DRAFT FINAL REPORT
Low Income Energy Efficiency (LIEE) Household Segmentation Research For Southern California Edison 2009-2011

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EXECUTIVE SUMMARY

This report summarizes research completed to identify distinct marketplace segments among Southern California Edison's low income customer population to support outreach and program delivery efforts of SCE's Low Income Energy Efficiency (LIEE) program[1]. Although this research is a joint project with Pacific Gas and Electric Company, results among PG&E's low income residential population are not included in this report. A similar but separate report will be developed for PG&E.

Introduction and Background

The Low Income Energy Efficiency (LIEE) program is designed to provide California's low income population with a resource that assists customers in lowering energy costs, reducing the financial burden of energy bills, and improving quality of life in terms of issues related to physical comfort and safety. The LIEE program provides no-cost services and energy efficiency measures including lighting retrofits; Heating, Ventilation, and Air Conditioning (HVAC) retrofits; refrigerator and pool pump replacements; duct testing and sealing; evaporative cooler installation; water heating measures; weatherization; minor home repairs; and furnace repairs and replacements. The program is intended to provide an energy resource for California, produce energy savings, and reduce low-income customer bills.

The results of the study are intended to assist Southern California Edison (SCE) in targeting outreach efforts based on existing customer data that includes: geography, relevant demographics, energy burden (energy use compared to income), energy insecurity (frequency of bill payment difficulties), and level of energy use. In addition, the findings are expected to be utilized to provide targeted communication plans that will improve outreach results, particularly in so far as they increase customer receptivity and participation through more customized and appropriate messages and program offerings.

Methodology

To achieve the segmentation objectives, the research team followed a four-phase approach that included: (1) database analysis and segmentation, (2) qualitative focus group discussions, (3) quantitative telephone surveys, and (4) additional focus group discussions (Table 1). Each phase of the data collection and analyses provided a different type of information that informed the final segmentation results presented in this report. Additional details on each of these phases of data collection and analyses are described below in the Methodology section of the report.

Table 1: Data Sources and Purpose

[1] While in this report the program is referred to as the LIEE (Low Income Energy Efficiency) or EMA (Energy Management Assistance) program since these were the statewide and SCE names of the program for the 2009-2011 research cycle, forthcoming, the new statewide name for the program is Energy Savings Assistance Program.

Data Source	Type	Number	Dates	Purpose
Low Income (CARE) Customer Population	SCE Dataset: utility, geographic, and census data	100,000 analyzed	Aug 2010	Determine segments, assign customers to a segment
CARE Customers: temperate, non-temperate, high usage	Focus Groups	6 groups	Feb 2010	Understand issues for quantitative survey
CARE Customers: stratified by segments	Telephone Survey	1,536 interviews	Oct/Nov 2010	Validate and profile the segments
CARE Customers: high and moderate interest segments	Focus Groups	3 groups	Feb 2011	Discuss barriers to LIEE program and messaging

In brief, the four phases include:

(1) Database analysis and segmentation. The purpose of the database segmentation was to create some basic segments that could be built from the information available within SCE's billing database which would enable the program to identify and assign customers to specified segments. Traditionally segmentation studies are built from survey data that make it difficult to tie back to specified customers. The approach to build the initial segmentation solutions from the available customer data allows the program to utilize these results in targeting specified customers.

(2) Qualitative focus group discussions. While the dataset of SCE customer data was being analyzed, a set of focus groups were conducted in order to understand customer issues, concerns, attitudes, and experiences that may be relevant in assisting to design the quantitative survey.

(3) Quantitative telephone survey. Because the initial analyses executed on the dataset records is limited by virtue of the data available, it was important to augment the analyses with additional information that could be collected via a phone survey with a subset of customers. In particular, relevant attitudes, behaviors, and demographics that traditionally assist in describing segments were examined via a phone survey. The telephone survey served to both validate the database segmentation through identification of additional discriminating variables as well as to provide further profiling information of the customer segments in order to give a more comprehensive understanding of the low income customer segments.

(4) Qualitative focus group discussions. Following the segmentation analyses another set of focus groups was conducted to identify marketing barriers and program participation issues that may be relevant to various segments.

Segmentation Results

The LIEE segmentation research identified eight customer segments:

Table 2: Low Income Customer Segments

Segment	Name (Lower Energy Usage)	Percent of Pop.
1	Low Use, Low Touch	21%
2	Young Inland Conservers	17%
3	Older Coastal Conservers	16%
4	Struggling Modest Renters	14%
Segment	**Name (Higher Energy Usage)**	**Percent of Pop.**
5	Larger, Older Households	14%
6	High Use Newer Homeowners	9%
7	High Usage, Most Problems	5%
8	Less Involved Younger Homeowners	5%

Again, while the segments were initially identified via customer database information, the additional focus group and survey data augmented our understanding of the segments. Briefs descriptions of each segment, based on quantitative information from the dataset and the telephone surveys, follow. Note that in the following descriptions the term "average" refers to the mean of the population, and "above" or "below" average indicates that the segment is significantly and substantially different from the population regarding the characteristic.

Segment 1: Low Use, Low Touch (21% of the population)

These coastal, urban apartment dwellers are in some of the oldest and smallest dwellings. Though their homes are among the least energy efficient, they tend to be among the best energy conservers – they are motivated to use less energy both to save money and for the environment, and they believe they know what to do. It probably helps that they also have fewer energy consuming appliances and electronics, and most do not to have central air conditioning. As a group, they have the lowest income, fewer household members, and they tend to be Hispanic and Spanