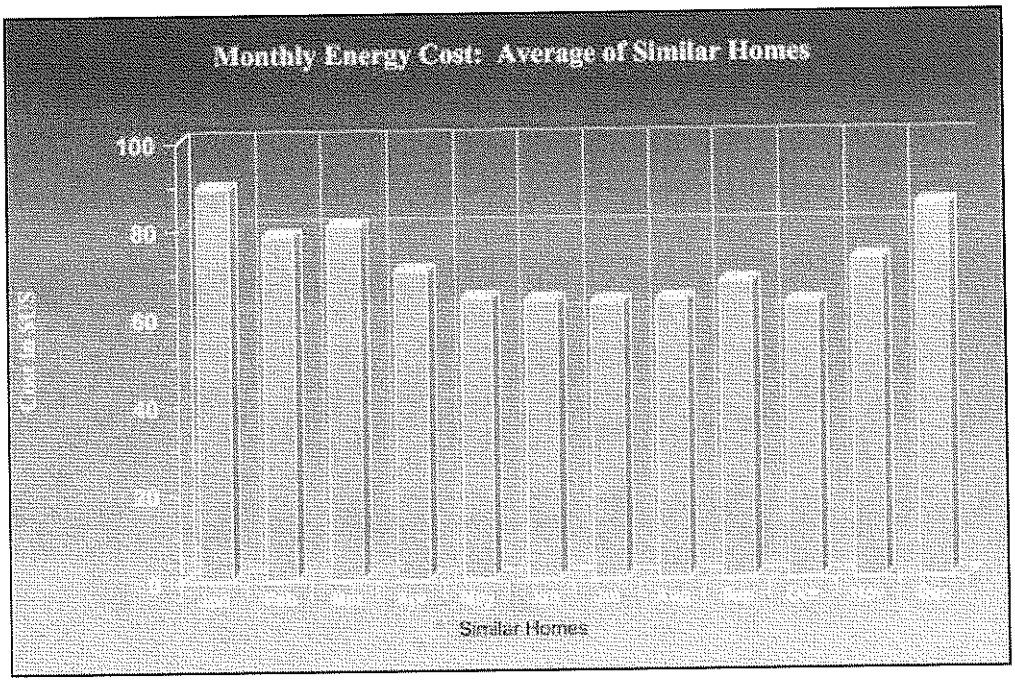
This report contains the following information:

- A summary of typical annual energy costs of appliances like yours
- An estimate of how much homes similar to yours spend on energy on a monthly basis
- Specific energy saving opportunities for your home

Appliance Energy Use
The typical annual energy costs of appliances like yours in your area are shown in the following chart. The actual cost to operate these appliances in your home will differ from the numbers given on this chart.



Monthly Home Energy Profile Energy costs vary month to month because of variations in the weather as well as how you use the appliances in your home. The following chart shows how costs vary on a monthly basis for homes similar to yours.



Ways to Save

This section of the report contains practical energy savings opportunities for all of the energy using systems in your home. For each of the ways to save, the report includes a description of the savings opportunity, a cost estimate, and an estimate of the energy and cost savings. There is also an estimate of the potential reduction in carbon dioxide emissions as well as water savings where appropriate.

Ways to Save for Hot Water

Wash full loads of clothes when possible

Your clothes washer generally uses the same amount of energy regardless of how much clothing is washed. Washing two small loads uses approximately twice as much energy as combining them into one full load. By combining loads together you reduce the number of loads you wash which in turn reduces your energy use.

The energy savings shown are based on reducing by 10% the number of loads that you do.

CAUTION: Be careful not to overload the clothes washer, since this can result in clothes not fully washing.

Click here to find out about $75 - $125 rebates from PG&E for qualifying ENERGY STAR® Clothes Washers.

Cost: $0 **CO2:** 14 lbs
Savings: $3-4 **Water:** 48 gallons

Lower the temperature of your water heater

People often have their water heater set much hotter than it needs to be. This not only wastes energy, but it also means that the tap water can be dangerously hot. You can typically lower the temperature of your water heater to 120 degrees F, and your showers will be just as warm as before.

The drawback to lowering the temperature of your water heater is that it reduces the amount of hot water available. Try setting your water heater to 120 degrees F for a few days to make sure that the hot water supply is sufficient. If you do experience a loss of hot water, increase the water heater temperature by 5 degrees F. and try it again for a few days.

The savings shown are based on lowering the temperature to between 120 and 130 degrees F.

CAUTION: When adjusting the temperature of an electric water heater, turn off the breaker or disconnect the fuse before opening the thermostat access doors. Exposed wiring can present an electrical hazard.

Click here to find out about $40 rebates from PG&E for qualifying Natural Gas Water Heater.

Cost: $0 **CO2:** 156 lbs
Savings: $9-15 **Water:** 0 gallons

Wrap water heater with an insulating blanket

Most older water heaters lose a significant amount of energy in the form of heat escaping through the walls of the tank. Most new tanks have sufficient insulation built into the walls to minimize this heat loss. But if your tank feels warm to the touch, then you would benefit by having the tank wrapped with an insulation blanket.

CAUTION: It is unsafe to cover with insulation the pressure relief valve or the piping associated with it.

CAUTION: For certain water heater models, wrapping the tank can void its warranty. You can check the owner's manual if you have one or look on the tank itself to see if this applies to you.

Cost: $11-19 **CO2:** 36 lbs
Savings: $2-3 **Water:** 0 gallons

Install low-flow showerheads

Energy-efficient showerheads have become much more common in recent years. In fact, they have been required in new homes since 1994.

A good quality efficient showerhead will save you a significant amount of energy and water without any sacrifice in the feel of your shower. They are generally very easy to

install as well. Don't be discouraged if you've had a bad experience in the past (we know what it's like to stand under a shower as water drips out and you struggle to keep warm). This problem is easily avoided by getting a quality unit.

But how do you know if a low-flow shower head is a quality unit? Ask at your local hardware or homebuilding store and explain that you don't want to sacrifice on comfort. They should be able to recommend a quality unit. Just to be on the safe side, make sure that you can return it if you are not satisfied for any reason.

Click here to find out about $75-$125 rebates from PG&E for qualifying ENERGY STAR® Clothes Washers.

Cost: $15-25 **CO2:** 237 lbs
Savings: $17-28 **Water:** 2,283 gallons

Maintain your water heater regularly

Regularly scheduled maintenance of your hot water heater will not only save energy but will also extend the life of the system. You should have a service professional inspect your water heater every two years or as often as recommended by the manufacturer.

Perhaps the best thing that you can do for your water heater is to drain the tank once a year. Sediment forms in the bottom of the tank, reducing the heat transfer to the water. By draining water from the bottom of the tank, the sediment is eliminated. There should be a drain valve near the bottom of the tank. Open this valve and let about five gallons of water (or enough so that the water runs clear) run into a bucket. Close the valve and you are all set.

Click here to find out about $75-$125 rebates from PG&E for qualifying ENERGY STAR® Clothes Washers.

Cost: $0 **CO2:** 53 lbs
Savings: $3-5 **Water:** 0 gallons

Install heat traps on your water heater

Heat traps are a type of one-way valve that can be installed on both the hot and cold water lines on your water heater. The purpose of heat traps is to reduce the heat loss from your water heater by "trapping" heat before it escapes. New, efficient water heaters often have this feature, but older models generally do not. As you can see from the savings, you can generally recover the cost of heat traps over several years.

Click here to find out about $75-$125 rebates from PG&E for qualifying ENERGY STAR® Clothes Washers.

Cost: $45-75 **CO2:** 169 lbs
Savings: $10-16 **Water:** 0 gallons

Insulate hot water pipes if not already done

If the pipes that supply hot water throughout your house are hot to the touch, then heat is being lost. By insulating hot water pipes you can reduce this loss. Since most of the water pipes in your house are behind walls and under floors, you won't be able to get to all of them. Start at the water heater and insulate all of the accessible pipe. Also, feel the pipe where cold water enters the water heater. If it feels warm, then you should also insulate that pipe as well.

Click here to find out about $75-$125 rebates from PG&E for qualifying ENERGY STAR® Clothes Washers.

Cost: $11-19 **CO2:** 56 lbs
Savings: $3-5 **Water:** 0 gallons

Ways to Save for Lighting

Use Compact Fluorescent bulbs in high-use lamps

Compact fluorescent bulbs typically save 65 - 70% over incandescent bulbs while providing the same light output. Compact fluorescents cost more than incandescent bulbs, but they last 10 times longer, so the increased cost is offset by the savings in replacement bulbs as well as the energy savings.

Compact fluorescent bulbs are now covered as part of the ENERGY STAR program. The ENERGY STAR label is your assurance that the product is among the most energy efficient in its class.

Click here to find out about up to $10 savings from PG&E for qualifying ENERGY STAR® Lighting Products.

Cost: $50-62 **CO2:** 111 lbs
Savings: $36-44 **Water:** 0 gallons

Replace Halogen Torchiere

Halogen torchieres are attractive, inexpensive fixtures that give off tremendous amounts of light. This accounts for their great popularity; over 45 million of them have been sold. However, the intense heat given off by halogen torchieres has put them in the spotlight (so to speak) as a fire hazard. Manufacturers are now scrambling to redesign the product.

Although the fire hazard has been the torchiere's most publicized disadvantage, the energy consumption of halogen torchiers is another cause for concern. Since it typically uses 300 or 500 watt bulbs, a single torchiere used six hours per day will cost between

$50 to $100 per year.

Some manufacturers now offer a compact fluorescent torchiere as an alternative. This is the same type of fixture with the halogen bulb replaced by compact fluorescent bulbs. The result is an equally attractive fixture that is safe and environmentally friendly. In fact, it uses 70% less energy than its halogen counterpart!

The savings shown reflect replacing halogen torchieres with compact fluorescent models. While the compact fluorescent models may have a higher purchase price, consider the energy savings and the price that you are willing to pay for safety.

Click here to find out about up to $10 savings from PG&E for qualifying ENERGY STAR® Lighting Products.

Cost: $54-66 **CO2:** 66 lbs
Savings: $21-26 **Water:** 0 gallons

Use Compact Fluorescent bulbs in recessed fixtures

Compact fluorescent bulbs typically save 65 - 70% over incandescent bulbs while providing the same light output. Compact fluorescents cost more than incandescent bulbs, but they last 10 times longer, so the increased cost is offset by the savings in replacement bulbs as well as the energy savings.

Compact fluorescent bulbs are now covered as part of the ENERGY STAR program. The ENERGY STAR label is your assurance that the product is among the most energy efficient in its class.

Click here to find out about up to $10 savings from PG&E for qualifying ENERGY STAR® Lighting Products.

Cost: $54-66 **CO2:** 84 lbs
Savings: $27-33 **Water:** 0 gallons

Ways to Save for Heating

Turn off the pilot light during the summer

A pilot light is a small flame used to light the burner when you turn on your heating system. Unless you turn it off manually, the pilot light burns continuously, and fuel is required to keep the pilot light operating.

Turning off the pilot light is something you can do yourself, but unless you are familiar with the procedure it is best to have a professional show you how it's done. You can schedule it along with regular maintenance, and most technicians will charge minimally (if at all) to show you. Keep in mind that the savings shown assume no cost for the procedure.

CAUTION: Turning off the pilot light is not recommended if your heating system is in a damp location.

Cost: $0 **CO2:** 259 lbs
Savings: $15-26 **Water:** 0 gallons

Install electronic ignition

Description: All gas-fired heating equipment has a burner. The burner is where the fuel is ignited and burned, creating heat. An ignition device is needed to initiate the combustion process (light the flame). Electronic ignition is a system that uses electricity to automatically ignite the fuel. Electronic ignition uses electricity to produce a spark to ignite a gas flame. It eliminates the need for a continuously burning pilot light.

Suitability: All oil furnaces have electronic ignition regardless of age. Most new gas furnaces are manufactured with electronic ignition. Older gas furnaces, manufactured prior to 1986, however, have a continuous pilot. If your gas furnace has a continuous pilot light, then it may be possible to convert it to electronic ignition. *Benefits:* Gas appliances with continuous pilot lights waste energy because the pilot burns fuel all the time. Electronic ignition saves energy because it eliminates the need for a continuously burning pilot light. The electronic ignition system automatically lights the pilot when the thermostat calls for heat. When the thermostat is satisfied, the gas is completely shut off and the pilot goes out.

Installation: First, you should try to determine whether or not your system has a continuous pilot light. Chances are, if your system was built after 1986, you already have electronic ignition. If not, then you probably have had to light the pilot or call a service person to light the pilot at one time or another. If you are considering converting an old furnace to electronic ignition, call your service contractor or fuel company. They can determine if it is feasible for your system and tell you how much it will cost. It will require a qualified service technician to do the installation.

Cost: $150-250 **CO2:** 436 lbs
Savings: $25-42 **Water:** 0 gallons

Ways to Save for Food Storage

Maintain your refrigerator regularly

Not only will proper maintenance save energy, but it will also extend the life of the refrigerator. Proper maintenance involves the following two steps:

1.) Brush and vacuum the coils of your refrigerator at least twice a year, making sure to remove as much dirt and dust as possible from the coils. (This can be done only if your particular model happens to feature exposed coils. Other models have the coils underneath.)

2.) Check the door seals by placing the end of a dollar bill against the door seal and then closing the door. If you can easily pull the dollar bill out then the seal needs to be replaced. You can get a new seal from most appliance parts and supplies stores.

CAUTION: Before doing either of these tasks, unplug your refrigerator first to avoid electric shock and possible damage to the refrigerator.

Cost: $0 **CO2:** 9 lbs
Savings: $2-4 **Water:** 0 gallons

Raise the temp. setting of your refrigerator

Refrigerators have a temperature control, which is usually located in the fresh food compartment. Most models have separate controls for the fresh food and frozen sections. The range on the knobs is typically 1 - 5 or A E; the higher setting generally makes it colder. By raising the temperature of your refrigerator you will save energy, but be careful because most foods stay fresh for shorter periods as the temperature rises. On the other hand, most foods also taste better when stored at warmer temperatures. The recommended range is 38-40 degrees F for the refrigerator and 0-5 degrees F for the freezer; typically these are near the middle of the temperature dials.

CAUTION: Foods keep fresh for shorter periods of time at higher temperatures. Most refrigerators are designed so that the entire range of temperature settings will preserve foods for an adequate period of time. However, be very careful to check foods for freshness before eating. If foods are not kept fresh as long as you would like, lower the storage temperature.

Cost: $0 **CO2:** 15 lbs
Savings: $4-7 **Water:** 0 gallons

Ways to Save for Water

Reduce amount of time you water your lawn

Your landscape requires less water when the temperature is lower. Humidity also can affect plants' water requirements -- lower humidity draws water from them at a greater rate. Readjust your sprinkler timer settings each season. Try reducing your total minutes per week by about 1/3 from summer to autumn, another from autumn to winter. Example: if you water your lawn for 60 minutes each week during the summer, set your system or timer so that you water for 40 minutes per week in the autumn. Reduce the time to 20 minutes in winter. (Don't forget to raise the settings from winter to spring, and then from spring to summer.).

Cost: $0 **CO2:** 0 lbs
Savings: $4-6 **Water:** 2,593 gallons

Replace grass with low-water use plants

There are many native and low water-use plants available at local nurseries. Such varieties of plants are also know as 'xeriscaping' plants. By converting some of your water-gulping grass or other plants with water-sipping alternatives, you'll lower the volume of water you apply -- over time, you'll save money on your water bill. Another water-saving strategy in any lawn is to group together

plants with similar watering needs.

Cost: $0 **CO2:** 0 lbs
Savings: $4-6 **Water:** 2,593 gallons

Ways to Save for Weatherization

Insulate your ducts

Your heating system uses a network of air ducts to distribute heat throughout your house. Air ducts that pass through unconditioned space will lose energy to the surroundings if they are not insulated. Insulating these ducts, if accessible, can minimize these losses and reduce your heating and cooling costs.

CAUTION: Once air ducts are insulated, it is difficult to check for and seal leaks. Make sure that all leaks are thoroughly sealed before insulating. Mastic is a durable alternative to duct tape and adheres well to dusty surfaces.

Click here to find out more energy efficiency tips on air ducts offered by PG&E.

Cost: $150-250 **CO2:** 30 lbs
Savings: $2-3 **Water:** 0 gallons

Seal leaks in air ducts

As heating systems age, leaks can develop in the ducts. Many duct systems are leaky even when newly installed. These leaks can contribute tremendously to your energy bill. The first step in reducing air duct losses is to examine ductwork in areas where it is easily accessible, typically in the basement, attic, or crawlspace. Look for deteriorated duct tape and replace it as necessary (Silicone caulk or mastic are more durable alternatives to duct tape. High-temperature vinyl tape is another option). Feel for air leaking at joints and seal these areas as well. Since there are large portions of ductwork that you cannot get to, you should consider having an HVAC professional inspect the system. You can have this done in conjunction with servicing of the system. If leaks are found they can often be closed with an aerosol-based sealant. (The aerosol is sprayed into the ducts with air so it emits no ozone-depleting fluorocarbons.)

Click here to find out more energy efficiency tips on air ducts offered by PG&E.

Cost: $15-25 **CO2:** 87 lbs
Savings: $5-9 **Water:** 0 gallons

BERKELEY, CA 94720

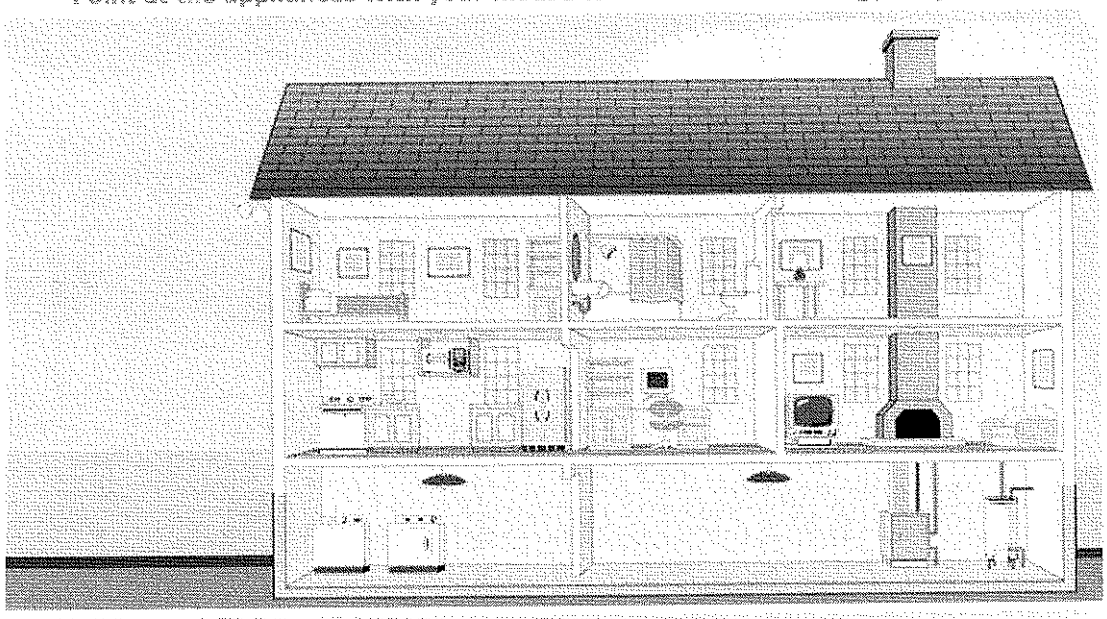
My Home | Find Ways to Save | Energy Calculators

Home Profile | My Appliances | My Energy Bills | My Report

Appliances in my home

Your appliance house contains all of the appliances you selected on the previous page. To find out how much it costs to run your appliances, just use your mouse. Point at an item to see the annual energy cost and usage. Click Next to see a graph of your energy use.

Point at the appliances with your mouse to see how much energy they use.



Previous | Back to Appliance Questions | Go to Appliance Graph | Next

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BERKELEY, CA 94720

My Home | Find Ways to Save | Energy Calculators

Answer Questions | View Ways to Save

How to find ways to save for your home...

Because energy savings can be found throughout your home, we have organized your ways to save into topics like weatherization, heating, lighting, etc. To find your ways to save, click on one of the topics. Then answer all the questions and go to the next page.

Click on a Topic...

Weatherization | Heating | Cooling | Hot Water | Kitchen | Lighting | Pool/Spa | Other

What you will receive:

You will learn how to reduce your energy bills with practical ideas for your entire home.

- **No-cost/Low-cost** Ways to Save that you can implement immediately
- Ways to Save which **Need Investment** but will pay off by reducing your energy bills
- Ways to Save, which are **Not Cost Justified**, but which you may still find interesting.

Previous | Back to My Home | Begin with Weatherization Questions | Next

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My Home | Find Ways to Save | Energy Calculators

Tools to help you improve your home

This section is filled with tools for finding the most efficient improvement projects for your home.

Lighting Improvements

Find out how to improve your home by using efficient lighting products.

Go to Lighting Module

Lighting Calculator
Find out how much you can save with energy-efficient light bulbs.

Cooling Improvements

Get detailed ways to improve your cooling system and save energy.

Go To Cooling Module

Cooling System Calculator
Estimate the cost of a new central A/C system and find out how much you can save.

Room A/C Calculator
Find the right size room air conditioner for any room in your home.

Heating Improvements

Get detailed ways to improve your heating system and save energy.

Go To Heating Module

Heating System Calculator
Estimate the cost of replacing your heating system and find out how much you can save.

Thermo Calc
Find out how much you can save by simply adjusting your thermostat.

Appliance Improvements

Compare your appliances with new energy-efficient models. Find out how much you can save.

Appliance Calc
Calculate how much it costs to run your appliances.

Fridge Calc
Calculate what you will save by replacing your old refrigerator with an energy-efficient model.

Washer Calc
Calculate what you will save by replacing your old washer with an energy-efficient model.

Dryer Calc
Calculate how much it costs to run your dryer. Learn what you will save by replacing your old dryer with an energy-efficient model.

Water Heater Calculator
Find out how much you can save by replacing your water heater.

Appendix C

SCE Online Survey and Report
(Long and Short)

SOUTHERN CALIFORNIA EDISON
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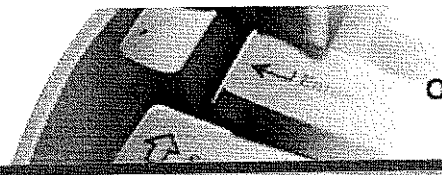

Online Home Energy Survey

Energy 15 Online Survey

- Privacy
- Introd
- Exit

To sign on, simply enter the SCE Service Account Number, and the first 5 characters of your Customer Name, without comma or space.

The service account number is on the upper-left portion of your bill and begins with 3-. If you receive a summary bill, the service account appears on the detail page for the residence you would like to survey. View a sample bill to help you locate this information.

Service Account Number 3-900-0001-24 (Enter as 3-xxx-xxxx-xx)

Customer Name dream (Enter first 5 characters only of your name as printed on your bill)

Examples: If customer name on top of the bill is Smith, John R, then you will enter SMITH. If customer name is Johnston, Steve M, then you will enter JOHNS. If customer name Sun, John, then you will enter SUNJO.

Complimentary $5 Starbucks Card (optional)
Your email is required to receive your complimentary $5 Starbucks Card. You'll receive the card within three weeks if you qualify. Limited to one card per household. Offer good while supplies lasts.

Your E-mail Address JenniferShen@s

Sign On

Long Version

SOUTHERN CALIFORNIA EDISON
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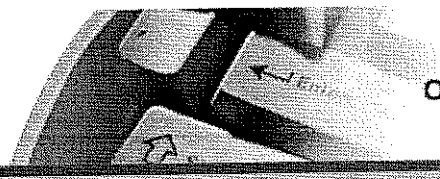


Online Home Energy Survey

Energy 15 Online Survey

- **New Si**
- **Exit**

Service Account Number: 3-900-0001-24

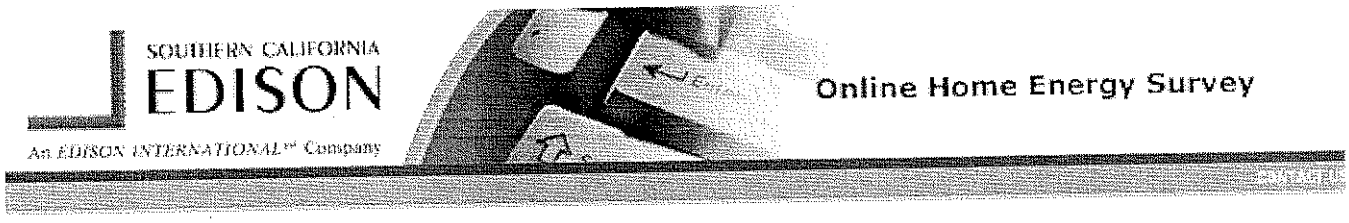
Customer Name: DreamTheater6

Service Address: 6 MAIN ST
CORONA

If this is your first visit, click on **New Survey**.

If you are coming back to finish/edit survey information entered earlier, click **Edit Survey**.

If you have previously completed a survey, either online or by mail, click **View Report** to see the online version of your report, or **Download Report** to download a file that can be printed. These options are available once you have completed and processed a survey.



Energy 15 Online Survey

DreamTheater6

Start

Welcome!

On the following pages, you will be asked to provide information on your energy usage. The more accurate you are, the more valuable your report will be in finding ways to save energy and money. Many questions are already answered with the most common survey responses, to save you time. Please make sure they correctly describe your situation, and change the answers if they do not. Just to remind you, the information you provide is kept confidential, and the transaction is secure and protected. See the Privacy Statement. If you need help completing the survey, see the Instructions.

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SOUTHERN CALIFORNIA EDISON
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Online Home Energy Survey

Energy 15 Online Survey

DreamTheater6

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Your Home and Lifestyle

1. What type of building do you live in?

(Choose one.)

One story house

2. Do you own or rent your home?

Own

3. What portion of the year is this home occupied?

Year round

4. Approximately how old is your home?

16 - 30 yrs.

5. How many rooms are in your home?

(Only include areas used as living space. Do NOT include bathrooms and hallways.)

7 - 8 rooms

6. What is the approximate square footage of the living space of your home?

(Do not include unconditioned garage, attic, or basement space.)

2001 - 2500 sq. ft.

7. Indicate the number of people that live in your home at least half of the year.

3 Number of People

8. Are your home's exterior walls insulated?

Yes, all walls

9. Choose the statement that best describes your attic/ceiling insulation.

Fair (3 - 6 inches)

10. Choose the statement that best describes your windows.

All or most are single pane.

11. How would you describe air leakage/drafts around your windows and exterior doors?

Somewhat drafty

12. Are you considering remodeling your home?

Yes, within a year

We would appreciate this information to help us better serve our customers. However, completing the next two questions is optional.

13. Annual household income.

$75,000+

14. Age of the head of the household.

35 - 44

proceed

SOUTHERN CALIFORNIA EDISON
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Online Home Energy Survey

Energy 15 Online Survey

DreamTheater6

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Exit

Heating

1. Do you pay to heat your residence?

Yes

2. What type of heating system do you use to heat your home?

(If there is more than one heating system, describe the system that provides most of the heat as "Main Heating" and the other system(s) as "Additional Heating.")

Main Heating

(Choose one.)

Natural Gas - Central forced air furnace

Additional Heating

(Choose all boxes that apply.)

- ☐ Natural Gas - Central forced air furnace
- ☐ Natural Gas - Wall/floor heater
- ☐ Natural Gas - Other system type
- ☐ Electric - Resistance/baseboard/ceiling
- ☐ Electric - Heat pump
- ☐ Electric - Forced air furnace
- ☐ Electric - Wall/floor heater
- ☐ Electric - Other system type
- ☐ Woodstove/Fireplace Insert
- ☐ Fireplace
- ☐ Propane
- ☐ Other Fuel

3. How old is your main heating system?

6 - 10 years

4. Do you use a programmable thermostat for either heating or cooling?

No

5. At what temperature is the thermostat set during the winter months?

(Choose one answer for each time period.)

Typical settings

Off Day

67 - 70°F Evening

67 - 70°F Night

6. How often do you use your additional heating system(s) during the winter months?

-------- select item --------

7. How many rooms are heated by your additional heating system(s)?

-------- select item --------

8. How many portable electric heaters do you use?

One

proceed

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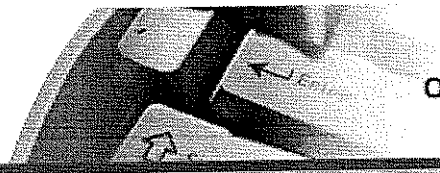

Online Home Energy Survey

Energy 15 Online Survey

DreamTheater6

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  - Other
  - Finish
- Exit

Cooling

Central Air Conditioner

1. What type of central cooling system do you use?

Standard central system

2. Is your cooling cost included in your utility bill?

Yes

3. Approximately how old is the central cooling unit?

1 - 5 years

4. At what average temperature do you set the thermostat during the summer months?

(Choose one answer for each time period.)

Typical settings

70 - 73°F Day

Off Night

5. Please indicate how often the central cooling unit is used during the summer.

(Choose one for each time period.)

Often (70% of time) Day

Rarely (20% of time) Night

Room Air Conditioning

6. How many window/wall air conditioners do you use?

None (Go to Fans, question 9.)

7. What is the age of the window/wall air conditioner that is used most frequently?

-------- select item --------

8. Please indicate how often the primary room air conditioner is used during the summer.

(Choose one for each time period.)

-------- select item -------- Day

-------- select item -------- Evening

-------- select item -------- Night

Fans

9. How many of the following fans are used in your home?

-------- select item -------- Attic ventilation fan

Two Portable fan

One Ceiling fan

-------- select item -------- Whole house fan

10. Please indicate how often the following fans are used during the summer.

Often Portable fan

Often Ceiling fan

-------- select item -------- Whole house fan

proceed

SOUTHERN CALIFORNIA EDISON
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Online Home Energy Survey

Energy 15 Online Survey

DreamTheater6

Water Heating

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1. Do you pay to heat your water?

Yes

2. Which of the following best describes the water heater?

(Choose one.)

Natural Gas - Standard separate tank

3. Approximately how old is the water heater?

1 - 5 years

4. What is the temperature setting of the water heater?

(Medium is the standard factory setting.)

Low (below 130°F)

5. Consider the total number of people in your home and then mark the total number of baths and showers taken during a typical day.

3

6. Do you use flow restrictors or energy-saving (low flow) showerheads?

Yes, some showers

7. Do you use an instantaneous water heater (at sink)?

No

proceed

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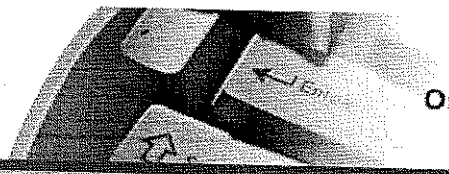

Online Home Energy Survey

Energy 15 Online Survey

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  - Other
  - Finish
- Exit

Laundry

Clothes Washer

1. Do you have a washing machine?

(Do not include coin-operated machines or machines in apartment common areas.)

Yes

2. How many loads of laundry are washed each week in your home using this machine?

(One answer for each temperature.)

0 Hot Water

3 Warm Water

-------- select item -------- Cold Water

Clothes Drying

3. Do you have a clothes dryer?

(Do not include coin-operated machines or machines in apartment common areas.)

No (Go to Refrigerators, question 1.)

4. What is the heating fuel for your clothes dryer?

-------- select item --------

5. Approximately how many loads does your household dry each week using this clothes dryer?

-------- select item --------

6. Do you line-dry clothing?

(If so, choose one answer for each season.)

Do not have access to a clothesline (Go to *Refrigerators*, question 1.)

-------- select item -------- Summer

-------- select item -------- Winter

Proceed

SOUTHERN CALIFORNIA EDISON
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Online Home Energy Survey

CONTACT US

Energy 15 Sample Report

Sample A, Sample

- Report
- Energy
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- Saving
- Downl
- Exit

Your Annual Energy Cost

Based on actual bills beginning July 1, 1999 and ending June 29, 2000

Appliance	Cost	% Total
Refrigerators	$400.14	23.56%
Pond Pump	$314.71	18.53%
Water Heating	$253.41	14.92%
Lighting	$161.68	9.52%
Fans	$139.41	8.21%
Freezers	$101.22	5.96%
Air Conditioning	$32.68	1.92%
Spot Heaters	$32.46	1.91%
Heating Fans	$26.86	1.58%
Air Compressor	$23.18	1.36%
Other Equipment	$22.02	1.29%
Medical Equipment	$22.02	1.29%
Cooking	$21.22	1.24%
Dishwashers	$12.04	0.70%
Microwave Oven	$11.35	0.66%
Computers	$11.21	0.66%
Televisions	$10.88	0.64%
Stereos	$10.59	0.62%
Laundry	$10.26	0.60%
All Other Uses *	$80.48	4.73%
Total:	$1697.91	

* includes computers, VCRs, and kitchen or other small appliances.

Missing report

SOUTHERN CALIFORNIA EDISON
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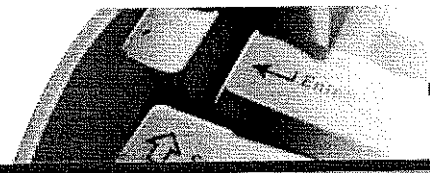

Online Home Energy Survey

Energy 5 Online Survey

Short Version

Please Sign-In

Complete the following **required** fields to access the Energy 5 online energy survey.

Your First Name: Jennifer
Your Last Name: Shen
Your E-mail: Jennifer.Shen@sce.com
Your ZIP code: 90012 Enter your service address zip code here.

Complimentary $5 Starbucks Card (optional)
Your email and mailing addresses are required to receive your complimentary $5 Starbucks Card. You'll receive the card within three weeks if you qualify. Limited to one card per household. Offer good while supplies lasts.

Your E-mail: Jennifer.Shen@sce.com (enter your email address again for confirmation)
Your mailing address:
Street: 8631 Rush Street
City: Rosemead **State:** CA
Mailing ZIP code: 91745

Sign On

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL™ Company

Online Home Energy Survey

CONTACT U

Energy 5 Online Survey

Shen, Jennifer

Home
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Exit

Energy 5 Online Survey

1. What type of home do you live in?

- One story house
- Two or more story house
- Mobile or Manufactured home
- Townhouse
- Apartment/Condo-High rise (4+ stories)
- Apartment/Condo-Low rise (1-3 stories)
- Other

2. Do you own or rent your home?

Own Rent

3. Approximately how old is your home?

- New (Less than one year)
- 1 - 5 yrs.
- 6 - 10 yrs.
- 11 - 15 yrs.
- 16 - 30 yrs.
- 31 - 50 yrs.
- Over 50 yrs.

4a. How many rooms are in your home?

(Only include areas used as living space. Do NOT include bathrooms and hallways.)

- 1 - 2 rooms
- 3 - 4 rooms
- 5 - 6 rooms
- 7 - 8 rooms
- 9 - 10 rooms
- 11 - 12 rooms
- 13+ rooms

4b. The approximate square footage of your home's living space is shown below. Please revise it as necessary.

- Less than 500 sq. ft.
- 501 - 750 sq. ft.
- 751 - 1000 sq. ft.
- 1001 - 1250 sq. ft.

- 1251 - 1500 sq. ft.
- 1501 - 2000 sq. ft.
- 2001 - 2500 sq. ft.
- 2501 - 3000 sq. ft.
- 3001 - 4000 sq. ft.
- 4001 - 5000 sq. ft.
- Over 5000 sq. ft.

5. Indicate the number of people that live in your home at least half of the year.

1 2 3 4 5 6 7 8 9 10 11 12+

6. Do you use any of the following ELECTRIC heating systems in your home?

Not used or do not have — Electric resistance heaters (baseboard, wall, floor, or portable)

Not used or do not have — Heat pump

Not used or do not have — Central electric resistance forced air system

Not used or do not have — Other electric heating system

7. Do you use any of the following ELECTRIC cooling systems in your home?

(Skip this question if cooling cost is includes in your rent/condo fee)

Not used or do not have — Central air conditioner

Not used or do not have — Central with evaporative pre-cooler

Not used or do not have — Central heat pump

Not used or do not have — Evaporative or swamp cooler

Not used or do not have — Room air conditioner

8. Which of the following best describes the primary water heating system in your home?

(Choose one.)

- Natural Gas Standard Tank
- Electric Standard Tank
- Propane Standard Tank
- Solar System with an Electric Back-up Tank
- Other Solar System
- Electric Tankless System
- Other Type of Water Heater
- Central system that serves multiple apartment units

9. What type of clothes dryer do you use in your home?

(Do not include coin-operated machines or machines in apartment common areas.)

- Natural gas Dryer
- Electric Dryer
- Propane Dryer
- (•) No Clothes Dryer

10. How many refrigerators do you have plugged in?

0 1 2 3 or more

11. How many stand-alone freezers do you have plugged in?

○ 0 ○ 1 ○ 2 or more

12. What type of range/oven do you use?

◉ None
○ Electric only
○ Natural gas only
○ Combination: electric and gas
○ Other

13. Do you use any of the following equipment in your home?

(Check all that apply.)

☐ Electric heated spa or hot tub
☐ Natural gas heated spa or hot tub
☐ Swimming pool pump
☐ Well Pump for all water use
☐ Irrigation pump
☐ Heated Water Bed
☐ Large Aquarium, Pond Pump, or Fountain (at least 1/4 horsepower)

14. Is any of the following equipment more than 10 years old?

(Check all that apply.)

☐ Electric heating system
☐ Central cooling system
☐ Room cooling system
☐ Refrigerator
☐ Stand-alone freezer
☐ Swimming pool pump

15. Please indicate your average monthly electricity bill for each of the periods below.

(Enter whole dollar amount only, no decimals.)

$ _____ Average for Winter months (November through April)

$ _____ Average for Summer months (May through October)

proceed

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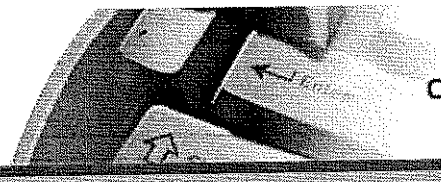

Online Home Energy Survey

Energy 5 Sample Report

Your Customized Report Is Ready

- Report
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Sample A, Sample
123 Main Street
Anytown USA

The information provided is an estimate only, based on the data you enter. SCE does not guarantee the results from the recommendations provided in the report.

To view your report, click on **Energy Charts** or **Savings Tips** on the right navigation bar. If you want to download a printable .PDF file, you can select **Download Report**, which will allow you to print the entire contents of the report on your own printer. For a comprehensive report of your home energy usage based on your actual billing history, take the **Energy 15 Sample Report**.

If you have questions, call 800-362-7413, Monday through Friday, 8:30 a.m. to 5:30 p.m., or email us by clicking on Contact Us.

Thank you for participating in SCE's Online Home Energy Survey program.

SOUTHERN CALIFORNIA EDISON
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Online Home Energy Survey

Energy 5 Sample Report

Sample A, Sample

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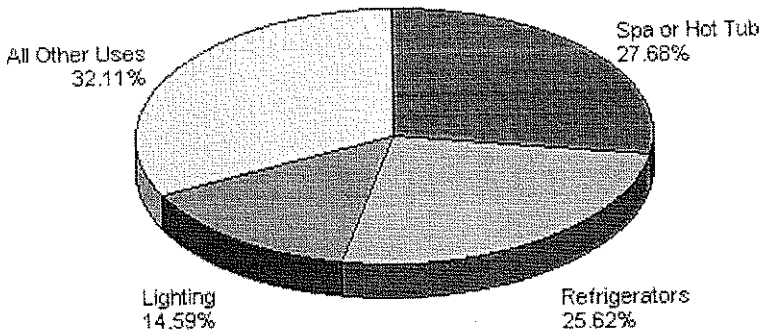
Percentage of Your Total Energy Cost



SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL℠ Company

Online Home Energy Survey

CONTACT US

Energy 5 Sample Report

Sample A, Sample

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Savings Summary

These money-saving measures apply specifically to your household, and represent an opportunity for you to save energy in your home and money in your pocket.

Annual Savings ($)			Tips
$87	-	$118	Replace Your Primary Freezer
$102	-	$138	Replace Your Primary Refrigerator
$437	-	$655	Cover Your Spa Or Hot Tub When Not In Use

* Actual savings will vary from household to household.

Other Helpful Tips

A Comment About Cooling...

A Comment About Lighting...

Energy 15 Sample Report

Your Customized Report Is Ready

Sample A, Sample
123 Main Street
Anytown USA

This report provides helpful information about how your household uses energy and how much various appliances cost to operate. We have also listed possible ways to reduce your bill, along with estimates of the annual savings that could result if you consistently adopt these energy-efficient practices as part of your day-to-day activities.

The information provided is an estimate only, based on the data you enter. SCE does not guarantee the results from the recommendations provided in the report.

To view your report, click on **Energy Charts** or **Savings Tips** on the navigation bar under **View Report**. If you want to download a printable .PDF file, you can select **Download Report**, which will allow you to print the entire contents of the report on your own printer.

If you have questions, call 800-362-7413, Monday through Friday, 8:30 a.m. to 5:30 p.m., or email us by clicking on Contact Us.

Thank you for participating in SCE's Online Home Energy Survey program.

Energy 15 Sample Report

Sample A, Sample

Your Annual Energy Cost

Based on actual bills beginning Dec 21, 2001 and ending Dec 19, 2002

Appliance	Cost	% Total
Air Conditioning	$1,965.57	39.82%
Refrigerators	$771.67	15.63%
Lighting	$443.44	8.98%
Waterbed Heaters	$363.40	7.36%
Cooking	$326.70	6.62%
Laundry	$182.30	3.69%
Computers	$160.08	3.24%
Humidifiers	$102.40	2.07%
Microwave Oven	$94.53	1.92%
Televisions	$83.71	1.70%
Shop Tools	$69.73	1.41%
Stereos	$62.47	1.27%
Heating Fans	$40.73	0.83%
Fans	$34.88	0.71%
All Other Uses *	$233.92	4.74%
Total:	$4,935.53	

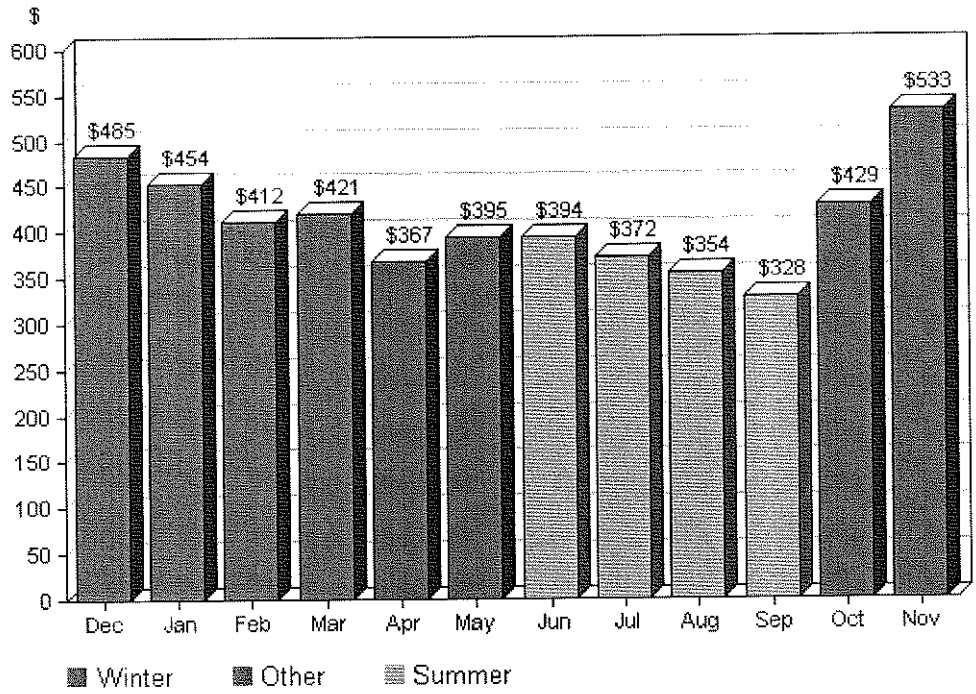
* includes VCRs and kitchen or other small appliances.

Energy 15 Sample Report

Sample A, Sample

Your Monthly Cost Trends

December 2001 - November 2002



Energy 15 Sample Report

Sample A, Sample

Your Monthly Usage Trends

December 2001 - November 2002

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Energy 15 Sample Report

Sample A, Sample

Savings Summary

These money-saving measures apply specifically to your household, and represent an opportunity for you to save energy in your home and money in your pocket.

Annual Savings ($)			Tips
$445	-	$544	Add a Whole House Fan
$20	-	$27	Upgrade Your Attic Insulation
$68	-	$93	Replace Your Main Refrigerator
$366	-	$448	Raise Your Air Conditioner's Temperature Setting

* Actual savings will vary from household to household.

Other Helpful Tips

A Comment About Cooling...

A Comment About Lighting...

A Comment About Water Beds...

Turn Your Air Conditioner Into A Cash Machine

Energy 15 Sample Report

Sample A, Sample

Add a Whole House Fan

Annual Savings: $445 - $544

Adding a whole house fan to your home can give you "cool" savings by reducing your central air conditioning use. Warm air will be drawn out through your attic and be replaced with cooler outdoor air, decreasing the need for air conditioning. If you install a whole house fan, it is important to have enough attic ventilation to allow a large flow of air to move through the attic. Also, in the winter, be sure to seal the fan opening to the attic with either an insulated cover or polyethylene sheet.

Based on available funding, Southern California Edison offers a "Summer Spectacular" rebate of $150 for a limited time. Rebate may not be available if funds are depleted. To apply and for more information, contact SCE's 24-hour automated line at 1-800-736-4777 or visit our web site for a rebate application. Applications are paid on a first-come, first-served basis. Some restrictions apply.

Appendix D

SDG&E/SCG Online Survey and Report

Energy Depot for Homes
Generic Audit Question Set

This is the standard question set for use with Energy Depot 4.x for Homes.

General Information

1. What type of home do you have?
   ____ Single family detached
   ____ Townhouse/condominium (End Unit)
   ____ Townhouse/condominium (Non-End Unit)
   ____ Apartment/duplex (End Unit)
   ____ Apartment/duplex (Non-End Unit)
   ____ Manufactured/mobile home

2. What is the approximate square footage of your home? (*Do not include areas that are not heated or cooled, such as garages, attic areas, unfinished basements, etc.)*

Less than 1000 sq. ft.	3,000 – 3,499 sq. ft.
1,000 – 1,499 sq. ft.	3,500 – 3,999 sq. ft.
1,500 – 1,999 sq. ft.	4,000 – 5,000 sq. ft.
2,000 – 2,499 sq. ft.	Greater than 5,000 sq. ft.
2,500 – 2,999 sq. ft.	

3. How many floors/stories is your home? (Do not include areas that are not heated or cooled, such as garages, attic areas, unfinished basements, etc.)
   ____ 1 ____ 1.5
   ____ 2 ____ 2.5
   ____ 3

4. What is the average ceiling height in your home? *(If you have vaulted or "cathedral" ceilings, pick the category that best represents the average ceiling height.)*
   ____ Standard (8')
   ____ High (10')
   ____ Very High (12')

5. What year was your home built?
   ____ before 1950
   ____ 1950 – 1959
   ____ 1960 – 1969
   ____ 1970 – 1979
   ____ 1980 – 1989
   ____ 1980 – 1989
   ____ 1990 – 1994
   ____ after 1994

6. Including yourself, how many people live in the home on a full-time basis?
   _____ Adults (0-10)
   _____ Children(0-10)

Energy Depot for Homes
Generic Audit Question Set

Structural Information

1. On what type of foundation is your home built? *(If more than one type, indicate approximate percent of each 25%, 50%, 75%, 100%) (The total must equal 100%.)*
   _____% Basement (*heated/cooled*)
   _____% Basement (*not heated/cooled*)
   _____% Crawlspace
   _____% Slab on grade

2. Are your floors insulated?
   ____Yes ____No ____Unknown

3. If you have a heated basement, are the basement walls insulated?
   ____Yes ____No ____Unknown

4. Are your exterior walls insulated?
   ____Yes ____No ____Unknown

5. How much insulation do you have in your attic or ceiling?
   ____ Poor (*0" to 3" of insulation*)
   ____ Fair (*more than 3" to 6" of insulation)*
   ____ Good (*more than 6" to 9" of insulation*)
   ____ Excellent (*more than 9" of insulation*)
   ____ Unknown

6. Please complete the following information about your windows and glass doors *(Do not count windows in areas like garages that are not heated or cooled.)*:

Size	Number	Type*
Small (*8-10 sq. ft.*)		
Medium (*11-15 sq. ft.*)		
Large (*16-20 sq. ft.*)		
X-large (*over 20 sq. ft.*)		
Sliding glass or French door		

   * Choices should include:
   1 - Single pane
   2 - Single pane with storm
   3 - Double pane
   4 - Tinted or Reflective Glass

7. How many exterior doors do you have? *(Do not count doors between unheated/uncooled areas and the outside, or glass doors entered in the section on windows.)* _____

8. What is the condition of the caulking and weather-stripping on your windows and exterior doors?
   ____ Poor
   ____ Average
   ____ Good

9. How would you describe your home in terms of air leakage/drafts?
   ____ Very leaky
   ____ Average
   ____ Very tight

Home Heating

Energy Depot for Homes
Generic Audit Question Set

1. What type is your main heating system?
   ____ Electric furnace (or electric "strip heat")
   ____ Electric heat pump
   ____ Electric baseboard or wall heaters
   ____ Electric thermal storage system
   ____ Electric ceiling cable
   ____ Gas furnace (forced air)
   ____ Gas furnace (forced air) with pilot
   ____ Gas boiler (hot water/steam pipes)
   ____ Gas space heater (floor or wall units)
   ____ Gas heat pump
   ____ Propane/LP gas furnace
   ____ Propane/LP furnace with pilot
   ____ Propane/LP boiler (hot water/steam pipes)
   ____ Propane/LP space heater (floor/wall unit)
   ____ Oil Furnace
   ____ Oil Boiler (hot water/steam pipes)
   ____ Geothermal heat pump
   ____ Add-On Heat Pump with gas Furnace
   ____ Add-On Heat Pump with Oil Furnace
   ____ Other
   ____ None

2. What year was your main heating system installed?
   ____ before 1980
   ____ 1980 – 1984
   ____ 1984 – 1989
   ____ 1990 - 1994
   ____ 1995 or newer

3. If you have a system that uses ducts to distribute the heat, where are the majority of the ducts located?
   ____ Attic/Garage
   ____ Crawlspace/Unheated Basement
   ____ Heated Basement
   ____ Within the living space

4. If the ducts are not within the living space, are they insulated?
   ____Yes ____No

5. At what temperature do you normally set your thermostat for heating? _____

6. If you set your thermostat back at night or while out of the house, to what temperature do you set it back? _____
   On average, how many hours per day do you set back your thermostat?_____

7. Do you have a programmable or clock thermostat?
   ____Yes ____No

8. Percent of home heated by main heating system? _____

Home Heating - Secondary

9. What type is your secondary heating system?
   ____ Electric furnace (or electric "strip heat")
   ____ Electric heat pump)
   ____ Electric baseboard or wall heaters

Energy Depot for Homes
Generic Audit Question Set

____ Electric thermal storage system
____ Electric ceiling cable
____ Gas furnace (forced air)
____ Gas furnace (forced air) with pilot
____ Gas boiler (hot water/steam pipes
____ Gas space heater (floor or wall units)
____ Gas heat pump
____ Propane/LP gas furnace
____ Propane/LP furnace with pilot
____ Propane/LP boiler (hot water/steam pipes)
____ Propane/LP space heater (floor/wall unit)
____ Oil Furnace
____ Oil Boiler (hot water/steam pipes)
____ Geothermal heat pump
____ Add-On Heat Pump with gas Furnace
____ Add-On Heat Pump with Oil Furnace
____ Other
____ None

10. What year was your secondary heating system installed?
____ before 1980
____ 1980 – 1984
____ 1984 – 1989
____ 1990 - 1994
____ 1995 or newer

11. If you have a secondary system that uses ducts to distribute the heat, where are the majority of the ducts located?
____ Attic/Garage
____ Crawlspace/Unheated Basement
____ Heated Basement
____ Within the living space

12. If the ducts are not within the living space, are they insulated?
____Yes ____No

13. At what temperature do you normally set your secondary heating system thermostat for heating? _____

14. If you set your thermostat back at night or while out of the house, to what temperature do you set it back? _____
For how many hours a day on average? _____

15. Do your secondary heating system have a programmable or clock thermostat?
____Yes ____No

16. Estimate the percent of home heated by secondary heating system. _____

Air Conditioning

1. What type is your main cooling system?
____ Central electric A/C
____ Electric Heat pump
____ Electric window or wall units
____ Gas heat pump
____ Central gas AC

Energy Depot for Homes
Generic Audit Question Set

____ Geothermal heat pump
____ Evaporative or "swamp" cooler
____ Other
____ None

2. What year was your main cooling system installed?
____ before 1980
____ 1980 – 1984
____ 1984 – 1989
____ 1990 - 1994
____ 1995 or newer

3. At what temperature do you normally set your thermostat for cooling? _____

4. If you set your thermostat up at night or while out of the house, to what temperature do you set it? _____
How many hours per day set up? _____

5. Estimate the percent of home cooled by the main system ____

Secondary Cooling

6. What type is your secondary cooling system?
____ Central electric A/C
____ Electric Heat pump
____ Electric window or wall units
____ Gas heat pump
____ Central gas AC
____ geothermal heat pump
____ Evaporative or "swamp" cooler
____ Other
____ None

7. What year was your secondary cooling system installed?
____ before 1980
____ 1980 – 1984
____ 1984 – 1989
____ 1990 - 1994
____ 1995 or newer

8. At what temperature do you normally set your thermostat for cooling? _____

9. If you set your thermostat up at night or while out of the house, to what temperature do you set it? _____
How many hours per day set up? _____

10. Estimate the percent of home cooled by the secondary cooling system _____

Water Heating

1. Please complete the following information about your water heater(s):

	Water Heater #1	Water Heater #2

Energy Depot for Homes

Generic Audit Question Set

Type **		
Tank size (gallons) Small (< 30 gal.) Medium (30-49 gal.) Large (50-69 gal.) Xlarge (> 70 gal.)		
In heated/cooled area? (*Y/N*)		
Year installed: Before 1970 1970-1979 1980-1989 1990-1995 1996-later		
Thermostat setting (*Warm, hot, very hot*)		
High-efficiency or with insulation wrap installed? (*Y/N*)		

** Choices include *electric, gas, propane, fuel oil, heat pump, heat recovery, solar, other, and none*.

2. Approximately how many showers are taken each week in your home? _____

3. What is the average length of each shower? _____

4. How many baths are taken per week? _____

5. Do you have low-flow showerheads or have new showerheads been installed since 1996?
   ____Yes ____No ____Unknown

Energy Depot for Homes
Generic Audit Question Set

Refrigerators/Freezers

1. Please complete the following information on your refrigerators and any stand-alone freezers. (*Do not count the freezer compartment in your refrigerator.*)

	Refrigerator #1	Refrigerator #2	Freezer #1	Freezer #2
Size (*Small, medium, large*)				
Type ***U**pright* ***C**hest*	N/A	N/A	_____ U _____ C	_____ U _____ C
Defrost Type	_____ Manual _____ Frost-Free	_____ Manual _____ Frost-Free	_____ Manual _____ Automatic	_____ Manual _____ Automatic
Gasket condition (*Good, fair, poor*)				
Year manufactured *				

* Choices include: *Before 1979, 1980-1984, 1985-1989, 1990 and later*

Energy Depot for Homes
Generic Audit Question Set

Lighting

1. Please complete the following information about the lights in your home. Please note that when you are asked the 'Number of bulbs', don't forget to count each bulb in every fixture.

INDOOR LIGHTING		
Type of Lighting	**Number of bulbs**	**Hours per day**
Small incandescent* (*< 40 Watts*)		
Medium incandescent (*40 - 75 Watts*)		
Large incandescent (*> 75 Watts*)		
Compact fluorescent		
Tube-type fluorescent		
Halogen Torche Bulbs		

* Incandescent lights are the standard "bulb" shaped lights used in most homes

OUTDOOR LIGHTING			
Type of Lighting	**Number of Bulbs**	**Control Type***	**Hours per day**
Outdoor security/flood lights - large (*Less than 150 Watts*)			
Outdoor security/flood lights - large (*More than 150 Watts*)			

* Options for control type are: Manually, Timer, Photocell, Motion sensor

Energy Depot for Homes
Generic Audit Question Set

Kitchen Appliances

1. Approximately how many loads per week do you run in your dishwasher? _____

2. Approximately how many times per week do you hand wash your dishes? _____

3. What type of energy does your range/oven use?
   ____ Electric
   ____ Gas with pilot light
   ____ Gas without pilot light
   _____ Propane with pilot
   _____ Propane without pilot
   ____ Other

4. Approximately how many burner-minutes per day do you use your range? _____
   (*Example: 2 burners for 15 minutes per day = 30 burner-minutes per day*)

5. Approximately how many hours per week do you use your oven? _____

6. Do you have a microwave oven?
   ____Yes
   ____No

7. If yes, then approximately how many minutes per day do you use your microwave? ____

Energy Depot for Homes
Generic Audit Question Set

Laundry

1. What type of clothes washer do you own?
   ____ None
   ____ Top-Loading
   ____ Front-Loading

2. Approximately how many loads per **week** do you run in your clothes washer? _____

3. What water temperature do you usually wash your clothes in?
   ____ Cold
   ____ Warm
   ____ Hot

4. Does your clothes washer have a "low water" setting for small loads? _____

   If so, how many loads per week use this setting? _____

5. Approximately how many loads per **week** do you run in your clothes dryer? _____

6. What type of energy or fuel does your clothes dryer use?
   ____ Electric
   ____ Gas with pilot
   ____ Gas without pilot
   ____ Propane with pilot
   ____ Propane without pilot
   ____ None

Energy Depot for Homes
Generic Audit Question Set

Pools/Spas

1. Do you have a swimming pool with a filter?
   ____ Yes ____ No

2. What is the size of the filter pump?
   ____ Small
   ____ Medium
   ____ Large

3. If your pool is heated, what type of heater is it?
   ____ Electric
   ____ Electric Heat Pump
   ____ Gas
   ____Solar w/electric back-up
   ____Solar w/gas back-up
   ____Solar only
   ____ Propane

4. If heated by electric or gas, what size is the heater? (*Estimate based on size of pool.*)
   _____ (small, medium, large)

5. Approximately how many hours per week do you run the filter and heater in each season?

Season	Heater Hours/Week	Filter Hours/Week
Spring		
Summer		
Fall		
Winter		

5. Do you have a spa or hot tub?
   ____Yes ____No

7. If so, what type of heater does it have?
   ____ Electric
   ____ Gas
   ____ Propane or LP Gas

8. What size is the hot tub/spa heater?
   ____ Small
   ____ Medium
   ____ Large

   **Help text explains Gas and Electric heater sizes

9. Approximately how many hours per week, on average, do you use your spa or hot tub?
   _____

Energy Depot for Homes
Generic Audit Question Set

Waterbeds

1. How many heated waterbeds do you have of each size listed below?

____ Single/twin Typically covered? Y/N
____ Full/Queen/King Typically covered? Y/N

Energy Depot for Homes
Generic Audit Question Set

Small Appliances

1. Please indicate the number of each of the following appliances that are used on a regular basis.

____ Hair dryer
____ Ceiling fan
____ Toaster oven
____ Coffee maker
____ Iron
____ Answering machine
____ Misc. Other
____ Clock radio
____ Curling iron
____ Slow cooker
____ Electric fry pan
____ Vacuum Cleaners
____ Video games

2. If you use any of the following, indicate the average number of hours per week they are used:

____ Color TV
____ VCR/DVD
____ Well Pump
____ Aquarium
____ Dehumidifier
____ Drill Press
____ B&W TV
____ Stereo
____ Portable Space Heater
____ Humidifier
____Power Saw

Home Office

1. How many of each of the following equipment do you use in your home?

Energy Depot for Homes
Generic Audit Question Set

___Computers
___Printers
___ Scanners

2. On average, how many hours a week do you actively use your computer?
_____

3. Do you leave your computer powered on when not in use? Y/N

Scanner

4. How many pages per week do you scan? _____

Do you leave your scanner on when not using it? Y/N

5 **Printer 1**

Type of printer:
Inkjet small (6ppm)
Inkjet medium (12 ppm)
Inkjet large (17 ppm)
Laser jet small (12 ppm)
Laser jet medium (15 ppm)
Laser jet large (19ppm)
Multi-function small (5 ppm)
Multi-function medium (12 ppm)
Multi-function large (19 ppm)

On average, how many Pages do you output per week? _____

Do you leave your printer on? Y/N

6 **Printer 2**

Type of printer:
Inkjet small (6 ppm)
Inkjet medium (12 ppm)
Inkjet large (17 ppm)
Laser jet small (12 ppm)
Laser jet medium (15 ppm)
Laser jet large (19ppm)
Multi-function small (5 ppm)
Multi-function medium (12 ppm)
Multi-function large (19 ppm)

On average, how many pages do you output per week? _____

Do you leave your printer on? Y/N

Seasonal or Extra Energy Items

1. Please provide the following information on any other significant energy-using appliances or equipment not previously addressed in this questionnaire.

Fuel Type	Units	Size	Hours/week	Season(s)*

Energy Depot for Homes

Generic Audit Question Set

(Gas, electric)	*(kW, HP, BTU/hr)*			

*Choices include: *Winter, spring, summer, fall, winter & fall, spring & summer, all year*

2

Residential Online Energy Audit Report

Dear Customer,

We are pleased to present your Home Energy Profile. Using your answers to the Home Energy Analysis and your billing history, a customized Profile has been developed to help you understand your home's energy usage.

As you review these results, presented in easy-to-follow graphs and charts, you will be able to spot the biggest energy users in your home and also see how extreme weather affects your heating and cooling equipment costs. And because your Profile is customized, you'll find energy tips and suggestions to consider that are specific to your home and lifestyle.

The Energy Advisor will save your analysis answers and results so that you can reference them again in the future. And if changes have occurred at your home and you want an updated report, simply enter the information that's changed and run your new Profile.

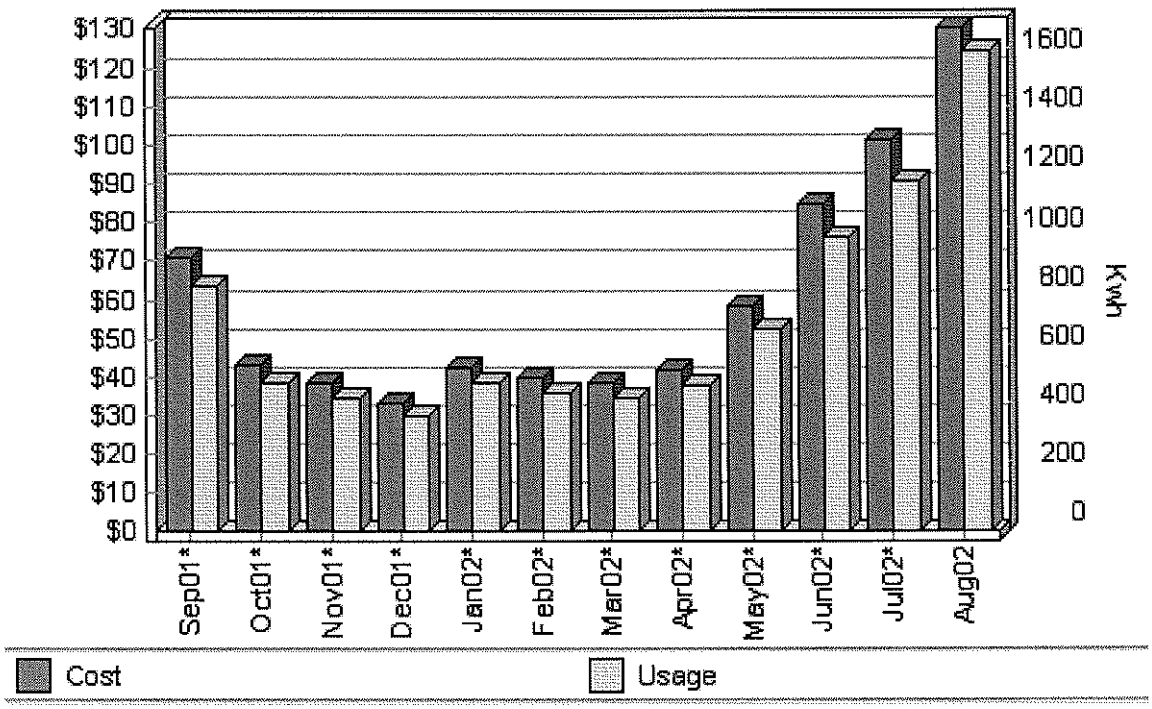
We hope you find the following information useful and keep it as a handy reference on how you can control your energy use and energy bills. Should you have any questions or comments about your Profile, please contact our Energy Efficiency Specialists via phone at (999) 123-4567.

When it's energy information you want, thank you for turning to the energy experts at Enercom

Sincerely,

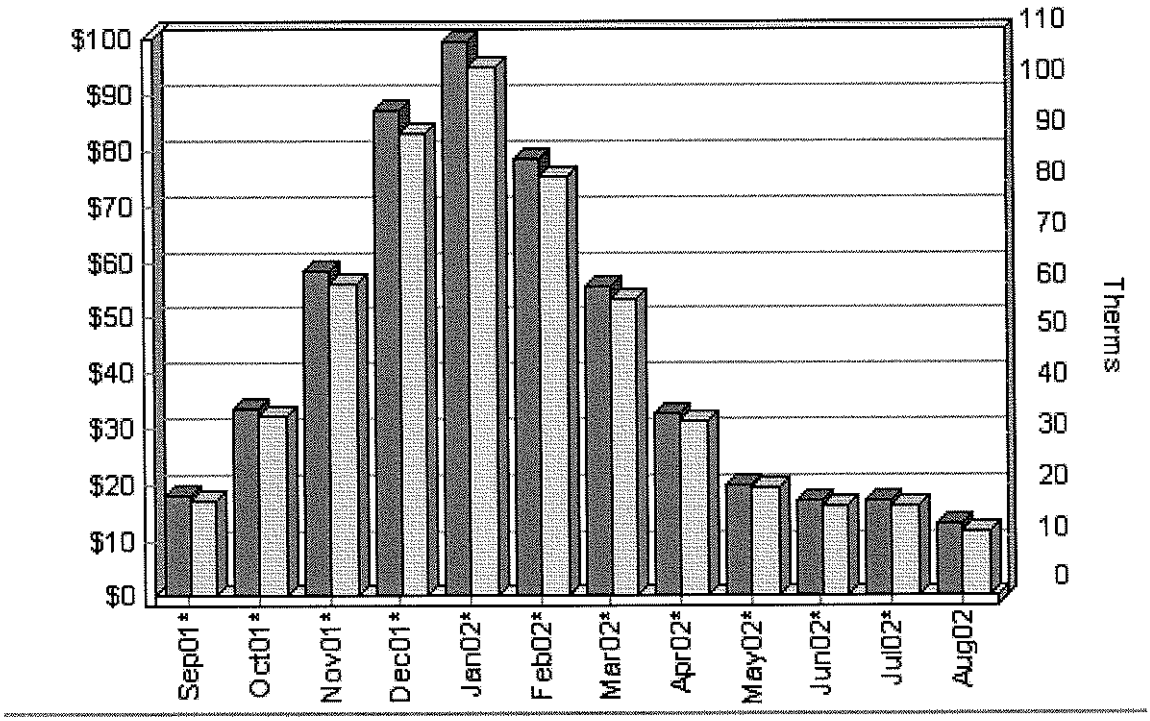
Enercom

Electric Bill History and Usage



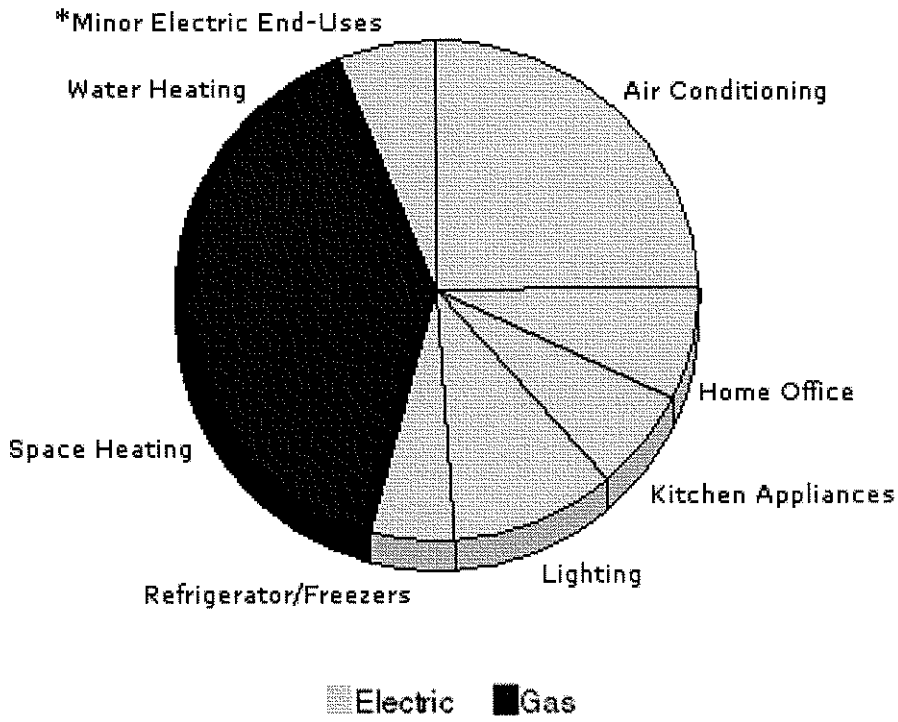
Be aware of when your home uses the most and least electricity.

Gas Bill History and Usage



Notice which are your peak usage months.

Energy Bill Break Down



Notice which appliances contribute to your energy costs.

Electric

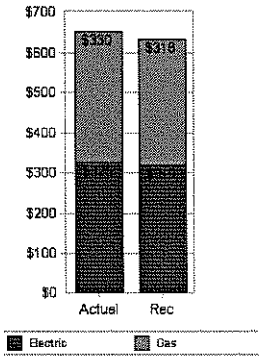
Appliance	Annual cost	Percentage of total annual energy bill
Laundry	$18	1%
Small Appliances	$27	2%
Space Heating	$28	2%
Refrigerator/Freezers	$63	5%
Kitchen Appliances	$77	6%
Home Office	$89	7%
Lighting	$122	10%
Air Conditioning	$297	24%
Total	$722	

* If your heating system is natural gas, you'll also see space heating costs under Electric. This is for your furnace fan (or pump, if applicable).

Gas

Appliance	Annual cost	Percentage of total annual energy bill
Laundry	$60	5%
Water Heating	$148	12%
Space Heating	$330	26%
Total	$537	

Windows and Doors

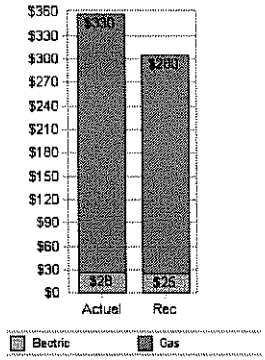


Your energy costs for Space Heating and Cooling, which are affected by Windows and Doors, are $655 per year. This is about 52% of your total energy bills.

Check your weatherstripping and caulking around windows and doors. Sealing windows and doors against air infiltration can help save on both heating and cooling costs.

Energy savings shown for Windows and Doors are based on combined space heating and air conditioning energy use.

Space Heating



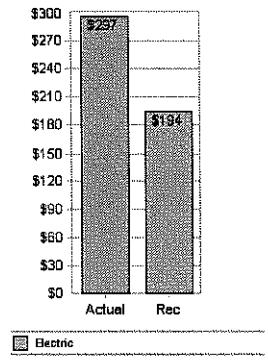
Your energy costs for Space Heating are $357 per year. This is about 28% of your total energy bills.

Don't make expensive repairs to your existing gas heating system. A new gas heating system can use 20% to 30% less energy.

Use a programmable or clock thermostat to decrease the temperature when you are asleep or at work. Every degree of setback for eight hours a day can reduce heating bills by 1% - 3%.

In cold climates, windbreaks provided by trees and shrubs can reduce winter fuel consumption by creating insulating air spaces and also reduce noise and air pollution.

Air Conditioning

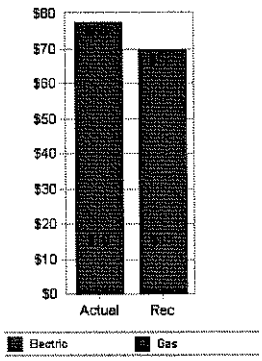


Your energy costs for Air Conditioning are $297 per year. This is about 24% of your total energy bills.

Consider replacing your existing air conditioning system with a new high-efficiency system. Look for a system with a SEER (Seasonal Energy Efficiency Rating) of 12 or higher.

Use a programmable or clock thermostat to raise the temperature when you are at work or away from the home. Every degree of setup can reduce cooling bills by 3-5% for an eight hour setup.

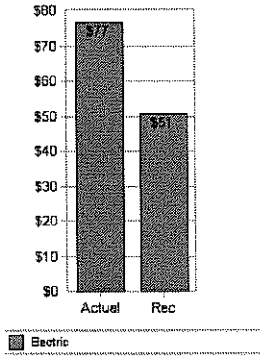
Laundry



Your energy costs for Laundry are $78 per year. This is about 6% of your total energy bills.

Wash clothes in cold water whenever possible.

Kitchen Appliances

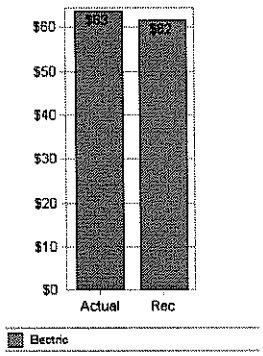


Your energy costs for Kitchen Appliances are $77 per year. This is about 6% of your total energy bills.

Reduce dishwasher energy use by using the 'energy saver' cycle, or by turning off the dishwasher at the end of the wash cycle and opening the door to 'air dry' the dishes.

Whenever possible, use your microwave instead of your range or oven - it will not only save energy but also help keep the kitchen cooler in summer.

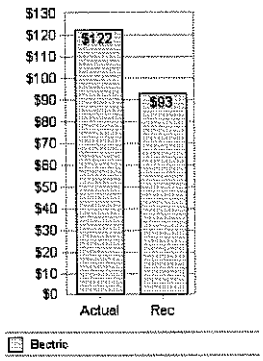
Refrigerator/Freezers



Your energy costs for Refrigerator/Freezers are $63 per year. This is about 5% of your total energy bills.

Replace worn or damaged refrigerator/freezer door gaskets to keep cold air from escaping and increasing operating costs. Also avoid opening the door unnecessarily.

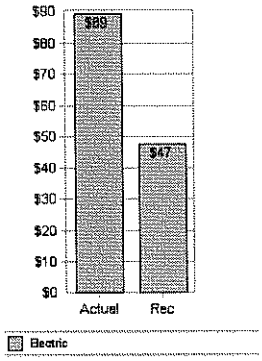
Lighting



Your energy costs for Lighting are $122 per year. This is about 10% of your total energy bills.

Consider replacing incandescent lights with compact fluorescents - they use about one fourth the energy and last up to ten times as long. The savings shown here assume that half of your incandescent lights are replaced with compact fluorescents.

Home Office



Your energy costs for Home Office are $89 per year. This is about 7% of your total energy bills.

Consider powering off your computer when not in use.

Consider powering off your printer when not in use.

Appendix E

SCE/SCG In-Home Survey and Report

PG&E In-Home and Mail Survey and Report *(See: Appendix A)*

Southern California Edison

ENERGY USE INVENTORY AND SAVINGS RECOMMENDATIONS

In-Home Audit Program: 1-800-278-8585

ESR: _____ W.O. #_____

Name:_____ Phone:_____Date:_____

Address:_____City:_____ Account #:_____Own / Rent

Energy Use Profile: # of People in Household_____ Annual kWh_____ kWh/Day_____
Estimated Sq. Ft._____ kWh/SF_____ Summer Peak Use (kWh)_____ Winter Peak Use (kWh)_____

1. HOME WEATHERIZATION

Age of Home_____ House Type: Single____ Apartment____ Mobile____ Condominium____ Ceiling Insulation_____inches
Construction: Wood____ Brick/Masonry_____ Basement: Full____Crawlspace____Exposed____

Recommendations:		Implement	Comments
a. Ceiling Insulation: R 19	a	E Y N	_____
b. Walls Insulation: R 11	b	E Y N	_____
c. Floor Insulation	c	E Y N	_____
d. Weatherize Doors/Windows	d	E Y N	_____
e. Storm Doors/Windows	e	E Y N	_____
f. Close Fireplace Dampers	f	E Y N	_____

2. AIR CONDITIONING

Central A/C____ Heat Pump____ Room A/C____(Evaporative Y / N)#_____ Size: Tons____ BTU____
Thermostat Setting____ #hrs use/day____ Age____

Recommendations:		Implement	Comments
a. Thermostat Setting of 78°F or Higher	a	E Y N	_____
b. Reflective Coating/Solar Screening on Windows	b	E Y N	_____
c. Install Vents in Attic	c	E Y N	_____
d. Turn Off When Away for Extended Periods	d	E Y N	_____
e. Reduce Use of Heat Generating Appliances During the Day	e	E Y N	_____
f. Clean/Replace Dirty Filters	f	E Y N	_____
g. Use Outside Air for Cooling When Possible	g	E Y N	_____
h. Shade Window Areas From Direct Sunlight	h	E Y N	_____
i. Use Portable or Whole House Fans When Possible	i	E Y N	_____

3. SPACE HEATING EQUIPMENT

Fuel:____ Equipment: Resistance_____ HP____ Portable Htrs____ Furnace____ Size: Tons_____ BTU____
Thermostat Setting_____ Setback Hours____ Age____

Recommendations:		Implement	Comments
a. Thermostat Setting of 68°F Day, 58°F Night	a	E Y N	_____
b. Automatic Setback Thermostat	b	E Y N	_____
c. Turn Heat Off/Down When Away for Extended Periods	c	E Y N	_____
d. Close Windows	d	E Y N	_____
e. Duct Insulation	e	E Y N	_____
f. Limit Bathroom/Portable Electric Heaters Use	f	E Y N	_____
g. Clean/Replace Dirty Filters	g	E Y N	_____

4. AIR DISTRIBUTION (DUCT) SYSTEM

Visual Inspection____ Customer Interview____

Percent of Ducts Located in: attic____full basement____crawlspace____garage____living space____
Percent of Accessibility to Ducts: attic____full basement____crawlspace____garage____living space____
Type of Ducts in Accessible Areas: flex ____ ductboard____ metal____
Evidence of Asbestos on Ducts: Y / N
Location of Air Handler: attic____full basement____crawlspace____garage____living space____roof____outside____

Recommendations:		Implement	Comments
a. Test Ducts for Leakage	a	E Y N	_____
b. Seal Ducts	b	E Y N	_____
c. Test Home for Carbon Monoxide	c	E Y N	_____

CODE: E (Energy Efficient); Y (Yes, Implement Recommendation); N (No, Recommendation Does Not Apply)

5. WATER HEATING

Fuel____ Type: Tank_____ Demand____ Size_____ Temp. Setting____ Load Control: Timer____Age:____

Recommendations:		Implement	Comments
a. Wrap Water Heater	a	E Y N	
b. Turn Down Thermostat to 120°F	b	E Y N	
c. Insulate Hot Water Pipes	c	E Y N	
d. Low Flow Showerheads & Aerators	d	E Y N	
e. Water Heater Timer	e	E Y N	
f. Repair Leaky Faucets & Pipes	f	E Y N	
g. Turn Heat Off/Down When Away for Extended Periods	g	E Y N	

6. POOL, SPA & JACUZZI

Spa/Jacuzzi: Above _____ Below ____ **Pool:** Above ____ Below ____
Motors: 1._____HP ____Hrs Use 2._____HP _____Hrs Use 3._____HP _____Hrs Use

Recommendations:		Implement	Comments
a. Operate Pool Equipment During Cool Times of Day/Evening (before 12pm or after 6pm)	a	E Y N	
b. Minimize Operating Time of Pump & Pool Sweep	b	E Y N	
c. Keep Filters & Strainers Clean	c	E Y N	
d. Cover When Not in Use	d	E Y N	

7. PUMPS (Other)

Number of:							
Well Pumps	____	Ponds & Fountains	____	Large Aquarium	____	Irrigation	____
HP Size	____	HP Size	____	Gal. Size	____	HP Size	____
Hours Used	____	Hours Used	____	Hours Used	____	Hours Used	____

Recommendations:		Implement	Comments
a. Operate During Cool Times of Day/Evening	a	E Y N	
b. Repair Leaky Tanks, Pipes and Faucets	b	E Y N	

8. RANGE/OVEN & MICROWAVE

Fuel____ Type Code____ Age_____ Microwave: Y / N Size____(S,M,L)

Type Code:
1. Combination 3. Oven Only
2. Separate 4. Stove Only

Recommendations:		Implement	Comments
a. Use Self-Cleaning Feature Sparingly & During Cool Times of Day/Evening	a	E Y N	
b. Preheat Only When Necessary	b	E Y N	
c. Use Microwave/Toaster Oven for Small Meals	c	E Y N	

9. REFRIGERATOR/FREEZER

Number of Refrigerators_____
Type: 1.____ 2.____ 3.____(Frost Free or Manual)
Style: 1.____ 2.____ 3.____(S/S or Top Mount)
Size: 1.____ 2.____ 3.____(Cubic Ft.)
Age: 1.____ 2.____ 3.____

Number of Freezers_____
Type: 1.____ 2.____ 3.____(Frost Free or Manual)
Style: 1.____ 2.____ 3.____(Chest or Vertical)
Size: 1.____ 2.____ 3.____(Cubic Ft.)
Age: 1.____ 2.____ 3.____

Recommendations:		Implement	Comments
a. Turn Extra Refrigerator/Freezer Off When Not In Use	a	E Y N	
b. Maintain Refrigerator Temperature at 37-40°F	b	E Y N	
c. Maintain Freezer Temperature at 0-10°F	c	E Y N	
d. Check Door Seals	d	E Y N	
e. Clean Condenser Coils	e	E Y N	
f. Keep as Full as Possible	f	E Y N	

10. OTHER TYPES OF REFRIGERATION

Number of:
Bottled Water Coolers ____
Beer Beverage Coolers ____ Age____Size____
Wine Beverage Coolers ____ Age____Size____
Ice Machine ____ Age____Size____
Other_____ Age____Size____

Recommendations:		Implement	Comments
a. Turn Off When Not in Use	a	E Y N	
b. Locate Appliance in a Conditioned Space	b	E Y N	

11. DISHWASHER
Installed: Y / N Age_____ Booster Heater: Y / N Economy Cycle: Y / N

Recommendations:		Implement	Comments
a. Turn Off During Dry Cycle	a	E Y N	
b. Operate During Cool Times of Day/Evening	b	E Y N	
c. Wash Full Loads	c	E Y N	

12. CLOTHES DRYER
Fuel_____ Wattage_____ Age_____

Recommendations:		Implement	Comments
a. Dry Full & Consecutive Loads	a	E Y N	
b. Operate During Cool Times of Day/Evening	b	E Y N	
c. Clean Lint Filter Regularly	c	E Y N	
d. Vent Exhaust to Outside & Check Vent/Filter Regularly	d	E Y N	

13. CLOTHES WASHER
Fuel_____ Type: Front____ Top____ Age_____

Recommendations:		Implement	Comments
a. Wash Full Loads	a	E Y N	
b. Use Cool/Warm Water When Possible	b	E Y N	
c. Operate During Cool Times of Day/Evening	c	E Y N	

14. LIGHTING

# Compact Fluorescent Bulbs	Indoor_____ Outdoor_____	# Timer Controls	Indoor_____Outdoor_____
# High Pressure Sodiums	Bulbs _____ Fixtures_____	# Photocells	Indoor_____Outdoor_____
# Halogen Floods	Bulbs _____ Fixtures_____	# Motion Sensors	Indoor_____Outdoor_____
# Mercury Vapor	Bulbs _____ Fixtures_____	Use of Dimmer Circuit: Y / N	Security Lighting: Y / N

Recommendations:		Implement	Comments
a. Replace Incandescents Bulbs With Compact Fluorescent Bulbs	a	E Y N	
b. Install Timers/Photocells on Security Lighting	b	E Y N	
c. Turn Off Unnecessary/Decorative Lighting	c	E Y N	

15. HOME ELECTRONICS

Number of:					
	Televisions_____	VCRs_____	Web TV Y / N	Computers _____	Copiers_____
	Printers: Laser_____	Other_____	Modems_____	Fax Machine_____	Other_____

Recommedations:		Implement	Comments
a. Turn Off When Not Used for Extended Periods	a	E Y N	

16. WATERBEDS Number____

Recommendations:		Implement	Comments
a. Make Bed With Comforter	a	E Y N	
b. Keep Window Closed	b	E Y N	
c. Turn Down Temperature	c	E Y N	

17. MISCELLANEOUS EQUIPMENT

Number of:								
	Electric Motors/Compressors____	HP____	Hours/Day_____					
	Humidifier/Air Purifier ____	Amps____	x	Volts____	=	Watts____	Hours/Day_____	
	Electric Golf Cart ____	Amps____	x	Volts____	=	Watts____	Hours/Day_____	
	Life Support Equipment ____	Amps____	x	Volts____	=	Watts____	Hours/Day_____	
	Type:_____							

Other: Lawn Mower____ Fuel: G / E Leaf Blower_____Fuel: G / E Hedge Trimmer_____Fuel: G / E

18. ADDITIONAL SERVICES

Recommendations:		Implement	Comments
a. Weatherization Packages	a	E Y N	
b. Compact Fluorescent Bulbs	b	E Y N	Wattage Removed____ Wattage Installed____ Room Hours Used

19. CALIFORNIA HOME ENERGY EFFICIENCY RATING SYSTEM (CHEERS)

Send More Information About CHEERS & Energy Efficiency Financing: Y / N

Appendix F

SDG&E In-Home Survey and Report – Short Version

SDG&E In-Home Survey and Report – Long Version *(Same as SDG&E Online in Appendix D)*

SDG&E Short Version
• In-Home Audit
• Measures on Survey

San Diego Gas & Electric ®
IN-HOME ENERGY SURVEY
PHONE: 1-800-411-7343 or WWW.SDGE.COM

Energy Use Profile:

DATE: _____

Account #: _____ EETS Site #: _____

Name: _____ Address: _____

City: _____ St: _____ Zip: _____

Home Phone: _____ Alt Phone: _____ Own / Rent

Est Sq Ft: _____ Housing Type: _____ # in HH: _____ Home Age: _____

(Energy Efficiency Rebates May Be Available on All Qualifying Measures)

1. Home Weatherization

Construction Type: Wood / Brick / Stucco

Recommendations:	Implement E	Y	N
a. Ceiling Insulation	E	Y	N
b. Wall Insulation	E	Y	N
c. Weatherization of Doors and Windows	E	Y	N
d. Close Fireplace Dampers	E	Y	N
e. Energy Efficient Windows	E	Y	N

* Consider installing or increasing your insulation to recommended levels.

Comments: _____

REBATES MAY BE AVAILABLE

2. Air Conditioning & Heating

Type: Central A/C / Heat Pump / Room A/C Qty: _____

Recommendations:	Implement E	Y	N
a. Thermostat Settings of 78 degrees or Higher for A/C	E	Y	N
b. Thermostat Settings of 68 degrees for or Lower for Heating	E	Y	N
c. Install Attic Vents	E	Y	N
d. Reduce Use of Heat Generation Appliances	E	Y	N
e. Clean/Replace Dirty Filters	E	Y	N
f. Shade Window Areas From Direct Sunlight	E	Y	N
g. Use Portable Fans When Possible	E	Y	N
h. Whole House Fans	E	Y	N

* Consider replacing units that are over 10 years old with newer energy efficient models.

Comments: _____

REBATES MAY BE AVAILABLE

3. Water Heater

Current Temp Setting: _____

Heater Type: Gas / Electric / Tankless / Instant

Recommendations:	Implement E	Y	N
a. Set to 120 degrees	E	Y	N
b. Insulate Hot Water Pipes	E	Y	N
c. Install Low Flow Shower Heads and Aerators	E	Y	N
d. Repair Leaky Faucets & Pipes	E	Y	N
e. Turn Down/Off Heat When Away For Long Periods	E	Y	N

Comments: _____

REBATES MAY BE AVAILABLE

4. Pool, SPA & Jacuzzi

Motor Size

Pool Type: Above / In Ground _____

SPA Type: Above / In Ground _____

Recommendations:	Implement E	Y	N
a. Operate Pump & Pool Sweepers During Off-Peak Hours (Before Noon & After 6:00 PM)	E	Y	N
b. Cover When Not in Use	E	Y	N
c. Keep Filters & Strainers Clean	E	Y	N

* Consider replacing pump & motors that are over 10 years old with newer energy efficient models.

Comments: _____

REBATES MAY BE AVAILABLE

5. Lighting

Recommendations:	Implement E	Y	N
a. Use of Compact Fluorescent Bulbs & Fixtures	E	Y	N
b. Install Timers/Photocells on Security & Outdoor Lighting	E	Y	N
c. Turn Off Unnecessary Decorative Lighting	E	Y	N
d. Replace T12 Fluorescents with T8	E	Y	N

* Consider replacing Incandescent Lights with Compact Fluorescent (CFL's)
* Consider replacing Older Fixtures with Newer Energy Efficient Models

Comments: _____

6. Refrigerator & Freezer

QTY: _____

Recommendations:	Implement E	Y	N
a. Turn Extra Refrigerators/Freezers Off When Not In Use	E	Y	N
b. Maintain Refrigerator Temperature at 37-40 Degrees F	E	Y	N
c. Maintain Freezer Temperature at 0-10 Degrees F	E	Y	N
d. Check Door Seals	E	Y	N
e. Clean Condenser Coils	E	Y	N
f. Keep Freezers as Full as Possible	E	Y	N

* Consider replacing units that are over 10 years old with newer energy efficient models.

Comments: _____

Code: E (Energy Efficient); Y (Yes, Implementation Recommended); N (No, Recommendation Does Not Apply)

SDGE
A Sempra Energy utility™

Appendix G

General Population Survey

Statewide HEES Evaluation
General Population Questionnaire

ODC # 6491
Final 06/20/05

[DISPOSITION CODES FOR SPANISH-SPEAKING, NON-SPANISH LANGUAGE BARRIERS]

[PULL SAMPLE FOR IOU UTILITIES]

Introduction

Hello, my name is ____.

I am calling on behalf of the electric utilities in California and the State of California's Public Utilities Commission. We are conducting a brief survey looking at how residential customers use energy in their homes so that we can provide customers with detailed information to help them save energy. My questions should take about 10 minutes to complete. Your responses will be kept strictly confidential.

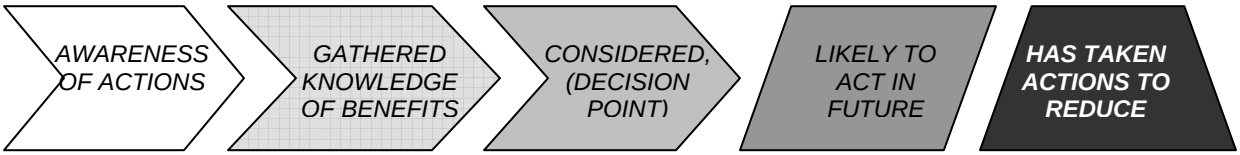
[SAY DISCLAIMER IF MONITORING BY CLIENT: Supervisors may be listening on a few randomly selected calls for training and quality assurance purposes]

O1. What is the name of your electric company?
1. Pacific Gas & Electric (PG&E)
2. San Diego Gas & Electric (SDG&E)
3. Southern California Edison (SCE)
4. Other, specify _____
5. Don't know

[IF OTHER or DK, O1=4 or 5]
O2, And what is the name of your gas company?
1. Pacific Gas & Electric (PG&E)
2. San Diego Gas & Electric (SDG&E)
3. Southern California Edison (SCE or Edison)
4. Southern California Gas (SCG)
5. Other, specify _____ [THANK AND TERMINATE]
6. Don't know [THANK AND TERMINATE]

Questions

Figure 1. The Awareness-Action Continuum
For Information on Energy Efficiency/Energy Efficiency Measures and Practices



Q1. How would you describe your *knowledge of your home's energy usage, such as which appliances are using the most electricity or gas*? Would you say you are…

1. Very knowledgeable
2. Somewhat knowledgeable, or
3. Not at all knowledgeable
4. (Refused)

Q2. [*AWARENESS OF stage*] Are you aware of any specific *actions* that you could take to reduce your energy usage?

1. Yes
2. No [SKIP TO NEXT SECTION, Q13]
3. (Refused) [TRY TO FORCE INTO YES OR NO, OTHERWISE SKIP TO NEXT SECTION, Q13]

[IF Q2=1, YES]
Q3. Would you describe yourself as…

1. Very knowledgeable or
2. Somewhat knowledgeable about the specific *actions that you could take to reduce your energy usage*?
3. (Other, specify _____)
4. (Refused)

Q4. What information or types of actions are you aware of that could reduce energy usage in your household? [MULTIPLE RESPONSE, PROBE WITH "Any others?"]

1. (Lighting related behaviors, such as turning off lights)
2. (Lighting related measures, such as installing CFLs)
3. (Air conditioning related behaviors, such as turning down AC)
4. (Air conditioning related measures, such as installing new AC)
5. (Heating related behaviors such as changing temperature)
6. (Heating related measures such as installing new heater)
7. (Water related behaviors, such as turning down thermostat on water heater)
8. (Water related measures, such as installing new or putting insulation on water heater)
9. (Insulation related)

10. (Home weatherization related, such as weather stripping, sealing, testing for leaks)
11. (WHOLE HOUSE)
12. (Fans)
13. (Pool Pumps)
14. (Other, specify _____)
15. (Could not name specific actions)

Q5. [*HAS TAKEN ACTIONS stage*] Have you taken actions to reduce your energy consumption?

1. Yes
2. No [SKIP TO Q9]
3. (Refused) [SKIP TO Q9]

[IF Q5=1, YES]
Q6. Would you say that you have…

1. (one) made behavior or life style changes like turning off lights or reducing the numbers of loads of laundry that you do,
2. (two) installed hardware such as Compact Fluorescent Lightbulbs or insulation in your home, or
3. (three) both made lifestyle changes and installed measures or hardware
4. (Don't know)

[IF Q6=1 or 3]
Q7. Specifically, what types of lifestyle changes have you made?

[IF Q6=2 or 3]
Q8. And specifically, what have you installed?

[IF HAVE TAKEN ACTIONS, Q5=1…SKIP TO Q13 FOR LIKELIHOOD TO TAKE ACTION]

[IF Q5=2,3; NO OR REFUSED]
Q9. Which best describes why you have not taken actions to reduce your energy consumption? [READ AND ROTATE 1-6]

1. You didn't have enough information on how to save energy
2. The costs were too high
3. Your energy use was already low
4. There was not enough savings
5. You weren't interested
6. You just hadn't considered it
7. Or some other reason, specify _____
8. (Don't know/Refused)

[CONTINUE ONLY IF HAVE NOT TAKEN ACTIONS, Q5=2 or 3]

[ASK IF Q5=2 or 3]
Q10. [*GATHERED KNOWLEDGE OF BENEFITS stage*] Do you have, or have you tried to obtain information on ways that you could reduce your home's energy usage? [ANYTHING THAT THEY MENTION SHOULD COUNT AS 'YES']

1. Yes
2. No
3. (Refused)

[IF Q10=1, YES]
Q11. Where did you go to get information on how to reduce your energy usage?

Q12. [*CONSIDERED, DECISION POINT stage*] Have you decided that taking actions to reduce your energy consumption is something that you should look into or try?

1. Yes
2. No (haven't decided)
3. (Refused)

Likelihood to Act In Future

[ASK ALL]

Q13. [*LIKELY TO ACT stage*] How likely are you to take any (additional) energy reducing measures or actions at your home in the future? Would you say that you are…

1. Very likely
2. Somewhat likely, or
3. Not likely to take energy reducing actions in the future
4. (Don't know/Refused)

[ASK ALL]
Q14. What type of information or assistance would help you take energy reducing measures at your home in the future?

What Information Do They Need? What is the Knowledge Gap? **Does What HEES Offers Fill the Gap?**

Q15. I want to ask you how helpful various types of information would be if you were considering making energy efficiency improvements to your home. On a scale of 1 to 10 where 1 is not at all helpful and 10 is extremely helpful, which of the following would help you …? [READ AND ROTATE]

1. Information on the dollar savings that you could achieve by taking specific actions
2. A graph or chart of your annual energy use by month
3. A list of the energy your electric/gas appliances use
4. A list of energy saving tips and cost saving ideas specific to your home
5. Information on where you can get rebates if you purchase and install energy efficient appliances or measures

6. Information to help you evaluate the truthfulness, reliability and applicability of claims made by energy-efficient products or services
7. Free compact fluorescent bulbs
8. A comparison of your energy use to similar households
9. Contractor or vendor information
10. Ongoing communications from the utility to encourage adoption of recommendations
11. Water saving recommendations
12. [FOR SCE, PG&E and SDG&E CUSTOMERS ONLY] Recommendations on how to save on your gas bill

Q16. Is there any other information that you feel you need to help you decide whether to make energy efficiency improvements to your home?

1. (No additional information)
2. (Specify, _____)
3. (Don't know)

Q17. Where would you go to learn about specific actions that you could take to save energy? *[HEES PLAYS A UNIQUE INFORMATIONAL ROLE]*

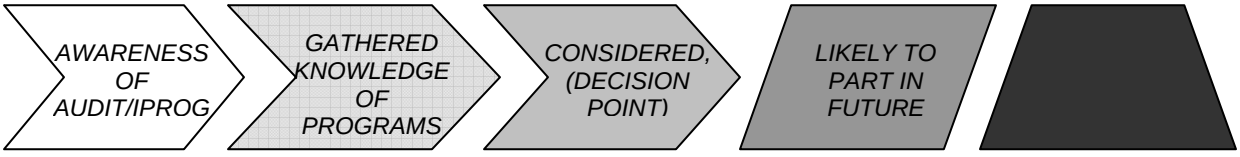
1. (Friend)
2. (Contractor)
3. (Internet)
4. (Utility company)
5. (Phone book)
6. (Other, specify _____)
7. (Don't know)

Q18. Would you prefer to receive this information… [READ LIST] (IF NEEDED: THIS QUESTION REFERS TO HOW THEY WOULD WANT TO LEARN ABOUT ACTIONS THAT THEY COULD TAKE TO SAVE ENERGY)

1. Online
2. By mail
3. By telephone
4. By having someone visit your home
5. Or in some other way, (specify _____)
6. (Not interested)
7. (Don't know)

To Determine Awareness of HEES, Audit or Other Programs and Barriers to Participation [THIS IS POTENTIAL FOR THE PROGRAM (AND WOULD *ONLY* BE ASKED OF NON-PARTICIPANTS)]

Figure 2. The Awareness-Action Continuum
For Energy Audits or Other Programs



[*AWARENESS OF AUDIT/PROGRAMS stage*]
NP1. Are you aware or have you heard of any energy efficiency programs?

1. Yes
2. No [SKIP TO NP9]
3. (Refused) [TRY TO FORCE INTO YES OR NO, OTHERWISE SKIP TO NEXT SECTION, NP9]

[IF NP1=1, YES, CONTINUE]
NP2. Which energy efficiency programs have you heard of? [MULTIPLE RESPONSE, DO NOT PROMPT]

1. Utility programs, GENERAL, but none by name)
2. (Home Energy Survey Program/HEES-UNPROMPTED)
3. (Energy Audits through utility)
4. (Refrigerator and Freezer Recycling Program)
5. (Home Energy Efficiency Rebate Program)
6. (ENERGY STAR Programmable Thermostat Program)
7. (Summer Discount Plan)
8. (CARE/FERA-California Alternate Rates for Energy Program or Family Electric Rate Assistance Program)
9. (Other, specify _____)
10. (Don't know/Refused)

[SKIP IF NP2=2 ABOVE]
NP3a. Have you heard of the Home Energy Survey Program offered by your utility?

1. Yes
2. No
3. (Don't know)

[IF NP2=2 or NP3a=1, YES] N3b. How did you learn about [INSERT UTILITY]'s Home Energy Survey? [MULTIPLE RESPONSE, DO NOT READ, PROBE FOR ADDITIONAL RESPONSES WITH "Any other ways?"]

1. (MAIL: I received the survey in the mail--without requesting it)
2. (MAIL: Utility bill insert)
3. (MAIL: Other marketing materials mailed to me)
4. (ONLINE: Online banner or ad)
5. (ONLINE: Email sent to me)
6. (ONLINE: Utility website)
7. (PERSON: Utility representative)
8. (PERSON: From a friend or relative)
9. (PERSON: Landlord)
10. (PERSON: Neighbor participated in this program)
11. (MASS MEDIA: Radio)

12. (MASS MEDIA: Television)
13. (MASS MEDIA: Newspaper)
14. (Community event)
15. (Through participation in another program)
16. (Through a kit passed out at my child's school)
17. (Other _____)
18. (Don't know)

[*PARTICIPATED stage*]
NP4. Have you participated in any energy efficiency programs?
1. Yes
2. No
3. (Refused)

[IF NP4=YES]
NP5. Which ones? [THEN SKIP TO NEXT SECTION, Q19]
1. (Utility programs, GENERAL, but none by name)
2. (Home Energy Survey Program/HEES-UNPROMPTED)
3. (Energy Audits through utility)
4. (Refrigerator and Freezer Recycling Program)
5. (Home Energy Efficiency Rebate Program)
6. (ENERGY STAR Programmable Thermostat Program)
7. (Summer Discount Plan)
8. (CARE/FERA-California Alternate Rates for Energy Program or Family Electric Rate Assistance Program)
9. (Other, specify _____)
10. (Don't know/Refused)

[IF NP4=2 or 3, NO OR REFUSED]
NP6. Why haven't you participated?
1. (Other, specify _____)
2. (Don't know/refused)

[ASK ONLY IF HAVE NOT PARTICIPATED, NP4=2 or 3]

[*GATHERED KNOWLEDGE OF PROGRAMS stage*]
NP7. Do you have, or have you tried to obtain, information on energy efficiency programs?
1. Yes
2. No
3. (Don't know)

[*CONSIDERED, DECISION POINT stage*]
NP8. Have you considered participating in an energy efficiency program?
1. Yes
2. No

3. (Refused)

Likelihood to Participate in A Program

NP9. [*LIKELY TO PART IN FUTURE stage*] How likely are you to participate in energy saving programs in the future? Would you say that you are…

1. Very likely
2. Somewhat likely, or
3. Not likely to participate in the future
4. (Don't know/Refused)

Other (For Comparison to Participants, Outcome/Indicator Questions)

[ASK OF ALL]

Q19. How would you rate your overall satisfaction with the services provided by [UTILITY] on a scale of 1 to 10 where 1 is very dissatisfied and 10 is very satisfied?

Q20a. On a scale of 1 to 10, where 1 is very dissatisfied and 10 is very satisfied, how satisfied are you with your *monthly spending on electricity?*

Q20b. On a scale of 1 to 10, where 1 is very dissatisfied and 10 is very satisfied, how satisfied are you with your *monthly spending on gas?* [98=DON'T USE GAS]

Thanks. I just have a few more demographic questions.

Demographics

D1. Do you live at this residence year round?
[MUST LIVE AT ADDRESS AT LEAST 9 MONTHS OUT OF THE YEAR TO CODE AS "YES"]

1. Yes
2. No
3. (Don't know/Refused)

D2. When did you move to this address?

____ ____ MONTH
____ ____ ____ ____ YEAR
(Don't know/Refused)

D3. Do you own or rent your home?

1. Own
2. Rent
3. (Don't know/Refused)

D4. Do you pay your own electric bill or is it included in your mortgage or rental payment each month?

1. Pay own bill
2. Included in mortgage or rental payment
3. (Don't know)

D5. What type of residence do you live in? [READ CATEGORIES]

1. Single-family, 1-unit detached
2. Duplex or two-family, townhouse, 1-unit attached
4. 3 or 4 units
5. 5 to 9 units
6. 10 to 19 units
7. 20 or more units
8. Mobile home, house trailer
9. (Other, please specify)
10. (Don't know/Refused)

D6. How many rooms does your residence have?

1. 1 room
2. 2 rooms
3. 3 rooms
4. 4 rooms
5. 5 rooms
6. 6 rooms
7. 7 rooms
8. 8 rooms
9. 9 or more rooms
10. (Don't know/Refused)

D7. In what year was your home built? Was it built . . . [READ RANGE]?

1. After 2000
2. 1999 to March 2000
3. 1995 to 1998
4. 1990 to 1994
5. 1980 to 1989
6. 1970 to 1979
7. 1960 to 1969
8. 1950 to 1959
9. 1940 to 1949
10. 1939 or earlier
11. (Don't know/Refused)

D8. How many people live at this residence?

1. 1-Person Household
2. 2-Person Household
3. 3-Person Household
4. 4-Person Household

5. 5-Person Household
6. 6-Person Household
7. 7-or-more-Person Household
8. (Don't know/Refused)

D9. Is your home heated by…
1. Utility gas
2. Bottled, tank or LP gas
3. Electricity
4. Fuel oil or Kerosene
5. Coal or Coke
6. Wood
7. Solar energy
8. Other fuel
9. No fuel used
10. (Don't know/Refused)

D10. What is your age? [READ LIST]
1. <22 years
2. 22 to 24 years
3. 25 to 29 years
4. 30 to 34 years
5. 35 to 39 years
6. 40 to 44 years
7. 45 to 49 years
8. 50 to 54 years
9. 55 to 59 years
10. 60 to 61 years
11. 62 to 64 years
12. 65 to 66 years
13. 67 to 69 years
14. 70 to 74 years
15. 75 to 79 years
16. 80 to 84 years
17. 85 years and over
18. (Don't know/Refused)

D11. What is the highest level of education you have completed? [READ IF NECESSARY]
1. Less than 9th Grade
2. 9th Grade, No Diploma
3. High School Graduate (includes equivalency)
4. Some College, No Degree
5. College Graduate, Bachelor's Degree
6. Graduate Degree
7. (Don't know/Refused)

D12. Which of the following *best* describes your racial or ethnic background? [ONE ANSWER ONLY] [READ LIST]

1. Caucasian (White alone, not Hispanic)
2. Hispanic or Latino
3. African American or Black (alone, not Hispanic)
4. Asian (alone, not Hispanic)
5. Native American, American Indian and Alaskan Native (alone, not Hispanic)
6. Native Hawaiian and Other Pacific (alone, not Hispanic)
7. Multi-racial, Two or more Races, Not Hispanic
8. (Other, specify _____)
9. (Don't know/Refused)

D13. What is the approximate annual household income from all sources in 2004, before taxes? This information will be kept confidential.

1. Under $10,000
2. $10,000 to less than $15,000
3. $15,000 to less than $25,000
4. $25,000 to less than $35,000
5. $35,000 to less than $50,000
6. $50,000 to less than $75,000
7. $75,000 to less than $100,000
8. $100,000 to less than $150,000
9. $150,000 to less than $200,000
10. $200,000 or over
11. (Don't know/Refused)

[D14. ASK ZIP CODE, IF NOT ALREADY IN DATABASE]

End

That is all the questions I have today – Thank you so much for your time! If you have any additional questions, please feel free to call [INSERT UTILITY]'s Energy Efficiency Call Center at [SCE:800-736-4777/PG&E …/ SDG&E …/SCG …]

Appendix H

Process Surveys

Statewide HEES Process Evaluation Participant Questionnaire

ODC # 6491
MAIL-Final 06/20/05

*Note: This survey will only be asked of **"Recent Participants,"** those that participated in 2005. The first wave will be participants between January and March 2005, and the second wave in the past 3-5 weeks (after we receive next round of data). It is for this reason that we do not focus on specific actions taken. We will ask questions about the specific recommendations made by the energy report (and whether they took each action) 8 to 12 months after participation.*

The questions below are designed for mail-in survey participants, but will be altered for online and in-home survey participants after approval of this survey instrument.

[DISPOSITION CODES FOR SPANISH-SPEAKING, NON-SPANISH LANGUAGE BARRIERS, TERMINATIONS BECAUSE They "Don't Recall Survey"]

Introduction

Hello, my name is ____. Recently, you completed an energy survey about your home and appliances. This was sent to you through [INSERT UTILITY]'s energy-efficiency program. Based on your completed survey, [INSERT UTILITY] sent you a report showing how you could save energy and reduce your energy bills. I would like to ask you some questions about your satisfaction with this program on behalf of your utility and the State of California's Public Utilities Commission.

My questions should take about 10 minutes to complete. Your responses will be kept strictly confidential. All respondents who complete this survey will have their names entered into a drawing for an ENERGY STAR Portable DVD Player.

[SAY DISCLAIMER IF MONITORING BY CLIENT: Supervisors may be listening on a few randomly selected calls for training and quality assurance purposes]

0a. Could I please speak with [INSERT NAME]?
1. Yes [REPEAT INTRODUCTION IF NECESSARY]
2. No [RESCHEDULE FOR ANOTHER TIME/TERMINATE]

0b. Our records indicate that in [INSERT MONTH], you completed a Home Energy Survey through [INSERT UTILITY NAME]. Do you recall completing this survey? [IF NO, TRY TO PROMPT RECALL BY DESCRIBING FURTHER: The Home Energy Survey was a booklet that was mailed to you. You filled out the information and should have received an assessment of your home's energy use with charts and graphs, and customized energy-saving tips.]
1. Yes [SKIP TO Q1]
2. No [PROMPT RECALL OR GO TO 0c]

0c. May I speak with someone else from your household who might remember having completed this survey?

1. Yes [REPEAT INTRODUCTION IF NECESSARY]
2. No [THANK AND TERMINATE]

Marketing

1. How did you learn about [INSERT UTILITY]'s Home Energy Survey? [MULTIPLE RESPONSE, DO NOT READ]

1. (MAIL: I received the survey in the mail--without requesting it)
2. (MAIL: Utility bill insert)
3. (MAIL: Other marketing materials mailed to me)
4. (ONLINE: Online banner or ad)
5. (ONLINE: Email sent to me)
6. (ONLINE: Utility website)
7. (PERSON: Utility representative)
8. (PERSON: From a friend or relative)
9. (PERSON: Landlord)
10. (PERSON: Neighbor participated in this program)
11. (MASS MEDIA: Radio)
12. (MASS MEDIA: Television)
13. (MASS MEDIA: Newspaper)
14. (Community event)
15. (Through participation in another program)
16. (Through a kit passed out at my child's school)
17. (Other _____)
18. (Don't know)

2. Do you recall other places where you saw information or heard about the Home Energy Survey?

1. Yes
2. No

3. [IF Q2=1, YES] Where did you see or hear about the Home Energy Survey?

1. (MAIL: Utility bill insert)
2. (ONLINE: Online banner or ad)
3. (ONLINE: Email sent to me)
4. (ONLINE: Utility website)
5. (MASS MEDIA: Radio Ad)
6. (MASS MEDIA: Television Ad)
7. (MASS MEDIA: Newspaper Ad)
8. (A kit passed out at my child's school)
9. ADD OTHERS AFTER REVIEWING LIST
10. (Other _____)
11. (Don't know)

Drivers of Participation

4. What did you hope to accomplish by completing the Home Energy Survey? [RECORD ALL THAT APPLY]

1. (Save money on energy/electric/gas bill)
2. (Reduce energy consumption)
3. (Make your home more comfortable)
4. (Increase the value of your home)
5. (Learn how you could improve your home's energy efficiency)
6. (Improve the environment: cleaner air, etc.)
7. (Other _____)
8. (Don't know)

Overall Satisfaction/Process

7. Overall, how satisfied were you with the Home Energy Survey Program? Would you say you are …

1. Very satisfied
2. Somewhat satisfied
3. Somewhat dissatisfied, or
4. Very dissatisfied
5. (Neither satisfied nor dissatisfied)
6. (Don't know)

8. [IF SOMEWHAT OR VERY DISSATISFIED (Q7=3 OR 4), PROBE] Why were you dissatisfied?

Other

5. Did you participate in any other energy efficiency programs before the Home Energy Survey?

1. Yes
2. No
3. (Don't know/Refused)

[IF Q5=1,YES]
6. Which one(s)?

1. (Utility programs, GENERAL, but none by name)
2. (Home Energy Survey Program/HEES-UNPROMPTED)
3. (Energy Audits through utility)
4. (Refrigerator and Freezer Recycling Program)
5. (Home Energy Efficiency Rebate Program)
6. (ENERGY STAR Programmable Thermostat Program)
7. (Summer Discount Plan)

8. (CARE/FERA-California Alternate Rates for Energy Program or Family Electric Rate Assistance Program)
9. (Other, specify _____)
10. (Don't know/Refused)

Survey Satisfaction/Process

9. I'm going to read you a series of statements about the Home Energy Survey you completed. For each statement please tell me whether you strongly disagree, disagree, agree, or strongly agree. [5=NEITHER, 6=DON'T KNOW/REFUSED; READ AND ROTATE A-C]

a. The energy survey that was mailed to my house was easy to follow and complete
b. The amount of time to complete the energy survey was reasonable
c. The survey asked the right questions to provide information customized for my home
d. I would recommend that others take this survey

[PROBE DISSATISFIED RESPONDENTS. IF DISAGREE OR STRONGLY DISAGREE TO ANY OF THE ABOVE, ASK ONLY ONCE AT END OF SERIES, IF Q9a,b,c or d=1 or 2]
10. Why do you disagree with some of these statements?

Energy Report Satisfaction/Process and Outcomes/Indicators

After you completed the survey, [INSERT UTILITY] mailed you an Energy Report about your home. I want to ask you some questions about the report as well.

11. Regarding this Energy Report, would you say that you . . .
[ONLY IF DO NOT RECALL: The Energy Report includes an Energy Cost Profile how your home appliances use energy, breaks down your annual usage by month, and recommends cost and energy saving actions you can take.]

1. Read the report thoroughly
2. Read some portions of the report
3. Just glanced through it
4. Did not read the report at all [ASK…12…19-27, 31-34 AND DEMOGRAPHICS]
5. Do not recall receiving report [READ DESCRIPTION AND TRY TO PROMPT RECALL, IF NO RECALL, ASK 19-27, 31-34 AND DEMOGRAPHICS]

[NOTE…NO DON'T KNOW OR REFUSED FOR THIS QUESTION]

12. [IF DID NOT READ REPORT, Q11=4] Why did you not read the report? [ASK 19-27, 31-34 AND DEMOGRAPHICS] [MULTIPLE RESPONSE]

1. (RESPONDENT NOTED THAT THEY INTEND TO READ SOON)

2. (Didn't have time)
3. (Wasn't presented well—not inviting)
4. (Wasn't interested)
5. (Took too long after I sent in survey, lost interest)
6. (Other, specify _____)
7. (Don't know)

[ONLY CONTINUE IF READ REPORT, Q11=1, 2, or 3, ELSE SKIP TO Q19]

13. I'm going to read you a series of statements about the Energy Report. Again, for each statement please tell me whether you strongly disagree, disagree, agree, or strongly agree. [READ AND ROTATE] [5=NEITHER, 6=DON'T KNOW/REFUSED; READ AND ROTATE-EXCEPT J]

PROCESS

a. The energy report was delivered to me in a timely manner
b. The energy report was easy to understand

VALUE OF

c. The recommendations in the energy report were relevant to my house
d. The information contained in the energy report helped me better understand my energy usage
e. The information contained in the energy report helped me better understand the *actions* that I could take to reduce my usage
f. In general, the amount of money the energy report said I could save by following the recommendations was believable
g. The energy report helped me learn about other sources of energy efficiency information and energy efficiency programs
h. The energy report provided me with information <u>that I was not already aware of</u>
i. The energy report gave me the information I needed to evaluate whether the manufacturers who make energy efficiency equipment are making reasonable claims of the kinds of savings I could achieve with their products.
j. If the Home Energy Survey program did not exist, I could still easily find this kind of information.
k. The energy report provided information that I needed in order to take actions that I was <u>already considering</u>

14. [IF DISAGREE OR STRONGLY DISAGREE WITH 13B] You mentioned that the report was not easy to understand. What could be done to make the report easier to understand?

15. [IF DISAGREE OR STRONGLY DISAGREE WITH 13C] What could be done to make the recommendations more relevant to your home?

I want to ask you about some of the information in this report, and whether it met your needs. I'll describe the report as I ask questions.

16. The first part of the report includes a graph indicating how your home uses energy. This is may be called something like an "Energy Cost Profile" and shows how much energy each of your appliances is using, every month. Would you say that this was very useful, somewhat useful, or not at all useful to helping you understand your energy consumption and reduce usage?

1. Very useful
2. Somewhat useful
3. Not at all useful
4. (Don't know)

17. This report also shows you how much energy you used each month, over the past year. Would you say that this breakdown was very useful, somewhat useful, or not at all useful to helping you understand where you might be able to cut costs?

1. Very useful
2. Somewhat useful
3. Not at all useful
4. (Don't know)

18. The report also includes a list of cost and energy saving recommendations for your home. Prior to receiving the report, would you say that…

1. You had already taken most of the actions recommended by the energy report
2. You had taken about half of the actions recommended by the energy report
3. You had taken only one or two of the actions recommended by the energy report, or
4. You had taken none of the actions recommended by the energy report before receiving the report
5. (Can not recall recommendations enough to answer)
6. (Don't know/Refuse)

19. [ASK IF Q18=4, 5 or 6 DO NOT ASK IF ALREADY STATED THAT THEY TOOK ACTION] [*HAS TAKEN ACTIONS stage*] Had you taken *any* actions to reduce your energy consumption before you participated in the Home Energy Survey Program?

1. Yes
2. No
3. (Refused)

20. [SKIP IF Q19=2,3] Would you say that - **before** participating -you had…

1. (one) made behavior or life style changes like turning off lights or reducing the numbers of loads of laundry that you do,
2. (two) installed measures such as CFLs or insulation in your home, or
3. (three) both made lifestyle changes and installed measures
4. (Don't know)

[CONTINUE ONLY IF Q19=2 or 3, ELSE SKIP TO Q28]

21. [IF NO ACTION OR REFUSED, IF Q19= 2 or 3] Which best describes why you had not taken actions to reduce your energy consumption prior to receiving the Home Energy Survey Report? [READ AND ROTATE 1-7]

1. You didn't have enough information on what specific actions you could have taken.
2. You would have needed to spend money first and the costs were too high
3. Your energy use was already low
4. There were not enough savings
5. You weren't interested
6. You just hadn't considered it
7. You did not have enough information on the energy savings that you would get from taking actions
8. Or some other reason, (specify _____)
9. (Don't know/Refused)

[CONTINUE ONLY IF Q19=2 or 3, ELSE SKIP TO Q28]
[IF HADN'T TAKEN ACTION PRIOR, NEED TO PUT ON CONTINUUM]

22. How would you describe your *knowledge of your home's energy use, such as which appliances are using the most electricity or gas,* prior to receiving the Home Energy Survey Report? Would you say you were…

1. Very knowledgeable
2. Somewhat knowledgeable, or
3. Not at all knowledgeable of your home's energy usage.
4. (Refused)

23. [*AWARENESS OF ACTIONS stage*] Prior to participating in the Home Energy Survey, were you aware *of any actions that you could take to reduce your energy usage*?

1. Yes
2. No [SKIP TO NEXT SECTION, Q28]
3. (Refused) [TRY TO FORCE INTO YES OR NO, OTHERWISE SKIP TO NEXT SECTION, Q28]

[IF Q23=1, YES]
24. Would you have described yourself as …

1. Very knowledgeable or
2. Somewhat knowledgeable of *actions that you could take to reduce your energy usage* prior to completing the Home Energy Survey?
3. (Other, specify _____)
4. (Refused)

25. [*GATHERED KNOWLEDGE OF BENEFITS stage*] Prior to participating in the Home Energy Survey, did you have, or had you tried to obtain, information on ways that

you could reduce your home's energy usage? [ANYTHING THAT THEY MENTION SHOULD COUNT AS 'YES']

1. Yes
2. No
3. (Refused)

26a. [IF Q25=1] Where did you go to get information on how to reduce your energy use?

26b. [*CONSIDERED, DECISION POINT stage*] Prior to participating, had you decided that taking actions to reduce your energy consumption was something that you should look into or try?

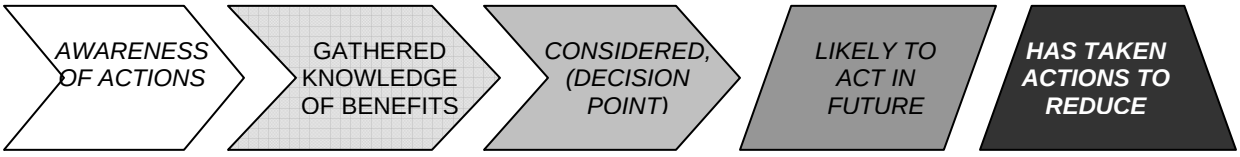
1. Yes
2. No
3. (Refused)

27. Prior to filling out the Home Energy Survey, would you say that you were…

1. Very likely
2. Somewhat likely
3. Not very likely to take actions to reduce your energy consumption?
4. (Don't know/Refused)

[END CONTINUUM QUESTIONS

Figure 1. The Awareness-Action Continuum
For Information on Energy Efficiency/Energy Efficiency Measures and Practices[1]



Intend To Take Action

[ASK ALL THAT READ, Q11=1, 2, or 3. ELSE SKIP Q28-30 IF Q11=4 OR 5]

28. As a result of receiving the report, have you followed through or do you intend to follow through on at least one of the recommendations made in the Energy Report?

1. Yes
2. No
3. (Don't know)

29. [IF Q28=2, NO] Why not?

[1] Questions 18-27 will be used to determine where on the continuum respondents were prior to participation. (Post participation will be determined 8-12 months after participation.)

30. [IF Q28=1, YES] What type of actions have you taken, or do you intend to take, as a result of the information in the Energy Report?

1. (Lighting related behaviors, such as turning off lights)
2. (Lighting related measures, such as installing CFLs)
3. (Air conditioning related behaviors, such as turning down AC)
4. (Air conditioning related measures, such as installing new AC)
5. (Heating related behaviors such as changing temperature)
6. (Heating related measures such as installing new heater)
7. (Water related behaviors, such as turning down thermostat on water heater)
8. (Water related measures, such as installing new or putting insulation on water heater)
9. (Insulation related)
10. (Home weatherization related, such as weather stripping, sealing, testing for leaks)
11. (WHOLE HOUSE)
12. (Fan)
13. (Pool Pump)
14. (Other, specify _____)
15. (Don't know/Could not name specific actions)

Suggestions for the Future

[ASK ALL]

31. On a scale of 1 to 10 where 1 is not at all helpful and 10 is extremely helpful, which of the following would make the Energy Report more useful to you? [READ AND ROTATE]

a. Free compact fluorescent bulbs
b. A comparison of your energy use to similar households
c. Contractor or vendor information
d. Ongoing communications from the utility to receive more tips and updated energy efficiency information
e. Water saving recommendations
f. Recommendations on how to save on your gas bill

32. Is there any *other* information that would make the report more useful to you or that you feel you need to take actions?

33a. Would you like the utility to follow-up with you regarding additional ways to help you save energy?

1. Yes
2. No
3. (Don't know)

[IF YES]
33b. How would you like them to follow up with you? [OPEN END]

Additional Indicator/Outcome Questions

34. How would you rate your overall satisfaction with the services provided by [UTILITY] on a scale of 1 to 10 where 1 is very dissatisfied and 10 is very satisfied?

35a. On a scale of 1 to 10, where 1 is very dissatisfied and 10 is very satisfied, how satisfied were you with *your monthly spending on electricity* prior to completing the Home Energy Survey?

35b. On a scale of 1 to 10, where 1 is very dissatisfied and 10 is very satisfied, how satisfied are you with your *monthly spending on gas* prior to completing the Home Energy Survey*?* [98=DON'T USE GAS]

Demographics [WE MIGHT BE ABLE TO SHORTEN THIS SECTION…BUT NEED TO CHECK WITH JEFF FIRST]

D1. Do you live at this residence year round?
[MUST LIVE AT ADDRESS AT LEAST 9 MONTHS OUT OF THE YEAR TO CODE AS "YES"]

1. Yes
2. No
3. (Don't know/Refused)

D2. When did you move to this address?

____ ____ MONTH
____ ____ ____ ____ YEAR
(Don't know/Refused)

D3. Do you own or rent your home?

1. Own
2. Rent
3. (Don't know/Refused)

D4. Do you pay your own [electric/gas] bill or is it included in your mortgage or rental payment each month?

1. Pay own bill
2. Included in mortgage or rental payment
3. (Don't know)

D5. What type of residence do you live in? [READ CATEGORIES]

1. Single-family, 1-unit detached
2. Duplex or two-family, townhouse, 1-unit attached
4. 3 or 4 units
5. 5 to 9 units
6. 10 to 19 units
7. 20 or more units

8. Mobile home, house trailer
9. (Other, please specify)
10. (Don't know/Refused)

D6. How many rooms does your residence have?

1. 1 room
2. 2 rooms
3. 3 rooms
4. 4 rooms
5. 5 rooms
6. 6 rooms
7. 7 rooms
8. 8 rooms
9. 9 or more rooms
10. (Don't know/Refused)

D7. In what year was your home built? Was it built . . . [READ RANGE]?

1. After 2000
2. 1999 to March 2000
3. 1995 to 1998
4. 1990 to 1994
5. 1980 to 1989
6. 1970 to 1979
7. 1960 to 1969
8. 1950 to 1959
9. 1940 to 1949
10. 1939 or earlier
11. (Don't know/Refused)

D8. How many people live at this residence?

1. 1-Person Household
2. 2-Person Household
3. 3-Person Household
4. 4-Person Household
5. 5-Person Household
6. 6-Person Household
7. 7-or-more-Person Household
8. (Don't know/Refused)

D9. Is your home heated by…

1. Utility gas
2. Bottled, tank or LP gas
3. Electricity
4. Fuel oil or Kerosene
5. Coal or Coke
6. Wood

7. Solar energy
8. Other fuel
9. No fuel used
10. (Don't know/Refused)

D10. What is your age? [READ LIST]

1. <22 years
2. 22 to 24 years
3. 25 to 29 years
4. 30 to 34 years
5. 35 to 39 years
6. 40 to 44 years
7. 45 to 49 years
8. 50 to 54 years
9. 55 to 59 years
10. 60 to 61 years
11. 62 to 64 years
12. 65 to 66 years
13. 67 to 69 years
14. 70 to 74 years
15. 75 to 79 years
16. 80 to 84 years
17. 85 years and over
18. (Don't know/Refused)

D11. What is the highest level of education you have completed? [READ IF NECESSARY]

1. Less than 9th Grade
2. 9th Grade, No Diploma
3. High School Graduate (includes equivalency)
4. Some College, No Degree
5. College Graduate, Bachelor's Degree
6. Graduate Degree
7. (Don't know/Refused)

D12. Which of the following *best* describes your racial or ethnic background? [ONE ANSWER ONLY] [READ LIST]

1. Caucasian (White alone, not Hispanic)
2. Hispanic or Latino
3. African American or Black (alone, not Hispanic)
4. Asian (alone, not Hispanic)
5. Native American, American Indian and Alaskan Native (alone, not Hispanic)
6. Native Hawaiian and Other Pacific (alone, not Hispanic)
7. Multi-racial, Two or more Races, Not Hispanic
8. (Other, specify _____)
9. (Don't know/Refused)

D13. What is the approximate annual household income from all sources in 2004, before taxes? This information will be kept confidential.

1. Under $10,000
2. $10,000 to less than $15,000
3. $15,000 to less than $25,000
4. $25,000 to less than $35,000
5. $35,000 to less than $50,000
6. $50,000 to less than $75,000
7. $75,000 to less than $100,000
8. $100,000 to less than $150,000
9. $150,000 to less than $200,000
10. $200,000 or over
11. (Don't know/Refused)

[D14. ASK ZIP CODE, IF NOT ALREADY IN DATABASE…WE HAVE FOR ALL MAIL PARTICIPANTS]

[VERIFY NAME FOR DRAWING]

End

That is all the questions I have today – Thank you so much for your time! If you have any additional questions, please feel free to call [INSERT UTILITY]'s Energy Efficiency Call Center at [SCE:800-736-4777/PG&E …/ SDG&E …/SCG …]

Appendix I

Adoption Survey

Statewide HEES Adoption/Persistance Questionnaire

ODC # 6491
Draft 10/25/05

Note: This survey will be asked of participants that participated between January 1, 2004 and March 1, 2005 and will cover more utilities, channels and recommendations than the Impact Survey. Many of the questions, however, are similar.

[NOTES FOR PROGRAMMERS: SAMPLE NEEDS TO BE CODED WITH UTILITY, MAIL/HOME, MONTH AND YEAR OF PARTICIPATION. THE SAMPLE SHOULD ALSO BE MARKED AS STATEWIDE]

[EACH RECOMMENDATION WILL ALSO NEED TO BE CODED AS A MEASURE (M) OR PRACTICE (P).]

Introduction

Hello, my name is ____ from Opinion Dynamics Corporation. We have been hired by [Southern California Edison/Pacific Gas & Electric/San Diego Gas and Electric/Southern California Gas] to conduct research concerning energy usage and appliances. Our records indicate that you received [an energy analysis on your home by mail/ an in-home energy analysis/an online energy analysis] from _____[PG&E/SCE/SDG&E/SoCalGas] in _____ [MONTH] _____ [YEAR].

We would like to know how useful this Home Energy Survey was. My questions should take about 10 minutes to complete and your responses will be kept strictly confidential.

[SAY DISCLAIMER IF MONITORING BY CLIENT: Supervisors may be listening on a few randomly selected calls for training and quality assurance purposes]

0a. Could I please speak with [INSERT NAME]?
1. Yes [REPEAT INTRODUCTION IF NECESSARY]
2. No [RESCHEDULE FOR ANOTHER TIME/TERMINATE]

1. Do you recall [completing and mailing in an energy survey on your home/having an auditor come to your home to complete a survey of your home/completing the online energy survey] in _____ [MONTH] _____ [YEAR]. [IF NO, TRY TO PROMPT RECALL BY DESCRIBING FURTHER (MAIL: You completed the Home Energy Survey on your home and its appliances and you were sent a report on your energy usage and ways you can reduce your energy use.) (IN-HOME: A utility representative visited your home and asked you questions about your energy and appliance usage, and then provided you with recommendations about how to reduce energy use.)]

1. Yes
2. No [IS THERE ANYONE ELSE IN YOUR HOME THAT MIGHT RECALL? OR TERMINATE SINCE NOT THE RIGHT CONTACT]

2. Based on the survey that [you completed/was completed for your home/you completed], your household received [MAIL: an Energy Report that gave you recommendations on how to save energy/IN-HOME: a form from the auditor that gave you recommendations on how to save energy. This form is called the Energy Report./ONLINE: recommendations on how to save energy, or an Energy Report.] Would you say you. . .
    1. Read the report thoroughly
    2. Read some portions of the report
    3. Just glanced through it
    4. Did not read the report at all, or
    5. Do not recall receiving report [ONLY IF DO NOT RECALL: (IN-HOME: The report was a list of recommendations filled out by the auditor.) (MAIL: The Energy Report includes an Energy Cost Profile how your home appliances use energy, breaks down your annual usage by month, and recommends cost and energy saving actions you can take.) (ONLINE: The report would have been the information that came up on the computer after you filled out the questions about your home's energy use.]

[NOTE…NO DON'T KNOW OR REFUSED FOR THIS QUESTION]

Memory Aid

In the next section, I will be asking you to remember if you made any changes to your household to save energy. I would also like to ask you to remember in what month and year you made a change. Remembering dates is not easy for most people. But it may help to think about big important events that occurred in the last three years and in what month and year they happened. Then whenever we talk about any changes you made to save energy, you can think about if it happened before of after these big events to help you remember which month the change happened.

Recommendations Taken and When

[FOR STATEWIDE SURVEY: DRAW RANDOMLY AMONG THOSE REC NOT COVERED FULLY IN IMPACT SURVEYS]

We are going to quickly go through no more than 5 of the recommendations that were given to you in the Energy Report. Your answers will be kept confidential. It is most helpful to us to honestly know whether you took these actions and if so, when.

R1. Your Energy Report recommended _____ [RECOMMENDATION #1].

R1a. Do you recall this recommendation?[1]
1. Yes
2. No

R1b. Have you _____? [RECOMMENDATION].

[1] We could skip the "a" questions for mail participants that answer Q2=4 or 5, or ask anyway just in case it prompts recall. All in-home participants should be asked the questions.

1. Yes
2. No [SKIP TO NEXT REC]

R1c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BEST GUESS.]

1. Before Energy Report
2. After Energy Report

[NO DK RESPONSE]

R1d. When did you take this action? What month and year?

_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

[IF R1 RECOMMENDATION IS INSTALLATION OF EQUIPMENT—OR A MEASURE—SKIP TO R2; IF PRACTICE, CONTINUE]

R1e. How consistent has this change been? Would you say…

1. You always or frequently do this,
2. You sometimes do this, or
3. You don't really do this anymore.
4. Other [Specify]
5. [Don't Know]

R2. Your Energy Report recommended _____ [RECOMMENDATION #2].

R2a. Do you recall this recommendation?

1. Yes
2. No

R2b. Have you _____? [RECOMMENDATION].

1. Yes
2. No [SKIP TO NEXT REC]

R2c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? ? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BEST GUESS.]

1. Before Energy Report
2. After Energy Report

[NO DK RESPONSE]

R2d. When did you take this action? What month and year?

_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

[IF R2 RECOMMENDATION IS INSTALLATION OF EQUIPMENT (M) SKIP TO R3]

R2e. How consistent has this change been? Would you say…

1. You always or frequently do this,
2. You sometimes do this, or

3. You don't really do this anymore.
4. Other [Specify]
5. [Don't Know]

R3. Your Energy Report recommended _____ [RECOMMENDATION #3].

R3a. Do you recall this recommendation?
1. Yes
2. No

R3b. Have you _____? [RECOMMENDATION].
1. Yes
2. No [SKIP TO NEXT REC]

R3c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BEST GUESS.]
1. Before Energy Report
2. After Energy Report
[NO DK RESPONSE]

R3d. When did you take this action? What month and year?
_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

[IF R3 RECOMMENDATION IS INSTALLATION OF EQUIPMENT (M) SKIP TO R4]

R3e. How consistent has this change been? Would you say…
1. You always or frequently do this,
2. You sometimes do this, or
3. You don't really do this anymore.
4. Other [Specify]
5. [Don't know]

R4. Your Energy Report recommended _____ [RECOMMENDATION #4].

R4a. Do you recall this recommendation?
1. Yes
2. No

R4b. Have you _____? [RECOMMENDATION].
1. Yes
2. No [SKIP TO NEXT REC]

R4c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BEST GUESS.]
1. Before Energy Report
2. After Energy Report
[NO DK RESPONSE]

R4d. When did you take this action? What month and year?
_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

[IF R4 RECOMMENDATION IS INSTALLATION OF EQUIPMENT (M) SKIP TO R5]

R4e. How consistent has this change been? Would you say…

1. You always or frequently do this,
2. You sometimes do this, or
3. You don't really do this anymore.
4. Other [Specify]
5. [Don't Know]

R5. Your Energy Report recommended _____ [RECOMMENDATION #5].

R5a. Do you recall this recommendation?

1. Yes
2. No

R5b. Have you _____? [RECOMMENDATION].

1. Yes
2. No [SKIP TO NEXT REC]

R5c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BEST GUESS.]

1. Before Energy Report
2. After Energy Report

[NO DK RESPONSE]

R5d. When did you take this action? What month and year?

_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

[IF R5 RECOMMENDATION IS INSTALLATION OF EQUIPMENT(M) SKIP TO NEXT SECTION]

R5e. How consistent has this change been? Would you say…

1. You always or frequently do this,
2. You sometimes do this, or
3. You don't really do this anymore.
4. Other [Specify]
5. [Don't know]

Free Ridership and Participant Spillover

ASK FR/SP QUESTIONS FOR EACH RECOMMENDATION WHERE R[1-5]c=After Energy Report (2).

FR1. Which statement best describes your household's plans to _____ [R1] before you read the recommendation in your Energy Report?

1. Definitely was planning to do it [SKIP FR2]
2. Thinking about it but needed more information that it was a good idea.
3. Thought about it.
4. Hadn't seriously considered it prior to it being recommended. [SKIP FR2]
5. [Don't Know]

FR2. How likely is it that you would have _____ [R1] if it had not been recommended in your Energy Report?

1. Definitely would have
2. Probably would have.
3. Might or might not have.
4. Probably would not have. [SKIP FR3 AND FR4]
5. Definitely would not have. [SKIP FR3 AND FR4]
6. [Don't Know]

FR3. If _____ [R1] had not been recommended in your Energy Report, would you have done it at the same time, about 6 months later, or more than a year later, if at all?

1. At the same time.
2. About 6 months later.
3. More than a year later.
4. Probably would not have done it. [SKIP FR4]
5. [Don't Know]

FR4. If _____ [R1] had <u>not</u> been recommended in your Energy Report, would you have done it at the efficiency level that was recommended or a lower cost standard option, if at all?

1. At the recommended efficiency level.
2. At a lower cost standard option.
3. Probably would not have done it.
4. [Don't Know]

REPEAT FR1 – FR4 AS FR5 – FR8 FOR R2, THEN FR9 – FR12 FOR R3, THEN FR13 – FR16 FOR R4, AND FR17 – FR20 FOR R5

PS1. Did you learn anything from the Energy Report that caused you to take actions or purchase any equipment that was even more efficient than what was recommended to you?

1. Yes
2. No
3. [Don't Know][SKIP PS2]

PS2. What did you do that was more efficient than what was recommended? _____

Other Process [PROCESS RESPODENTS ONLY]

[ASK PR1 FOR EACH RECS FOR WHICH R[1-5]a=Yes(1) BUT R[1-5]b=No(2)]

PR1. You mentioned that you recalled some of the recommendations, but did not follow through. Why didn't you [INSERT ALL RECS FOR WHICH R[1-5]a=Yes(1) BUT R[1-5]b=No(2)]? [ASK ABOUT EACH INDIVIDUALLY]
1. Too expensive
2. Not enough information
3. Not relevant to my home
4. Had already taken action
5. Other (Specify)
6. (Don't recall)

PR2. Overall, on a scale of 1 to 10 where 1 is not at all useful and 10 is extremely useful, how would you rate the value of the information that you received from the energy analysis? [11=DK]

PR3. What additional information would you want to receive from the [Energy Report/in-home energy analysis/online energy analysis]?
1. (Specify)
2. (None)
3. (Don't know)

Other Program Participation and When

OP1. Did you participate in any energy efficiency programs between September 2002 and [MONTH, YEAR] when you received the [energy analysis on your home by mail/in-home energy analysis/online energy analysis]?
1. Yes
2. No [SKIP TO OP4]
3. (Don't know/Refused) [SKIP TO OP4]

OP2. Which one(s)?
1. (Appliance Recycling)
2. (HEER Home Energy Efficiency Rebate)
3. (Multi Family EE Rebates—Combine with HEER for analysis)
4. (Single Family EE Rebates—Combine with HEER for analysis)
5. (Summer Discount Plan; Air Conditioning Cycling)
6. (20/20 (if you reduce your energy usage by 20% over the summer, you get 20% off your bill)
7. (The GoodWatts Plan)
8. (CHEERS, California Home Energy Efficiency Rating System)
9. (Residential Lighting Incentives)
10. (California Alternate Rates for Energy (CARE) Program)
11. (EMA)
12. (LIEE, Low-Income Energy Efficiency Program)
13. (Other, Specify)

OP3. What new equipment did you get or what energy efficient actions did you take because of this energy efficiency program?

1._____
2.(None)

OP4. Did you participate in any energy efficiency programs after you received the [energy analysis on your home by mail/in-home energy analysis/online energy analysis] in _____[MONTH] _____ [YEAR]? [*Month and year Energy Report provided.*]

1. Yes
2. No [SKIP TO NEXT SECTION]
3. (Don't know/Refused) [SKIP TO NEXT SECTION]

OP5. Which one(s)?

1. (Appliance Recycling)
2. (HEER Home Energy Efficiency Rebate)
3. (Multi Family EE Rebates—Combine with HEER for analysis)
4. (Single Family EE Rebates—Combine with HEER for analysis)
5. (Summer Discount Plan; Air Conditioning Cycling)
6. (20/20 (if you reduce your energy usage by 20% over the summer, you get 20% off your bill)
7. (The GoodWatts Plan)
8. (CHEERS, California Home Energy Efficiency Rating System)
9. (Residential Lighting Incentives)
10. (California Alternate Rates for Energy (CARE) Program)
11. (EMA)
12. (LIEE, Low-Income Energy Efficiency Program)
13. (Other, Specify)

OP6. What new equipment did you get or what energy efficient actions did you take because of this energy efficiency program?

1. _____
2. (None)

[IF OP4=1] **[PROCESS RESPONDENTS ONLY]**
OP7. Did you participate in any of these energy efficiency programs as a result of what you learned from the [Energy Report/in-home energy analysis/online energy analysis]?

1. Yes
2. No

Additional Process Questions [PROCESS RESPONDENTS ONLY]

X1. On a scale of 1 to 10, where 1 is very dissatisfied and 10 is very satisfied, how satisfied were you with *your monthly spending on electricity* **prior to receiving [your Energy Report/your in-home energy analysis/your online energy analysis]**?

X2. And on the same scale, how satisfied are you **now** with *your monthly spending on electricity*?

X3. On a scale of 1 to 10, where 1 is very dissatisfied and 10 is very satisfied, how satisfied were you with your *monthly spending on natural gas* **prior to receiving [your Energy Report/your in-home energy analysis/your online energy analysis]***?* [98=DON'T USE GAS]

[DO NOT ASK IF RESPONDENT DOES NOT USE GAS]
X4. And on the same scale, how satisfied are you **now** with your *monthly spending on natural gas?* [98=DON'T USE GAS]

X5. Do you have any other recommendations for changes that should be made to the [Energy Report/in-home energy analysis/online energy analysis] in the future?
1. (Specify)
2. (No recommendations)
3. (Don't know)

Demographics

Great. I just have some demographic questions left.

D1. What type of residence do you live in? [READ CATEGORIES]
1. Single-family, 1-unit detached
2. Duplex or two-family, townhouse, 1-unit attached
3. 3 or 4 units
4. 5 to 9 units
5. 10 to 19 units
6. 20 or more units
7. Mobile home, house trailer
8. (Other, please specify)
9. (Don't know/Refused)

D2. ZIP CODE [ASK, IF NOT ALREADY IN DATABASE]

D3. How many rooms does your residence have? Please only include areas used as living space. Do NOT include bathrooms and hallways.
1. 1 room
2. 2 rooms
3. 3 rooms
4. 4 rooms
5. 5 rooms
6. 6 rooms
7. 7 rooms
8. 8 rooms
9. 9 or more rooms
10. (Don't know/Refused)

D4. In what year was your home built? Was it built . . . [READ RANGE]?

1. After March 2000
2. 1999 to March 2000
3. 1995 to 1998
4. 1990 to 1994
5. 1980 to 1989
6. 1970 to 1979
7. 1960 to 1969
8. 1950 to 1959
9. 1940 to 1949
10. 1939 or earlier
11. (Don't know/Refused)

D5. What is your age? ____
999. (Don't know/Refused)

D6. What is the highest level of education you have completed? [READ IF NECESSARY]

1. Less than 9th Grade, No High School
2. Some High School, No HS Degree
3. High School Graduate (includes equivalency)
4. Some College, No Degree
5. College Graduate, Bachelor's Degree
6. Graduate Degree
7. (Don't know/Refused)

D7. Which of the following *best* describes your racial or ethnic background? [ONE ANSWER ONLY] [READ LIST]

1. Caucasian (White alone, not Hispanic)
2. Hispanic or Latino
3. African American or Black (alone, not Hispanic)
4. Asian (alone, not Hispanic)
5. Native American, American Indian and Alaskan Native (alone, not Hispanic)
6. Native Hawaiian and Other Pacific (alone, not Hispanic)
7. Multi-racial, Two or more Races, Not Hispanic
8. (Other, specify _____)
9. (Don't know/Refused)

D8. What is the approximate annual household income from all sources in 2004, before taxes? This information will be kept confidential.

1. Under $10,000
2. $10,000 to less than $15,000
3. $15,000 to less than $25,000
4. $25,000 to less than $35,000
5. $35,000 to less than $50,000
6. $50,000 to less than $75,000
7. $75,000 to less than $100,000
8. $100,000 to less than $150,000

9. $150,000 to less than $200,000
10. $200,000 or over
11. (Don’t know/Refused)

End

That is all the questions I have today – You have been most helpful for our research. Thank you so much for your time!

Appendix J

Impact Survey

HEES Impact Evaluation Participant Questionnaire

ODC # 6583

Final 11/15/05

Note: This survey will be asked of participants that participated between October 1, 2003 and September 30, 2004 in the SCE In-Home or Mail-in or PG&E Mail-In HEES. The non-participant survey will include questions marked by an asterisk (or a slightly modified version of these questions).

[NOTES FOR PROGRAMMERS: SAMPLE NEEDS TO BE CODED WITH UTILITY, MAIL/HOME, MONTH AND YEAR OF PARTICIPATION. THE SAMPLE SHOULD ALSO BE MARKED AS IMPACT.] [FOR IMPACT RESPONDENTS, INCLUDE UP TO FIVE RECOMMENDATIONS PER PARTICIPANT (THREE PULLED BY ENERGY SAVING ASSUMING THIS kWh VALUE IS IN THE DATABASE, AND TWO ADDITIONAL RECS PULLED RANDOMLY).] [EACH RECOMMENDATION WILL ALSO NEED TO BE CODED AS A MEASURE (M) OR PRACTICE (P).]

Introduction

Hello, my name is ____ from Opinion Dynamics Corporation. We have been hired by [Southern California Edison/Pacific Gas & Electric] to conduct research concerning energy usage and appliances. Our records indicate that you received [an energy analysis on your home by mail/ an in-home energy analysis] from _____[PG&E/SCE] in _____ [MONTH] _____ [YEAR].

We would like to know how useful this Home Energy Survey was. My questions should take about 10 minutes to complete and your responses will be kept strictly confidential.

*0a. Could I please speak with [INSERT NAME]?

1. Yes [READ INTRODUCTION]
2. 2. No [RESCHEDULE FOR ANOTHER TIME/TERMINATE]

[SAY DISCLAIMER IF MONITORING BY CLIENT: Supervisors may be listening on a few randomly selected calls for training and quality assurance purposes]

As I mentioned, on behalf of your utility and the State of California's Public Utilities Commission, we are conducting this research to determine how useful this Home Energy Survey was. I'm going to start by asking you a few questions about your home, followed by a series of questions about whether the recommendations were useful.

*0b. ? Are you the person who would know if any changes were made to your household in the last couple of years in terms of home improvements, appliance replacements and the number of people living in the household?

1. Yes [REPEAT INTRODUCTION IF NECESSARY]
2. No -- Is there someone else there I should speak to? [ARRANGE AS NEED BE, COMPLETE WITH RESPONDENT IF POSSIBLE]

*0c. Has your family lived in this house year-round for the past three years, that is, since at least September 2002?

1. Yes
2. No [THANK AND TERMINATE]

*0d. Have you changed the kind of fuel you use to heat your house with since September 2002? [gas heat, electric heat, heat pump—*as needed*]

1. Yes [THANK AND TERMINATE]
2. No

*0e. If you did NOT have central air conditioning in 2002, have you since added central air-conditioning?

1. Yes [THANK AND TERMINATE]
2. No

*0f. Have you made significant additions to your home or any major renovations since 2002? [IF NEEDED: A significant addition would be adding a room, or something that changes the overall size of your home.]

1. Yes [THANK AND TERMINATE]
2. No

1. Do you recall [completing and mailing in an energy survey on your home/having an auditor come to your home to complete a survey of your home] in _____ [MONTH] _____ [YEAR]. [IF NO, TRY TO PROMPT RECALL BY DESCRIBING FURTHER (MAIL: You completed the Home Energy Survey on your home and its appliances and you were sent a report on your energy usage and ways you can reduce your energy use.) (IN-HOME: A utility representative visited your home and asked you questions about your energy and appliance usage, and then provided you with recommendations about how to reduce energy use.)]
   1. Yes
   2. No [IS THERE ANYONE ELSE IN YOUR HOME THAT MIGHT RECALL? OR TERMINATE SINCE NOT THE RIGHT CONTACT]

2. Based on the survey that [you completed/was completed for your home], your household received [MAIL: an Energy Report that gave you recommendations on how to save energy/IN-HOME: a form from the auditor that gave you recommendations on how to save energy. This form is called the Energy Report.] Would you say you. . .
   1. Read the report thoroughly
   2. Read some portions of the report
   3. Just glanced through it

4. Did not read the report at all, or
5. Do not recall receiving report [ONLY IF DO NOT RECALL: (IN-HOME: The report was a list of recommendations filled out by the auditor.) (MAIL: The Energy Report includes an Energy Cost Profile how your home appliances use energy, breaks down your annual usage by month, and recommends cost and energy saving actions you can take.)]

[NOTE…NO DON'T KNOW OR REFUSED FOR THIS QUESTION]

***Memory Aid**

In the next section, I will be asking you to remember if you made any changes to your household to save energy. I would also like to ask you to remember in what month and year you made a change. Remembering dates is not easy for most people. But it may help to think about big important events that occurred in the last three years and in what month and year they happened. Then whenever we talk about any changes you made to save energy, you can think about if it happened before of after these big events to help you remember which month the change happened.

Recommendations Taken and When

[FOR IMPACT ONLY: PROGRAM CATI SO TOP 3 EXPECTED SAVINGS RECOMMENDATIONS ARE ASKED AS R1, R2, R3, AND THEN RANDOM 2 SELECTED FROM REMAINING RECOMMENDATIONS FOR THIS CUSTOMER]

We are going to quickly go through no more than 5 of the recommendations that were given to you in the Energy Report. Your answers will be kept confidential. It is most helpful to us to honestly know whether you took these actions and if so, when.

R1. Your Energy Report recommended _____ [RECOMMENDATION WITH GREATEST EXPECTED SAVINGS FOR IMPACT].

R1a. Do you recall this recommendation?[1]
1. Yes
2. No

R1b. Have you _____? [RECOMMENDATION].
1. Yes
2. No [SKIP TO NEXT REC]

R1c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BEST GUESS.]
1. Before Energy Report
2. After Energy Report

[NO DK RESPONSE]

R1d. When did you take this action? What month and year?
_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

Any chance that the pre-coded responses could change based on pmon and pyear? (I'm guessing that this would be very hard to do. We probably should have the pmon and pyear on the R#D screen too.

[1] We could skip the "a" questions for mail participants that answer Q2=4 or 5, or ask anyway just in case it prompts recall. All in-home participants should be asked the questions.

[IF R1 RECOMMENDATION IS INSTALLATION OF EQUIPMENT—OR A MEASURE—SKIP TO R2; IF PRACTICE, CONTINUE]

R1e. How consistent has this change been? Would you say…

1. You always or frequently do this,
2. You sometimes do this, or
3. You don't really do this anymore.
4. Other [Specify]
5. [Don't Know]

R2. Your Energy Report recommended _____ [RECOMMENDATION WITH 2nd GREATEST EXPECTED SAVINGS FOR IMPACT].

R2a. Do you recall this recommendation?

1. Yes
2. No

R2b. Have you _____? [RECOMMENDATION].

1. Yes
2. No [SKIP TO NEXT REC]

R2c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? ? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BESTGUESS.]

1. Before Energy Report
2. After Energy Report

[NO DK RESPONSE]

R2d. When did you take this action? What month and year?

_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

[IF R2 RECOMMENDATION IS INSTALLATION OF EQUIPMENT (M) SKIP TO R3]

R2e. How consistent has this change been? Would you say…

1. You always or frequently do this,
2. You sometimes do this, or
3. You don't really do this anymore.
4. Other [Specify]
5. [Don't Know]

R3. Your Energy Report recommended _____ [RECOMMENDATION WITH 3rd GREATEST EXPECTED SAVINGS].

R3a. Do you recall this recommendation?

1. Yes
2. No

R3b. Have you _____? [RECOMMENDATION].

1. Yes
2. No [SKIP TO NEXT REC]

R3c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BESTGUESS.]

1. Before Energy Report
2. After Energy Report

[NO DK RESPONSE]

R3d. When did you take this action? What month and year?

_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

[IF R3 RECOMMENDATION IS INSTALLATION OF EQUIPMENT (M) SKIP TO R4]

R3e. How consistent has this change been? Would you say…

1. You always or frequently do this,
2. You sometimes do this, or
3. You don't really do this anymore.
4. Other [Specify]
5. [Don't know]

R4. Your Energy Report recommended _____ [OTHER RANDOM RECOMMENDATION #1].

R4a. Do you recall this recommendation?

1. Yes
2. No

R4b. Have you _____? [RECOMMENDATION].

1. Yes
2. No [SKIP TO NEXT REC]

R4c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BESTGUESS.]

1. Before Energy Report
2. After Energy Report

[NO DK RESPONSE]

R4d. When did you take this action? What month and year?

_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

[IF R4 RECOMMENDATION IS INSTALLATION OF EQUIPMENT (M) SKIP TO R5]

R4e. How consistent has this change been? Would you say…

1. You always or frequently do this,
2. You sometimes do this, or
3. You don't really do this anymore.
4. Other [Specify]

5. [Don't Know]

R5. Your Energy Report recommended _____ [OTHER RANDOM RECOMMENDATION #2].

R5a. Do you recall this recommendation?
1. Yes
2. No

R5b. Have you _____? [RECOMMENDATION].
1. Yes
2. No [SKIP TO NEXT REC]

R5c. Did you do this before or after [you completed the Home Energy Survey/the energy auditor visited your home]? (IF NEEDED: You received an Energy Report in [MONTH] [YEAR].) [PROBE FOR BESTGUESS.]
1. Before Energy Report
2. After Energy Report

[NO DK RESPONSE]

R5d. When did you take this action? What month and year?

_____ MONTH _____ YEAR

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

[IF R5 RECOMMENDATION IS INSTALLATION OF EQUIPMENT(M) SKIP TO NEXT SECTION]

R5e. How consistent has this change been? Would you say…
1. You always or frequently do this,
2. You sometimes do this, or
3. You don't really do this anymore.
4. Other [Specify]
5. [Don't know]

Free Ridership and Participant Spillover

ASK FR/SP QUESTIONS FOR EACH RECOMMENDATION WHERE R[1-5]c=After Energy Report (2).

FR1. Which statement best describes your household's plans to _____ [R1] before you read the recommendation in your Energy Report?
1. Definitely was planning to do it [SKIP FR2]
2. Thinking about it but needed more information that it was a good idea.
3. Thought about it.
4. Hadn't seriously considered it prior to it being recommended. [SKIP FR2]
5. [Don't Know]

FR2. How likely is it that you would have _____ [R1] if it had not been recommended in your Energy Report?

1. Definitely would have
2. Probably would have.
3. Might or might not have.
4. Probably would not have. [SKIP FR3 AND FR4]
5. Definitely would not have. [SKIP FR3 AND FR4]
6. [Don't Know]

FR3. If _____ [R1] had not been recommended in your Energy Report, would you have done it at the same time, about 6 months later, or more than a year later, if at all?

1. At the same time.
2. About 6 months later.
3. More than a year later.
4. Probably would not have done it. [SKIP FR4]
5. [Don't Know]

FR4. If _____ [R1] had <u>not</u> been recommended in your Energy Report, would you have done it at the efficiency level that was recommended or a lower cost standard option, if at all?

1. At the recommended efficiency level.
2. At a lower cost standard option.
3. Probably would not have done it.
4. [Don't Know]

REPEAT FR1 – FR4 AS FR5 – FR8 FOR R2, THEN FR9 – FR12 FOR R3, THEN FR13 – FR16 FOR R4, AND FR17 – FR20 FOR R5

PS1. Did you learn anything from the Energy Report that caused you to take actions or purchase any equipment that was EVEN MORE efficient than what was recommended to you?

1. Yes
2. No
3. [Don't Know][SKIP PS2]

PS2. What did you do that was more efficient than what was recommended? _____

***Other Changes and When**

I'm going to ask you about several other pieces of equipment in your home. We might have discussed some of these already since this is a pre-determined list of questions, but we will try to run through them quickly.

Have you replaced or bought a new _____ in the past three years? [1=REPLACED, 2=NEW; 3=NO; 4=>1 OPTION] [IF 1 OR 2] When did this occur? [RECORD MONTH AND YEAR] Was the new equipment ENERGY STAR or did you buy a standard new piece of equipment? [1=ES; 2=NOT ENERGY STAR; 3=DK]

[THE FIRST RESPONSE CATEGORY WILL CATCH IF RESPONDENT INSTALLED MORE THAN ONE AND SEND TO AN ALTERNATIVE SCREEN TO GET MULTIPLE DATES, ETC.]

- Remove "Did you install more than one?" from question language
- Put response category (Yes, more than one installed) in parentheses
- Note that not all are ENERGY STAR, so don't ask ES questions for ones with * below
- Reword swimming pools for "A" question to work better: "Did you install a swimming pool in the past three years? (IF YES: Did this replace an existing pool?)

- (add u to equipment in C#A) …or even better, replace "equipment" with specific name and remove "or was this entirely new" WHAT DO YOU THINK?

[IF THEY CAN'T REMEMBER DATE: *Use the memory dates to help them recall. "Try to think about another important event that might have occurred around the same time, and whether you took this recommendation before or after this event." "Was it 1, 2, 3 months after?"*]

Equipment	**1=Replaced/2=New/3=No/4=More than One Installed**	**When (Month_Year)**	**ES or Market standard**
*Central AC	C1a.	C1b.	C1c.
*Room/ Wall AC	C2a.	C2b.	C2c
*Evaporative cooler	C3a.	C3b.	*
*Freezer	C4a.	C4b.	C4c.
*Refrigerator	C5a.	C5b.	C5c.
*Furnace	C6a.	C6b.	C6c.
*Water heater	C7a.	C7b.	C7c.
*Clothes washer	C8a.	C8b.	C8c.
*Clothes dryer	C9a.	C9b.	*
*Large-screen TV	C10a.	C10b.	C10c.
*Range/oven	C11a.	C11b.	*
*Swimming Pool (ask differently)	C12a.	C12b.	*
*Swimming Pool Pump	C13a.	C13b.	*
*Spa/Jacuzzi	C14a.	C14b.	*
*Other major energy use device (specify)	C15a.	C15b.	*

*C15a. Have you replaced or bought any other major energy-using device for your home? [THIS WILL BE THE FINAL QUESTION IN THE SERIES]

***Other Program Participation and When**

*OP1. Did you participate in any energy efficiency programs between September 2002 and [MONTH, YEAR] , which would be "before" receiving the [energy analysis on your home by mail/in-home energy analysis]?

1. Yes
2. No [SKIP TO OP4]
3. (Don't know/Refused) [SKIP TO OP4]

*OP2. Which one(s)?

1. (Appliance Recycling)
2. (HEER Home Energy Efficiency Rebate)
3. (Multi Family EE Rebates—Combine with HEER for analysis)
4. (Single Family EE Rebates—Combine with HEER for analysis)
5. (Summer Discount Plan; Air Conditioning Cycling)
6. (20/20 (if you reduce your energy usage by 20% over the summer, you get 20% off your bill)
7. (The GoodWatts Plan)
8. (CHEERS, California Home Energy Efficiency Rating System)
9. (Residential Lighting Incentives)
10. (California Alternate Rates for Energy (CARE) Program)
11. (EMA)
12. (LIEE, Low-Income Energy Efficiency Program)
13. (Other, Specify?)

*OP3. What new equipment did you get or what energy efficient actions did you take because of this energy efficiency program?

1._____
2.(None)

*OP4. Did you participate in any energy efficiency programs <u>after</u> you received the [energy analysis on your home by mail/in-home energy analysis] in _____[MONTH] _____ [YEAR]? [*Month and year Energy Report provided.*]

1. Yes
2. No [SKIP TO O1]
3. (Don't know/Refused) [SKIP TO O1]

*OP5. Which one(s)?

1. (Appliance Recycling)
2. (HEER Home Energy Efficiency Rebate)
3. (Multi Family EE Rebates—Combine with HEER for analysis)
4. (Single Family EE Rebates—Combine with HEER for analysis)
5. (Summer Discount Plan; Air Conditioning Cycling)
6. (20/20 (if you reduce your energy usage by 20% over the summer, you get 20% off your bill)
7. (The GoodWatts Plan)
8. (CHEERS, California Home Energy Efficiency Rating System)
9. (Residential Lighting Incentives)
10. (California Alternate Rates for Energy (CARE) Program)
11. (EMA)
12. (LIEE, Low-Income Energy Efficiency Program)
13. (Other,)

*OP6. What new equipment did you get or what energy efficient actions did you take because of this energy efficiency program?

1. _____
2. (None)

Occupancy

*O1. How many people currently live at this residence? _____

*O2. Have there been changes to the number of people living at your home since September 2002?
1. Yes
2. No [SKIP TO DEMOGRAPHICS SECTION]

*O3. Can you tell me how many people lived in your home in September 2002, and the changes that occurred since September 2002? [IF MULTIPLE CHANGES, TRY TO RECORD EARLIEST CHANGE FIRST. ASK DATE OF CHANGE AND WHAT NUMBER]

	When (MONTH/YEAR)?	How many lived there at this time?
*O3a.	September 2002	_____
*O3b. [FIRST CHANGE]	_____	_____
*O3c. [SECOND CHANGE]	_____	_____
*O3d. [THIRD CHANGE]	_____	_____

***Demographics** [THESE WILL AGREE WITH NON-PART DEMOGRAPHIC QUESTIONS]

*D1. What type of residence do you live in? [READ CATEGORIES]
1. Single-family, 1-unit detached
2. Duplex or two-family, townhouse, 1-unit attached
3. 3 or 4 units
4. 5 to 9 units
5. 10 to 19 units
6. 20 or more units
7. Mobile home, house trailer
8. (Other, please specify)
9. (Don't know/Refused)

*D2. ZIP CODE [ASK, IF NOT ALREADY IN DATABASE]

*D3. How many rooms does your residence have? Please only include areas used as living space. Do NOT include bathrooms and hallways.
1. 1 room
2. 2 rooms
3. 3 rooms
4. 4 rooms
5. 5 rooms
6. 6 rooms

7. 7 rooms
8. 8 rooms
9. 9 or more rooms
10. (Don't know/Refused)

*D4. In what year was your home built? Was it built . . . [READ RANGE]?
1. After March 2000
2. 1999 to March 2000
3. 1995 to 1998
4. 1990 to 1994
5. 1980 to 1989
6. 1970 to 1979
7. 1960 to 1969
8. 1950 to 1959
9. 1940 to 1949
10. 1939 or earlier
11. (Don't know/Refused)

*D5. What is your age? ____
999. (Don't know/Refused)

*D6. What is the highest level of education you have completed? [READ IF NECESSARY]
1. Less than 9th Grade, No High School
2. Some High School, No HS Degree
3. High School Graduate (includes equivalency)
4. Some College, No Degree
5. College Graduate, Bachelor's Degree
6. Graduate Degree
7. (Don't know/Refused)

*D7. Which of the following *best* describes your racial or ethnic background? [ONE ANSWER ONLY] [READ LIST]
1. Caucasian (White alone, not Hispanic)
2. Hispanic or Latino
3. African American or Black (alone, not Hispanic)
4. Asian (alone, not Hispanic)
5. Native American, American Indian and Alaskan Native (alone, not Hispanic)
6. Native Hawaiian and Other Pacific (alone, not Hispanic)
7. Multi-racial, Two or more Races, Not Hispanic
8. (Other, specify _____)
9. (Don't know/Refused)

*D8. What is the approximate annual household income from all sources in 2004, before taxes? This information will be kept confidential.
1. Under $10,000
2. $10,000 to less than $15,000

3. $15,000 to less than $25,000
4. $25,000 to less than $35,000
5. $35,000 to less than $50,000
6. $50,000 to less than $75,000
7. $75,000 to less than $100,000
8. $100,000 to less than $150,000
9. $150,000 to less than $200,000
10. $200,000 or over
11. (Don't know/Refused)

End

That is all the questions I have today – You have been most helpful for our research. Thank you so much for your time!

Non-Participant Survey

The non-participant survey will include a brief intro, questions similar to those with asterisks in the participant survey, and the following series of questions on Home Characteristics.

Home Characteristics [FOR NON-PARTICIPANTS ONLY]

H1. What is the estimated square footage of your home? _____
[*Put in 0 for Don't Know or Refused.*]

H2. Is your home primarily heated by…
1. Utility natural gas
2. Bottled, tank or LP gas
3. Electricity
4. Fuel oil or Kerosene
5. Coal or Coke
6. Wood
7. Solar energy
8. Other fuel
9. No fuel used
10. (Don't know/Refused)

H3. Do you own or rent your home?
1. Own
2. Rent
3. (Don't know/Refused)

H4. Do you pay your own [electric/gas] bill or is it included in your mortgage or rental payment each month?
1. Pay own bill
2. Included in mortgage or rental payment
3. (Don't know)

H5. What methods do you use to cool your home in the summer? [CHECK ALL THAT APPLY]
1. Central air-conditioning
2. Multiple window/wall air-conditioning units
3. 1 room or wall AC unit
4. Central evaporative cooler
5. Multiple evaporative coolers
6. 1 evaporative cooler
7. Fans (1 or more)
8. Ceiling fans
9. Whole house fan
10. Other (Specify) _____
99. (Don't know/Refused)

H6a. Do you have a swimming pool?
1. Yes
2. No
99. (Don't know/Refused)

[IF YES TO H6a]
H6b. What type of fuel is used to heat the pool?
1. No heat
2. Electric
3. Gas
4. Other (specify)
99. (Don't know/Refused)

H7a. Do you have a jacuzzi?
1. Yes
2. No
99. (Don't know/Refused)

[IF YES TO H7a]
H7b. What type of fuel is used to heat the jacuzzi?
1. No heat
2. Electric
3. Gas
4. Other (specify)
99. (Don't know/Refused)

H8. Do you have a second refrigerator?
1. Yes
2. No
99. (Don't know/Refused)

H9. Do you have a stand-alone freezer?
1. Yes
2. No
99. (Don't know/Refused)

H10. What type of fuel is used for your water heater?
1. Utility natural gas
2. Electricity
3. Bottled, tank or LP gas
99. (Don't know/Refused)

H11. Do you have a clothes washer?
1. Yes
2. No [SKIP H12]
99. (Don't know/Refused) [SKIP H12]

H12. Do you have a clothes dryer?
1. Yes
2. No [SKIP H14]
99. (Don’t know/Refused) [SKIP H13]

H13. Is it an electric or natural gas clothes dryer?
1. Electric
2. Natural gas
99. (Don’t know/Refused)

Appendix K

Database Crossing Questionnaire

Statewide HEES Evaluation
Database Crossing Questionnaire

ODC # 6491
Final 05/09/06

[DISPOSITION CODES FOR SPANISH-SPEAKING, NON-SPANISH LANGUAGE BARRIERS]

[SAMPLE FROM PARTICIPANTS THAT PARTICIPATED IN OTHER PROGRAMS AFTER HEES—FROM RILEY]

Introduction
Hi. I'm calling from Opinion Dynamics Corporation on behalf of the California Public Utilities Commission and [Pacific Gas & Electric/Southern California Edison]. Our records indicate that you participated in some of the State's energy efficiency programs and I wanted to ask you about your reasons for participating to provide some feedback to the utilities.

Ask about up to three programs depending on database analysis *[Assign each customer up to three programs-A, B, C-based on their history of participation. Note that we will only be asking about programs that customers participated in AFTER participating in HEES, as determined from the program database. Note that most people participated in only one program.]*

[IF 1 PROGRAM]
I want to ask you about 1 program, [PROGRAM A NAME]

[IF 2 PROGRAMS]
I want to as you about 2 programs, [PROGRAM A] and [PROGRAM B]

[IF 3 PROGRAMS]
I want to ask you about 3 programs, [PROGRAM A], [PROGRAM B] and [PROGRAM C].

Unaided

[IF SF Rebates]

U1. How did you first hear about the Rebate Program?

U2. What were your major reasons for participating in the Rebate Program?

[IF MF Rebates]

U3. How did you first hear about the Rebate Program?

U4. What were your major reasons for participating in the Rebate Program?

[IF Appliance Recycling]

U5. How did you first hear about the Appliance Recycling Program?

U6. What were your major reasons for participating in the Appliance Recycling Program?

[IF AC Cycling Program]

U7. How did you first hear about the Summer Discount Plan or AC Cycling Program? [NOTE TO INTERVIEWER: These are two names for the same program which cycles the air conditioning in a home.]

U8. What were your major reasons for participating in the Summer Discount Plan or AC Cycling Program?

Aided Question—Comparing Between Factors
Note that there is no need to rotate categories below since all categories are read before any response is given. This is done so that all programs get equal responses. Rotating categories will just be more confusing for the respondent.

[READ TO ALL]
I asked you about your major reason for participating in the programs. Now I want to ask you specifically about the influence of six different factors on your decision to participate. These six factors are:

1. One. Statewide television or radio campaigns, such as Flex Your Power.
2. Two. Utility bill inserts, information on your bill, or a direct mailing about the program
3. Three. Recommendations from your Home Energy Survey or a link from the Home Energy Web Site
4. Four. Newspaper advertisements
5. Five. Community events, fairs, festivals or home shows
6. And Six. Information or brochures from your local government or local community agency

[IF NECESSARY: As part of the Home Energy Survey, you completed a survey about your home by mail, online or with a utility representative that visited your home. Based on the information that you filled out, you were given recommendations on how to save energy in your home.]

[A SERIES REMOVED]

SF Rebate Program

[IF SF Rebate Program]

B1. On a scale of 1 to 5 where 1 is no influence and 5 is a great deal of influence, how much of an influence did [Statewide television or radio campaigns] have on your decision to participate in the Rebate Program

B2. How about utility bill inserts or mailings?
B3. How about the Home Energy Survey or web site?
B4. How about newspaper advertisements?
B5. How about community events, fairs, festivals or home shows?
B6. How about information from your local government or local organizations?

[IF NECESSARY: On a scale of 1 to 5 where 1 is no influence and 5 is a great deal of influence, how much influence did it have?]

B7. Can you think of anything else that influenced your decision to participate in the Rebate Program?

MF Rebate Program

[IF MF Rebate Program]

C1. On a scale of 1 to 5 where 1 is no influence and 5 is a great deal of influence, how much of an influence did [Statewide television or radio campaigns] have on your decision to participate in the Rebate Program

C2. How about utility bill inserts or mailings?
C3. How about the Home Energy Survey or web site?
C4. How about newspaper advertisements?
C5. How about community events, fairs, festivals or home shows?
C6. How about information from your local government or local organizations?

[IF NECESSARY: On a scale of 1 to 5 where 1 is no influence and 5 is a great deal of influence, how much influence did it have?]

C7. Can you think of anything else that influenced your decision to participate in the Rebate Program?

Appliance Recycling Program

[IF Appliance Recycling Program]

D1. On a scale of 1 to 5 where 1 is no influence and 5 is a great deal of influence, how much of an influence did [Statewide television or radio campaigns] have on your decision to participate in the Appliance Recycling Program

D2. How about utility bill inserts or mailings?
D3. How about the Home Energy Survey or web site?
D4. How about newspaper advertisements?
D5. How about community events, fairs, festivals or home shows?
D6. How about information from your local government or local organizations?

[IF NECESSARY: On a scale of 1 to 5 where 1 is no influence and 5 is a great deal of influence, how much influence did it have?]

D7. Can you think of anything else that influenced your decision to participate in the Appliance Recycling Program?

Summer Discount or AC Cycling Program

[IF Summer Discount Plan or AC Cycling Program]

E1. On a scale of 1 to 5 where 1 is no influence and 5 is a great deal of influence, how much of an influence did [Statewide television or radio campaigns] have on your decision to participate in the Summer Discount Plan or AC Cycling Program?

E2. How about utility bill inserts or mailings?
E3. How about the Home Energy Survey or web site?
E4. How about newspaper advertisements?
E5. How about community events, fairs, festivals or home shows?
E6. How about information from your local government or local organizations?

[IF NECESSARY: On a scale of 1 to 5 where 1 is no influence and 5 is a great deal of influence, how much influence did it have?]

E7. Can you think of anything else that influenced your decision to participate in the Summer Discount Plan or AC Cycling Program?

Final HEES-Specific Questions

X1. Do you recall filling out the Home Energy Survey by mail or online, or having someone come to your home to complete the survey? [IF NECESSARY: You completed a survey about your home by mail, online or with a utility representative that visited your home. Based on the information that you filled out, you were given recommendations on how to save energy in your home.]

1. Yes
2. No

[IF YES]
X2. On a scale of 1 to 5, where 1 is not at all successful and 5 is very successful, how successful was the Home Energy Survey at giving you information about energy efficiency programs? [97=Wasn't interested in programs/Not relevant to me, 98=Don't recall, 99=Refused]

Demographics

Great. I just have some demographic questions and then we're done.

[ADDED DEMOGRAPHIC QUESTIONS FROM OTHER HEES SURVEYS—The Y Series below]

Y1. Do you own or rent your home?
1. Own
2. Rent
3. (Don't know/Refused)

Y2. Do you pay your own electric bill or is it included in your mortgage or rental payment each month?
1. Pay own bill
2. Included in mortgage or rental payment
3. (Don't know)

Y3. What type of residence do you live in? [READ CATEGORIES]
1. Single-family, 1-unit detached
2. Duplex or two-family, townhouse, 1-unit attached
4. 3 or 4 units
5. 5 to 9 units
6. 10 to 19 units
7. 20 or more units
8. Mobile home, house trailer
9. (Other, please specify)
10. (Don't know/Refused)

Y4. How many rooms does your residence have?
1. 1 room
2. 2 rooms
3. 3 rooms
4. 4 rooms
5. 5 rooms
6. 6 rooms
7. 7 rooms
8. 8 rooms
9. 9 or more rooms
10. (Don't know/Refused)

Y5. In what year was your home built? Was it built . . . [READ RANGE]?

1. After 2000
2. 1999 to March 2000
3. 1995 to 1998
4. 1990 to 1994
5. 1980 to 1989
6. 1970 to 1979
7. 1960 to 1969
8. 1950 to 1959
9. 1940 to 1949
10. 1939 or earlier
11. (Don't know/Refused)

Y6. What is your age? [READ LIST]

1. <22 years
2. 22 to 24 years
3. 25 to 29 years
4. 30 to 34 years
5. 35 to 39 years
6. 40 to 44 years
7. 45 to 49 years
8. 50 to 54 years
9. 55 to 59 years
10. 60 to 61 years
11. 62 to 64 years
12. 65 to 66 years
13. 67 to 69 years
14. 70 to 74 years
15. 75 to 79 years
16. 80 to 84 years
17. 85 years and over
18. (Don't know/Refused)

Y7. What is the highest level of education you have completed? [READ IF NECESSARY]

1. Less than 9th Grade
2. 9th Grade, No Diploma
3. High School Graduate (includes equivalency)
4. Some College, No Degree
5. College Graduate, Bachelor's Degree
6. Graduate Degree
7. (Don't know/Refused)

Y8. Which of the following *best* describes your racial or ethnic background? [ONE ANSWER ONLY] [READ LIST]

1. Caucasian (White alone, not Hispanic)
2. Hispanic or Latino

3. African American or Black (alone, not Hispanic)
4. Asian (alone, not Hispanic)
5. Native American, American Indian and Alaskan Native (alone, not Hispanic)
6. Native Hawaiian and Other Pacific (alone, not Hispanic)
7. Multi-racial, Two or more Races, Not Hispanic
8. (Other, specify _____)
9. (Don't know/Refused)

Y9. What is the approximate annual household income from all sources in 2004, before taxes? This information will be kept confidential.

1. Under $10,000
2. $10,000 to less than $15,000
3. $15,000 to less than $25,000
4. $25,000 to less than $35,000
5. $35,000 to less than $50,000
6. $50,000 to less than $75,000
7. $75,000 to less than $100,000
8. $100,000 to less than $150,000
9. $150,000 to less than $200,000
10. $200,000 or over
11. (Don't know/Refused)

Z1. Do you live in a rural or urban area?

1. Rural
2. Urban (city)
3. (Suburb)
4. Don't know

Z2. Can I get your zip code for my records?

Thank you for your help. I appreciate your time.

Appendix L

Recommendation Tables

Recommendation Type	Characterization	Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE In-Home	SCG Mail	SDG&E Mail	SDG&E/ SCG Online	Number of Versions that Include Recommendations
Cooling	Replace Central AC	**Replace** your existing air conditioning system with a new high-efficiency system with a SEER (Seasonal Energy Efficiency Rating) of **12** or higher.	EM								1	1
		Replace your central air conditioner	M		CL10							1
		Replace your air conditioner with a higher efficiency model	EM	693, 699		55	55			47		4
	Replace Room AC	**Replace** your room air conditioner	M		CL14							1
		Replace your old window or wall air conditioner(s) with a unit with an EER (Energy Efficiency Rating) of **11** or higher.	EM								3	1
	Replace or install evaporative cooler	**Replace** your evaporative cooler with a higher efficiency model	EM			59	59					2
		Install an evaporative cooler to supplement your central air conditioning	M	639								1
	Install whole house fan	**Install** a whole house fan to supplement your central air conditioning	M	640		2	2			1		4
	Install vents	**Install** vents in attic	M					2c				1
	Maintain AC	**Clean** or **replace** dirty air conditioner filters	P					2f				1
		Regularly **maintain** central air conditioner	O		CL6							1
		Regularly **maintain** room air conditioner	O		CL12							1
	Shade windows	**Shade** window areas from direct sunlight	P					2h				1
	Use Programmable Thermostat	Use a **programmable** or **clock thermostat** to raise the temperature when you are at work or away from the home	P								4	1
	Raise AC Temperature Setting	**Raise** your air conditioner's temperature setting and keep it at 78°F or higher	P			50	50	2a		44		4
		Raise your air conditioner's temperature setting to 78°F or higher when you are home and to 85°F or turn it off when your home is unoccupied for a short period of time	P	687								1
		Raise the temperature setting of room air conditioner	P		CL15							1
	Raise thermostat setting and use ceiling fan	**Raise** your thermostat setting and consider **using** ceiling fans	P		CL2							1
	Use whole house fans	Use your **whole house fan** more	P		CL8							1
		Use portable or **whole house fans** when possible	P					2i				1
	Use outside air	Use **outside air** for cooling when possible	P					2g				1
	Reduce use of appliances during day	**Reduce use** of heat generating appliances during the day	P					2e				1
	Turn off AC	**Turn off** air conditioner when away for extended periods	P					2d				1
		Have your **ducts tested** for leakage, **seal your ducts**, **clean** or **replace** your dirty air conditioner filters, **shade** your windows, and **avoid using** your appliances at the hottest times of the day	P	654								1

Recommendation Type	Characterization	Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE In-Home	SCG Mail	SDG&E Mail	SDG&E/ SCG Online	Number of Versions that Include Recommendations
	Cooling grouped recommendations	**Clean** or **replace** your dirty air conditioner filters, **shade** your windows, and **avoid using** your appliances at the hottest times of the day	P	685						13		2
		Clean or **replace** your dirty air conditioner filters, **shade** your windows, and **avoid using** your appliances at the hottest times of the day, if its time to **replace** your air conditioning unit choose the most energy-efficient model you can	P			9	9					2
Space Heating	Replace Heating System	**Replace** your **heating system** with a higher efficiency model	EM		HT16							1
		Replace your existing **electric heating system** with a new electric heat pump	M			13	13				24	3
		Don't make expensive repairs to your existing gas heating system. **A new gas heating system** can use 20% to 30% less energy.	M								26	1
		Replace your existing furnace with a higher efficiency model	EM	670, 679					24			2
	Replace Heat Pump	**Replace** your **heat pump** with a new high-efficiency heat pump. Look for a system with an HSPF (Heating Season Performance Factor) of **7.0 or higher**, and a SEER (Seasonal Energy Efficiency Rating) or **12 or higher**.	EM								25	1
		Replace your **heat pump** with a new high-efficiency heat pump. Look for a system with an SEER (Seasonal Energy Efficiency Rating) or **12 or higher**.	EM								2	1
	Replace or insatll heating system parts	**Install** automatic flue damper	M		HT20							1
		Install electronic ignition	M		HT21							1
		Replace oil nozzle	M		HT22							1
		Replace oil burner	M		HT23							1
		Install outdoor reset control	M		HT24							1
		Install add-on Hydro-Air system	M		HT26							1
		Install add-on Heat Pump	M		HT27							1
	Install timer	**Install** a timer on your water heater	M					5e				1
	Not lowering Heat Pump thermostat	Manually lowering the thermostat at night on your heat pump is **not recommended**, **replace** and **clean** the filters on your heat pump and have it **inspected** annually	O	682								1
		Manually lowering the thermostat at night on your heat pump is **not recommended**	O			44	44					2
	Maintain Heating System	Regularly **maintain** your heating system	O		HT5	45	45					3
		Have your oil heating system **checked** annually by a qualified service person	O								27	1
	Turn off pilot light	**Turn off** the pilot light on your heating system during the summer	P		HT4							1
	Limit electric heater use	**Limit** bathroom/portable electric heaters use	P					3f				1
		Turn heat off/down when away for extended periods	P					3c				1

Recommendation Type	Characterization	Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE In-Home	SCG Mail	SDG&E Mail	SDG&E/ SCG Online	Number of Versions that Include Recommendations
	Lower heater temperature setting	**Lower** the heater's thermostat setting in your home **to 68°F** (electric?)	P	664, 666		27, 29	27, 29			21, 23		4
		Lower (or turn off) the heater's thermostat setting in your home **to 58°F at night** (electric?)	P	665, 667		28, 30	28, 30			22		4
		Lower the heater's thermostat setting in your home **to 68°F** (gas?)	P	676, 677					15, 17	33, 34		3
		Lower (or turn off) the heater's thermostat setting in your home **to 58°F at night** (gas?)	P	678					16, 18	35, 36		3
		Lower the heater's thermostat setting **to 68°F during the day** and **lower (or turn off)** the heater's thermostat setting in your home **to 58°F at night** (gas?)	P					3a	19			2
		Lower your thermostat setting	P		HT1							1
	Use Programmable Thermostat	Use an **automatic set-back thermostat**	P					3b				1
		Use a **programmable** or **clock thermostat** to decrease the temperature when you are asleep or at work.	P								29	1
	Avoid heating unoccupied areas	**Avoid** heating unoccupied areas	P		HT2							1
	Close windows	**Reduce** your use of space heating by **closing the windows**	P					3d				1
	Remove or cover window AC	**Remove** or **cover** your window **air conditioner** during the winter	P	686		49	49					3
	Heating grouped recommendations	Ducts **tested** for leakage, **seal** your ducts, and **clean** or **replace** your dirty filters	P	680								1
		Ducts **tested** for leakage, **seal** your ducts, **clean** or **replace** your dirty filters, **shade** your windows, and **avoid using** your appliances at the hottest times of the day	P	681								1
	Maintain Filters	**Clean** or **replace** dirty heating system filters	P					3g				1
		Replace and **clean** the filters on your heat pump	P							41		1
Ducts/Pipes	Insulate ducts	**Insulate** your heating and cooling ducts to help prevent heated or cooled air from escaping to unconditioned areas within the home.	M								5	1
		Insulate your ducts	M		WE4			3e				2
	Insulate pipes	**Insulate** your pipes	M		HT13							1
	Seal leaks in ducts	**Seal** leaks in ducts	M		WE6			4b			6	3
	Repair leaks	**Repair** leaky faucets and pipes	O					5f				1
		Repair your leaky tanks, pipes, and faucets	O					7b				1
	Test ducts for leakage	**Test** your ducts for leakage	O					4a				1
	Insulate your homes attic	**Insulate** your home's attic	M	644, 646					2			2
		Improve your home's attic insulation	M			4, 14, 15	4, 14, 15		4	3-12		4
		Insulate your home's attic and **install** energy-efficient replacement windows	EM	645, 647								1
		Insulate your attic and walls	M	709,711								1
		Insulate your ceiling with R19 insulation	EM					1a				1

Recommendation Type	Characterization	Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE In-Home	SCG Mail	SDG&E Mail	SDG&E/ SCG Online	Number of Versions that Include Recommendations
Insulation	attic	Proper **attic insulation** can save up to 15% in heating and air conditioning costs. You should have an insulation value of **R-30 to R-38** in your attic to help keep your home warm in winter and cool in summer.	M								14	1
	Insulate attic and install efficient windows	**Insulate** your attic and walls and **install** energy-efficient replacement windows	EM	710, 712								1
	Insulate walls	**Insulate** your home's walls	M	715, 717					36			2
		Improve your home's wall insulation	M	721, 723					38			2
		Insulate your walls with R11 insulation	M					1b				1
		Make sure your **walls** are **well-insulated**	M								13	1
		Insulate your **basement walls**, particularly if they are above ground. You should also insulate the "band joist" around the top of the basement wall.	M								11	1
	Insulate walls and install efficient windows	**Insulate** your home's walls and **install** energy-efficient replacement windows	EM	716, 718								1
		Improve your home's wall insulation and **install** energy-efficient replacement windows	EM	722, 724								1
	Floor insulation	**Insulate** your floors	M					1c				1
		Insulate around the perimeter of your **floor slab**, where the edge is exposed to the outdoor air.	M								10	1
		Make sure your floors are **well-insulated**. If you have a crawlspace or unheated basement, you should have an insulation value of **R-11 to R-19** in your floors.	M								12	1
	Improve insulation	**Improve** insulation	M		WE5							1
	Seal air leaks and install weatherstripping	**Seal** Air Leaks	M		WE3	3	3					3
		Caulk and **install weatherstripping** around your home	M	641						2		2
	Close dampers	**Close** fireplace dampers	P					1f				1
	Weatherize your home	**Weatherization** Packages	M					18a				1
Windows and Doors	Install solar screening	**Install** exterior solar screens on windows	M		WE7							1
		Install reflective coating/solar screening on windows	M					2b				1
	Replace/install storm windows	**Replace** windows or **install** storm windows	M		WE1							1
		Install storm doors and windows	M					1e				1
		Cut your heating bills by **adding** storm windows, plastic film or interior insulation to your windows.	M								35	1
	Weatherize doors/windows	**Weatherize** your doors and windows	M					1d				1
		Caulk or **install weatherstripping** around your window and doors	M			6, 40, 41	6, 40, 41			37-40		3
		Check your weatherstripping and caulking around windows and doors. **Sealing** windows and doors against air infiltration can help save on both heating and cooling costs.	M								34	1
		Replace your electric water heater with a gas water heater	M	656								1

Recommendation Type	Characterization	Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE In-Home	SCG Mail	SDG&E Mail	SDG&E/ SCG Online	Number of Versions that Include Recommendations
Water Heating	Replace water heater	**Replace** your electric hot water heater with a higher efficiency model	EM	655		10	10			14		4
		Replace your gas water heater with a higher efficiency model	EM	672						27		2
		Replace your water heater	M		WH22							1
	Install timer	**Control** your water heater with a **timer**	M		WH23							1
	Install water heating equipment	**Install** a heat recovery water heating system	M		WH24							1
		Install heat traps on your water heater	M		WH17							1
	Maintain water heater	**Maintain** your water heater regularly	O		WH16							1
	Insulate pipes	**Insulate** your hot water pipes	M		WH19			5c				2
	Lower water temperature	**Lower** the temperature of your electric water heater from 160°F to 120°F	P	658		18	18			16		4
		Lower the temperature of your electric water heater from 160°F to 140°F	P	659		19	19			17		4
		Lower the temperature of your electric water heater from 140°F to 120°F	P			20	20			18		3
		Lower the temperature of your gas water heater from 160°F to 120°F	P	673					13	28		3
		Lower the temperature of your gas water heater from 160°F to 140°F	P	674						29		2
		Lower the temperature of your gas water heater from 140°F to 120°F	P							30		1
		Turn down the thermostat on your water heater to 120°F	P					5b				1
		Turn your water heater thermostat **down** to the lowest setting that will meet your needs. This is normally around 120°F.	P		WH10						33	2
	Adjust / turn off equipment	**Turn** your water heater **down or off when you're away** for extended periods of time	P					5g				1
	Wrap water heater	**Wrap** water heater with an insulating blanket	M		WH11			5a				2
		Install an insulation blanket around your water heater tank and **insulate** the first 5 feet of hot water pipe.	M								30	1
Water Use	Install energy efficient shower heads/faucet aerators	**Install** low flow shower heads and faucet aerators (electric)	M	660		21, 77	21, 77	5d		19		5
		Install low flow shower heads and faucet aerators (gas)	M	675					14	31		3
		Install low flow showerheads	M		WH13						31	2
		Install faucet aerators on your sinks	M		WH12						32	2
	Take shorter showers	Take **shorter** showers	P		WH14							1
	Replace refrigerator/freezer	**Replace** your primary frost-free refrigerator with a higher efficiency model	EM	668		32	32			25		4
		Replace your primary refrigerator with a higher efficiency model	EM	669		34	34			26		4
		Replace your refrigerator	M		FS13							1
		Replace your secondary refrigerator with a higher efficiency model	EM			36	36					2
		Replace your stand alone frost-free freezer with a higher efficiency model	EM	662		23	23					3

Recommendation Type	Characterization	Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE In-Home	SCG Mail	SDG&E Mail	SDG&E/ SCG Online	Number of Versions that Include Recommendations
Refrigerator/ Freezer		**Replace** your stand alone freezer with a higher efficiency model	EM	663		24	24					3
		Replace your freezer	M		FS2							1
		Replace your older refrigerator or freezer with a higher efficiency model	EM								21	1
	Maintain refrigerator/freezer	**Maintain** your freezer regularly	O		FS4							1
		Maintain your refrigerator regularly	O		FS8							1
	Adjust temperature	**Raise** the temperature setting of your freezer. Most manufacturers recommend a freezer temperature between **0° and 5°F**.	P		FS5							1
		Maintain the temperature setting of your freezer at **0° to 10°F.**	O					9c				1
		Raise the temperature setting of your refrigerator. The recommended range is **38° to 40°F**.	P		FS9							1
		Maintain the temperature setting of your refrigerator at **37°** to **40°F.**	O					9b				1
		Turn off your refrigerator's moisture control **heater**	O		FS6							1
	Remove secondary refrigerator/freezer	**Remove** or **recycle** your second refrigerator	O	691		52	52,78					3
		Remove or **recycle** your third refrigerator	O	692		53	53,79					3
		Remove or **recycle** your second freezer	O	671			80					2
		If you have a second refrigerator, **make sure it is a necessity**, as the average cost of running a second refrigerator can be up to $100 a year.	O								23	1
	Turn off refrigerator/freezer	**Turn** your refrigerator/freezer **off** when not in use	P					9a				1
		Turn off your other types of refrigeration when they are not in use	P					10a				1
		Unplug your second refrigerator	P							45		1
		Unplug your third refrigerator	P							46		1
		Turn off your second refrigerator	P		FS10							1
	Check door seals/gaskets	**Check** door seals	O					9d				1
		Replace worn or damaged refrigerator/freezer door gaskets to keep cold air from escaping and increasing operating costs. Also avoid opening the door unnecessarily.	O								22	1
	Clean coils	**Clean** condenser coils	P					9e				1
	Keep full	**Keep as full** as possible	P					9f				1
	Locate in conditioned space	Locate appliance in a **conditioned space**	O					10b				1
	Manually defrost	**Manually defrost** your freezer regularly	P		FS1							1
Dishwasher	Replace dishwasher	**Replace** your dishwasher with a higher efficiency model	EM	694	WH9	56	56			48		5
	Air dry dishes	**Air dry** dishes	P		WH7							1
		Reduce dishwasher energy use by using the 'energy saver' cycle, or by turning off the dishwasher at the end of the wash cycle and opening the door to **'air dry'** the dishes.	P								15	1
		Turn off during **dry** cycle	P					11a				1
	Wash full loads	Wash **full loads** of dishes when possible	P		WH5			11c				2

Recommendation Type	Characterization	Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE In-Home	SCG Mail	SDG&E Mail	SDG&E/ SCG Online	Number of Versions that Include Recommendations
	Operate during cool times	Operate your dishwasher during **cool times** of day or evening	P					11b				1
Laundry	Replace washer/dryer	**Replace** your washing machine with a higher efficiency model	EM	698		64	64			50		4
		Replace your clothes washer with a higher efficiency model	EM		WH4							1
		Replace your dryer with a higher efficiency model	EM		WH94							1
		Replace your electric dryer with a gas dryer	M	661								1
	Wash/dry full loads	Wash **full loads** of clothes when possible	P		WH1			13a				2
		Dry **full loads** of clothes when possible	P		WH91							1
		Dry **full** and **consecutive loads**	P					12a				1
	Use cooler water	Wash clothes in **cold water** whenever possible	P		WH3						17	2
		Wash and rinse laundry in **cold water**	P						39			1
		Wash and rinse laundry in **cold water** (electric)	P	725		72	72			56		4
		Wash and rinse laundry in **cold water** (gas)	P							57		1
		Wash your laundry in **warm or cold water** and rinse in cold water (electric)	P	727								1
		Wash laundry in **warm water** and rinse in cold water (electric)	P							58		1
		Wash laundry in **warm water** and rinse in cold water (gas)	P							59		1
		Wash your laundry in **warm or cold water** whenever possible	P					13b	40			2
	Operate during cool times	**Operate** your clothes washer during cool times	P					13c				1
		Operate your clothes dryer during cool times	P					12b				1
	Clean lint filter	**Clean** lint filter regularly	P					12c				1
	Match setting to load size	**Match** clothes washer load **setting** to load size	P		WH2							1
	Venting dryer	**Vent** your clothes dryer exhaust outside and check the vent and filter regularly	P					12d				1
	Dry outside	Use an **Outdoor Clothesline**	P	684		47				43		3
	Avoid over drying	**Avoid** over drying clothes	P		WH92							1
Pool/Spa	Replace pool pump motor	**Replace** your pool pump motor with a higher efficiency model	EM	695	PS6	68	68					4
	Install a timer	**Install** a timer for your pool filter pump	M	704		69	69					3
	Lower the temperature	**Lower** the temperature of your hot tub	P		PS1							1
		Lower the temperature of your pool	P		PS4							1
	Use a cover	**Use** an insulated cover on your spa or hot tub when its not in use (electric)	P	701		67, 78	67, 76			52		4
		Use an insulated cover on your spa or hot tub when its not in use (gas)	P	702						53		2
		Use your hot tub cover regularly	P		PS2							1
		Use your pool cover regularly	P		PS9							1
		Cover your pool, spa or jacuzzi when not in use	P					6d				1
		Purchase and use a pool cover	P		PS10							1
		Purchase and use your hot tub cover regularly	P		PS8							1
	Reduce use	**Reduce** the hours your pool filter operates	P								20	1
		Minimize the operating time of the pump and pool sweep	P		PS5			6b				2
	Clean filters	**Keep** filters and strainers **clean**	P					6c				1

Recommendation Type	Characterization	Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE In-Home	SCG Mail	SDG&E Mail	SDG&E/ SCG Online	Number of Versions that Include Recommendations
	Operate during cool times	**Operate** pool equipment during **cool times** of day or evening	P					6a				1
	Pool/Spa Grouped recommendations	**Reduce** the spa standby **temperature, run** the filter pump **fewer hours**, **minimize** the amount of time that the **blower jets** are used, and **cover** the **spa** as soon as you are finished using it	P	703								1
		Lower the **temperature** and **monitor** it with a thermometer, use a **timer** for your **spa filter**, **run the filter pump fewer hours**, **maintain** you spas **filtering system**, **cover** the spa as soon as you are finished using it, and minimize the amount of time that the **blower jets** are used.	P			80						1
Home Electronics	Turn off home electronics	Consider **powering off** your computer when not in use	P								7	1
		Turn off your computers **overnight**	P		OA10							1
		Consider **powering off** your printer when not in use	P								8	1
		Consider **powering off** your scanner when not in use	P								9	1
		Turn off your home electronics when they are not being used for extended periods of time	P					15a				1
Cooking	Use microwave or toaster oven	Whenever possible, **use** your microwave instead of your range or oven	P								16	1
		Use your microwave or toaster oven for small meals	P					8c				1
	Use self-cleaning sparingly	**Use** the self-cleaning feature on your oven sparingly	P					8a				1
	Only preheat when necessary	Only **preheat** your oven when necessary	P					8b				1
Waterbed	Replace waterbed	**Replace** your waterbed with an ordinary bed	M		OA9							1
	Insulate and cover waterbed	**Insulate** the sides and bottom of your waterbed	M		OA8							1
		Keep waterbeds **covered** with a comforter, quilt or blanket to prevent heat from escaping	P		OA6			16a			36	3
	Close windows	Keep your waterbed warm by keeping the **windows closed**	P					16b				1
	Lower the temperature	**Lower** the temperature of your waterbed	P		OA7			16c				2
	Waterbed Grouped recommendations	**Make** your waterbed every day and **cover** it with a comforter, use a **polyfoam mattress pad** and/or **insulate** the sides of the bed, and **don't overfill** your waterbed	P	729		73	73			60		4
	Use compact flourescent bulbs	Use **compact flourescent bulbs** and **automatic timers**	M	683		46	46					3
		Replace incandescent lights with compact fluorescent bulbs	M					14a, 18b			19	2
		Use compact fluorescent bulbs in **recessed fixtures**	M		LT7							1

Recommendation Type	Characterization	Description of Measure (Unique Measures)	Efficient Measure, Measure, Practice, or Other (EM, M, P, or O)	PG&E Mail/ In-Home	PG&E Online	SCE Mail	SCE Online	SCE In-Home	SCG Mail	SDG&E Mail	SDG&E/ SCG Online	Number of Versions that Include Recommendations
Lighting	flourescent bulbs	Use compact flourescent bulbs in places where lights are left on for **three hours or more per day**	M							42		1
		Use compact fluorescent bulbs in **high-use** lamps	M		LT3							1
	Replace halogen	**Replace** halogen torchiere	M		LT4							1
	Install timer	Install **timers** and/or **photocells** on security lighting	M	700				14b				2
		Install **motion sensors**, **timers** and/or **photocells** on security lighting	M							51		1
		Install **motion sensors** to control your outdoor security lights	M								18	1
	Turn off lights	**Turn off** unnecessary and decorative lighting	P					14c				1
		Turn off lights when not using them. Alternatives to flipping a switch include occupancy sensors, timers, and dimmers.	P		LT1							1
Other	Test for carbon monoxide	**Test** your home for **carbon monoxide**	O					4c				1
	Operate pumps during cool times	**Operate** pumps during **cool times** of the day or evening	P					7a				1
	Energy efficient	CONGRATS_ENERGY_EFFICIENT	NA			79						1
	Energy Star	Provided information about Energy Star	NA	657								1
	Low income	Mention low income rates	NA	688								1
	Medical needs	You may be eligible for lower rates due to medical needs	NA	689								1
	Payment options	Mention payment options	NA	690								1
	Trees and shrubs	In cold climates, windbreaks provided by trees and shrubs can reduce winter fuel consumption by creating insulating air spaces and also reduce noise and air pollution.	M								28	1
	20/20	Provided information about 20/20 Program	NA			81	81,82					2
	Summer Discount	Provided information about the Summer Discount Program	NA				83					1

Appendix M

Comments on the Evaluation

COMMENTS ON PROCESS EVALUATION FROM CUPC REVIEWER #1

The following draft report comments are provided by the CPUC.

1. The way satisfaction is treated allows participants with problematic satisfaction scores (somewhat satisfied) to be placed in the same analysis group as participants who have high satisfaction scores (very satisfied) making it difficult to understand the percent and distribution across the channels of the participants with lower than desired satisfaction scores or understand the degree of the low satisfaction scores or what they mean for the services provided. A somewhat satisfied score is the key group from which program change needs to be assessed in the process evaluation. These are the customers that most help us redesign the program, the purpose of the process evaluation. The report needs to have a rigorous analysis of this key group and develop program change recommendations as a result of that analysis.

ODC RESPONSE: We have separated very satisfied and somewhat satisfied throughout the report, and included additional analysis where available. (Note that the approved survey instrument did not follow up with "somewhat satisfied" customers about why they gave the rating that they did.)

2. It looks like there is a large group of the participant population that is saying the survey reports tells them to do what they have already done and that this is one of the key drivers of satisfaction. The report does not assess the drivers of satisfaction or provide a priority listing of these drivers. So it is hard to understand what it is that is driving the lower than expected satisfaction. It looks like one factor is the survey report and its contents. The analysis should look at the specific individual drivers of satisfaction and recommend specific changes to the operations of the program, including the design, content and delivery of reports that will increase overall satisfaction and decrease the number of customers who are somewhat satisfied. The report should identify the drivers of low satisfaction within the somewhat satisfied group and provide a theory and story of why satisfaction cannot be increased, or provide specific recommendations for increasing satisfaction and usefulness of the survey/audit report.

ODC RESPONSE: We have added additional information to the report about the drivers of satisfaction (to the degree possible given the scope of our work plan and budget). There is now a section in the satisfaction chapter called Overview of Drivers of Satisfaction.

3. The report does not assess if participants are looking for/expecting a different product than the one that is provided / received. The report indicates that participants are looking for more specific actionable things that they can do. This needs to be assessed and explored in greater detail. What are the recommendations for a product or a product redesign that can fill this need? Do

we channel them to the on-site audit when they need added detail? Do we need two levels of mail or on-line audits, do we need a section that asks about what they have already done and then put the finding in two sections; does the presentation need to be split into two or three sections with one being participant-specific analysis of their individual utility bill, one for what actions still need to be done and one that reinforces the behavior by congratulating them on what they have already done. If so, are we expecting energy savings or actions form the reinforcement component to have them network these reinforcements in their social networks? If so what is it that should be used to push the social networks to diffuse the concepts? Does the program theory reflect this goal well? The report needs to discuss these things.

ODC RESPONSE: We have addressed these issues in the Integrated Findings chapter.

4. It appears (from the evaluation results) the program theory and the product are not a match, and this needs a very clear and separate presentation and discussion about why they are not in match and what should be done on the program theory side and/or the program design and delivery side to make the theory match the program. For example, the program theory says that the program will channel participants into the other RA programs, yet the evaluation results say that this is not happening. According to the program theory this should be a very clear and evident result that can be traced to specific products or services or information that is specifically designed to do that. A review of the survey reports and information seems to suggest that this is not a strong part of the customer interface experience nor is it s strong part of the report or the recommendations. The evaluation needs to recommend how the program can be redesigned to accomplish the objectives in the program theory or conclude that the program theory should not have this result as an objective. Looking over the different approaches to the survey, the products and the methods of operation, it appears that this objective is both possible and probable if the program is designed to shuttle participants into these programs. The evaluation report should clearly address this issue and recommend the change to accomplish this objective.

ODC RESPONSE: We have added language to the Integrated Chapter and to the Program Theory chapter to address this issue.

5. There seems to be some "*may*" or "*might*" type statements in the report. Is this because the evaluation contractor is not sure of the action discussed or not sure of the results of the actions recommended? If so, this should be stated. Try and reduce the number of "*maybe*" or "*might*" or "*may*" type words and provide a clear decision, more of a "yes" or "no". If "may" or "might" are used, then give some words on the risks that are causing this word to be selected. Educate us about the reasons the "may" or "might" word is used, as these words convey caution to a manger. Managers have a very hard time making a program change when the evaluation contractor says that something might happen, or may be

effective. I have found that the words "*may*" or "*might*" act as stop signs for program mangers.

ODC RESPONSE: We use these words to make suggestions to our clients (and they should consider our suggestions within the political context and circumstances related to budgets, customers, etc.) Based on your suggestions, we have replaced the words "may" and "might" to the extent possible.

6. Need to have a list of all the measures in the appendix. It may be there already. I printed out the report file and have not looked very much at the appendix. Sorry if it is already there and I am commenting on what is already done.

ODC RESPONSE: Appendix L lists all recommendations made by channel.

7. It seems that you are asking to budget and assess the effectiveness of each channel so that we understand the value and accomplishments of each channel. Is this correct? I agree that these are different products / services, but are you saying that we need TRCs for each channel? Seems reasonable, but not sure if you are saying this or not.

ODC RESPONSE: We have changed the language from "budget" to "track" (per comments made at the presentation, and added clarifying language to specify that this is to help understand the value and accomplishments of each channel.

8. The report says that a control group is used? I think it is really a comparison group.

ODC RESPONSE: We have changed the write-up to use the term "comparison group" rather than control group.

9. Be a bit clearer on what you did when you say, "*we knowingly included potential indicators that do not fit into the current research plan in order to provide a robust picture of the program*". Present what was done, what metrics were added, etc.

ODC RESPONSE: We have removed this sentence, and added additional text throughout the report to clarify the issue.

10. There is not strong agreement in the professional evaluation field that PT/LM evaluation is a good approach. There are several key publications in our field that suggest that PT/LM evaluation is a poor way to design an evaluation because it often ignores alternative hypothesis testing or analysis. In my judgment there are more people in our field that do not strongly support PT/LM evaluation, than people who support it. This report presents this in a way that does not identify the weaknesses of this approach. Our programs are only one thing that is going on in the market, so we have to be careful about suggesting PT/LM evaluation is a good

or preferred approach. It is one aspect of the program evaluation planning process. If you have this section in the report you should also probably caution people about using it as the only way to design program evaluations.

ODC RESPONSE: We added the following note of caution in the PT/LM section. "However, according to the Framework, evaluators should not rely only on official program theory for their evaluation planning efforts. When evaluators examine the official program theory it is not unusual for the evaluator to identify alternative paths not reflected in the official program theory by which participants can reach the same desired outcomes as those reflected in the program theory." We have also added language to point out the need for considering external influences, market operations and behavioral factors when conducting evaluations that use PT/LM as an evaluation tool. We agree that PT/LM is a tool and is only as good as the tool and how it is used. More thorough PT/LM efforts do specifically identify external influences that inhibit (mitigate) or enhance program activities within the market place so these too can be measured and included in the evaluation & analysis plans.

11. Are there twelve different report configurations? That is, how many different configurations of the report are there? Are these radically different or only slightly different?

ODC RESPONSE: Section 4.2 and Table 4.2-1 explicitly address this issue showing 6 versions of the energy report and drawing attention to the key differences between the versions.

12. In your analysis can you tell the distribution of participants who are looking for a report that is specific to their house vs a report that is specific to an average house? What part of the participants within each channel type are looking for the average home recommendations, and which are looking for the recommendations that apply to their individual home and the actions they have done and the condition of their home?

ODC RESPONSE: Our analysis did not specifically ask if respondents expected a customized or generic report but we did ask participants whether they felt that the recommendations applied to their home. In addition, some participants mentioned that they were not satisfied because the information was not customized. We have added info in the Integrated Chapter to address this.

13. Can you be a bit clearer about the relationship between the number of recommendations provided within each channel and the participant's expectations of the participants within each channel for recommendations? Do you think the expectations for recommendations are balanced with the expectations within each delivery channel? Is there a way to determine the need for more specific recommendations per delivery channel compared to satisfaction with the recommendations received?

ODC RESPONSE: Our analysis did not include information linking the number of recommendations made to the satisfaction of participants. The data that we reviewed does not show an apparent link since satisfaction is highest for in-home, but lowest for online; while the number of recommendations is lower for mail than for online. The relevance of the recommendations appears to be a more important driver of satisfaction than the number of recommendations; however, the utilities may want to consider studying this more in future efforts.

14. On page 30 you say that auditors do not look at energy usage and do not estimate savings for the customer. Should this be a major finding and recommendation for changing the product?

ODC RESPONSE: We have added a finding to "Consider ways to better incorporate customer specific information, such as having in-home auditors have access to customer information prior to their audit. While all of the mail channels include customer-specific usage data in the energy report, most of the in-home and online versions of the report do not. Recommendations also vary across channels, and some of the channels do not provide customers with the estimated savings for each recommendation. Recommendations for in-home participants, for example, are specific to the home, but auditors do not look at energy usage."

15. I am not sure comments from single participants are important enough for the report. But conclusions about the degree of the issue are important if it is an issue that cuts across a portion of the market. You may want to look at your comments from individual participants and see if the issue is a systemic issue and then focus on the systemic issue instead of the individual comment. A population of one is a very small population.

ODC RESPONSE: We have removed the references to "one" person. Some of these references were originally were used to offer ideas that we agree with, but we have rephrased these to removed references to "one" person and just to offer the idea directly from the evaluator. We generally use respondent quotes as representations for a general finding. There are places where we mention "a couple of people" but that is due to the fact that those are the only comments that were made. Where we kept these, we have added notes to let the reader know that the information is qualitative and that we provide the comments because it is the only insight available on the questions asked.

16. Need a Recommendations section in the Executive Summary so the managers can see all the recommendations from the report in one location. Look through the report for areas where you identify an issue and then determine what recommendation is needed to address that issue and put it up front.

ODC RESPONSE: The first section includes a section called Recommendations with all of the issues that we have identified as needing to be addressed. We have renamed this to be "Recommendations from this Evaluation" to be more clear. We have also added an Executive Summary which lists all of our recommendations.

17. I would like to see the type of table on page 31 expanded so that the cells on the left are more detailed. For example, you have a box on "*provides savings per recommendation*", but this should be in multiple cells with one being "*provides estimated savings ($) for an average home*" and a cell for "*provides calculated savings for the participant's home*". Likewise the box labeled "*Refers customers to other utility programs*" needs to be in multiple boxes such that we know if: it is a general reference, a general reference with an 800 number or other contact information, a program reference to a specific program, a program reference to a specific program with contact instructions, a reference to a specific program with contact information and a brochure for that program, a follow-up referral to the program in which the program contacts the participant and trys to enroll the participant, a follow-up reference in which the program is instructed to send a brochure and contact information, etc. It would be good to know what channel provides a referral that is specific measure recommendation based, so that when the recommendation says to change out a refrigerator, there is a referral to programs that provide that measure via a rebate or other service that is active for the individual customer's address and their IOU You need to put all the options in these boxes that you think are possible and should be considered, and then populate them with what the program does or does not do. While this will produce a lot of "*does not do*" boxes, it will act as a program consideration guide to go through a number of potential ways to deliver the program and identify the programs that have or do not have that characteristic and it helps show the difference between the program theory and the delivery of services.

ODC RESPONSE: The boxes in the table provide this information to the extent available from our research (for example, savings that are "customized" are specified, but we underlined this to make it more clear), and we have included text stating that further examination of these issues is warranted. Our evaluation included an extensive analysis of the recommendations (much more than originally planned) and uncovered 12 different lists of recommendations, totaling 235 unique recommendations. Your question would require us to list 12 rather than 6 versions since each channel is different (so would lend itself to a different table)), and this information is not available for all 12 channels. For some utilities, we were provided with the complete description of the recommendation given, but for others we had only a "short" version of the recommendation and do not know exactly whether it gave an 800 number or not. Furthermore, information on when and whether a brochure is sent out is anecdotal. No records are kept. We have clarified these issues in the report, but as such we are unable to provide additional detail on who received a brochure. From our analysis, however, we did uncover the process related issue that not all recommendations that <u>should</u> give the web address, telephone number or information about the programs <u>do</u> give that information. We have clearly laid this out for the reader in this report and provided early feedback to the utilities in April 2005 that results in changes to the types of recommendations made. We agree that the utilities should be charged with the task of providing more information (which they have started to do) and future evaluation efforts may want to

(with the new knowledge of the importance of this issue) provide resources to have the evaluator examine each recommendation individually.

18. There needs to be recommendations of how the audit/survey service can be more linked with the IOU programs so that participants know exactly which programs are available to them that are structured to match the recommendations in the audit, and also provide one-step contact and enrollment approaches. I talked about this before (see above) to a limited degree, so you may already have this in mind.

ODC RESPONSE: We have added a recommendation to this effect.

19. The report refers to direct mail approaches, but it is not clear what a *direct mail* approach is. Some market research professionals do not consider bill inserts as a form of direct mail because it violates the one-contact-one-subject rule and is hampered by the message dilution theory of marketing, seems to me a bill insert is a form of bundled mail in which the bill is the major delivered item and the program information is the secondary information. When bill inserts are used, is it the only additional item in the bill, or are there other items that dilute the message? If I read this report it seems that the term direct mail can apply to bill inserts, program announcement mailings, brochure mailings, letters, or anything delivered via the U.S. Mail, is this correct? Can you be more specific when you use the term *direct mail* so that we know what it is?

ODC RESPONSE: We removed our references to direct marketing or direct mailing (indicating what is directly mailed). All other uses of the term "direct mail" are in information taken from monthly reports. This term is not explained in utility monthly reports so we provide all information available to us.

20. In the meeting we heard that there is no reduced Starbucks effects on participation. Can you put this in the report so we know that the participants did not sign up to get the Starbucks coffee?

ODC RESPONSE: We did not collect any data on whether there is a "reduced Starbucks effect" on participation. Although we uncovered the use of the Starbucks card in our analysis (and present it in our report because it could be important) people who received the gift cards were not examined as a separate group in our analysis.

21. On page 38 you suggest that the IOUs look at different messages to boost participation beyond savings but you do not suggest what these should be. You should specifically suggest what these should be or what should be considered so that they can be fully assessed and discussed. Are you saying to market comfort / reduced pollution / need for fewer new power plants / need for fewer peaking plants / less demand on limited resources / less need for nuclear power / global warming benefits / home value or resale value / fewer brownouts / more reliable distribution systems / etc. Give us your recommendations on what should be used in the marketing mix. I had a chat with Wally McGuire last month and he is

thinking that global warming is becoming so main-stream that messages should focus on this. He sent me an example of one. Do you agree and if so how should this be done for this program?

ODC RESPONSE: We provided a few additional comments about messages based on our experience, but tried to be clear that message testing was not a part of this evaluation effort. We have considerable amounts of data from other efforts in California and elsewhere (we recently conducted focus groups in the Mid-west specifically on message testing for the same Nexus program used by PG&E); this data, however, is not available for the HEES evaluation. Message testing was beyond the scope of our evaluation (although we refer you to the 2003 HEES evaluation which focused primarily on marketing of the HEES program.) We are more than happy to comment on possible options offline (outside of this report) if you are interested in our experience and opinions. (We provided opinions in the report as much as possible if they are within the scope and based on data collected for this evaluation.)

22. Need a table that specifically identifies what information the programs need to provide to the evaluation contactor to support the evaluation. A list is in the protocols if you would need to look at this. But this needs to be in this report also.

ODC RESPONSE: We have included a table (referencing the Protocols page 208) in section 4.4 of the report.

Thanks to all and I apologize for this taking me far too long to get to you. I look forward to the revised report. I have 2 other utilities that have asked to see this when it is public. Seems we are all fighting some of the same battles across state and international lines (trying to identify savings and improve these programs).

COMMENTS ON PROCESS EVAL FROM CPUC REVIEWER NUMBER 2

Overall: The report appears to meet all of the objectives of the approved EM&V plan, with the sample sizes targeted, and the program logic model addressed. It was known at the time the evaluation began that there wouldn't be real-time feedback to the implementers. Participants and nonparticipants were interviewed, and process issues were identified along with recommendations for the future.

Middle level: Agreeing that the evaluation met the basic CPUC requirements is different from uncritically accepting all the conclusions. Some findings seem clear, such as: the HEES program could benefit from an effort to make a) HEES more consistent across delivery mechanisms; b) the audit recommendations should be made more actionable; c) better record keeping would allow for targeted follow-up; d) the program isn't particularly effective at driving people to other program offerings, and e) repeated contacts may bring value to the utility and the consumer. At least one recommendation seems unsupported -- push more people to the online HEES, because it is less expensive (p.8). It is also has, based on the survey responses and the lack of impact data, questionable and untested efficacy.

ODC RESPONSE: We have reworded the recommendation to be more consistent with what the data supports.

COMMENTS FROM UTILITY ADMINISTRATOR OF EVALUATION CONTRACT

Overarching comments:

1. Could you beef up the Table of Contents, and number the subheadings within each chapter? That will help the reader locate sections more easily.

ODC RESPONSE: We have added numbered sub-headings to the Table of Contents.

2. Could you provide a summary table of the Statewide HEES program achievements (e.g. # of marketing mailers, # of participants for each utility, for each modality including # of online short- and long-survey participants), and include an accounting of the few Telephone survey participants as well? It would also be nice if you could break down the marketing efforts since HEES is increasing the number of non-English languages in which this program is offered.

ODC RESPONSE: A summary of participation is provided in Table 5.1-1. We have included a footnote on SCE's online participation numbers indicating the number of short versus long respondents (however, for the purposes of our analysis we treated these as one channel and due to resource constraints could not break each of the 12 channels down any further). The number of marketing mailers was not available for all utilities, based on our review of monthly reports. (However, all numbers provided by SCE are shown in Table 4.3-3.) Since the number of marketing mailers was not an indicator that we reviewed extensively (and since our efforts did not include analysis by language, only reiterating what was already stated in monthly reports) we did not include these numbers with overall participation.

3. In your discussions of HEES effectiveness at channeling participants into other programs, please keep in mind that your findings are inconclusive. One possible explanation is that HEES participants took part in the other EE programs prior to 2004 or 2002, rendering them ineligible to participate despite the HEES recommendations. This means that your last ¶'s recommendation to do more teaming up to channel participants into other HEES programs may or may not be valid. Teaming up is still an excellent idea. But please don't assume failure on the part of HEES, because the inconclusive findings may be due to the success of another program.

ODC RESPONSE: Paragraph was changed to the following… "Our methodology did not allow us to determine reasons why HEES participants did not participate more frequently in other programs. The study sponsors may want to consider exploring this issue further. If they wish to increase the percentage of customers that are fed into resource acquisition programs, the study sponsors should also consider coordinating with other energy efficiency programs and following up with customers based on the information that the customer provides in the HEES program survey to increase the percentage of customers that feed into other programs. For example, a customer who

states that they have a pool could be a candidate for the next targeted pool pump replacement program mailing. Our data suggest that customers are eager to get this additional information—61% of participants in the process survey said they wanted the utility to follow-up with additional ways to help them save energy. The effect of "following up" with customers, however, will depend on the reasons why HEES participants did not participate more frequently (e.g., if customers already participated, or don't need new appliances, following up will not increase participation rates in the respective programs.)"

4. I had asked at the beginning of the evaluation study to review the tests of statistical significance that were planned for the data, and I still wish to have that conversation. The use of significance tests has been applied unevenly to the data reported in this study, and I would like to request statistical tests of differences when they relate to a particular hypothesis under discussion. I would also like to know what significance level (e.g. alpha level) was chosen.

ODC RESPONSE: All survey responses were statistically analyzed using an independent t-test for means (unequal variances) and an independent z-test for percentages. Significance was determined at the 90% confidence level. Significance noted in the tables and in the text indicates statistical significance at the 90% confidence level +/- 10% error. This explanation has been added to the methodology and noted on all tables.

Minor comments:
Throughout: please use "who" when referring to people, and "that" when referring to things. There are frequent instances of "customers *that* are…" instead of "customers *who* are…".

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COMMENTS FROM UTILITY PAC MEMBER

Nice report! Just a few minor comments:

p. 33, Table 4.5 - The PG&E Marketing Activity listed as "Placed Vietnamese & Korean Mail survey on PG&E website 0.8%" is confusing to me. 0.8% was listed in November 2004 but then fell to 0.05% for December 2004 through February 2005. To what do the percentages refer and why did they fall from November through December 2004?

ODC RESPONSE: These are taken directly from the monthly reports. They refer to the percentage complete in that month (not the cumulative percentages). We have changed the note on the table to eliminate confusion.

p. 42 - Do you happen to know the marginal per unit audit costs. The provided numbers appear to be averages - marginal values would help us understand the efficiency of each effort.

ODC RESPONSE: We do not have information on marginal per unit audit costs (but this information would be valuable.) We added a sentence to reflect that we are presenting average costs, and that marginal per unit audit costs were not available in the spreadsheets but may be available from the utilities.

p. 47, Figure 5.3 - If the monthly PG&E online values represent total 2004 divided by 12 (per the footnote) why isn't the PG&E line in the graph flat?

ODC RESPONSE: This was a note made on an earlier draft when we didn't have monthly data. The note has been removed.

p. 58, Table 7.3 - Why is inquiry about the balanced payment plan encouraged? It would appear to work against conservation actions (particularly on peak conservation) since it dampens price effects.

ODC RESPONSE: This is a question for the utilities, but we did add a comment in the table to raise attention to this issue.

p. 85, Table 10.1 - The table is confusing to me … Are the pre and post participation groups non-overlapping? If they do overlap why are the post percentages sometimes smaller than the pre percentages.

ODC RESPONSE: Correct. They do not overlap. They are taken from two separate survey groups which explains why the post percentages sometimes appear smaller than the pre-percentages…but none of the decreases are significant so they do not actually represent any change between pre and post (i.e., they are effectively equivalent even though they appear to be slightly smaller percentages). We have added a table note to this effect.

The gas savings were higher than I expected. They represent approximately 10% of a typical customer's total gas consumption. Do you have any insight as to how long the savings persist?

ODC RESPONSE: Savings are a mix of equipment and practices. Analyses were not thorough enough to differentiate these. Savings from equipment would obviously be expected to last longer than savings from practice changes which could more easily erode over time. Given the instability in the coefficients and suggested further analyses, a more conservative estimate might be warranted for program planning purposes. A more thorough impact evaluation is suggested for future evaluation studies.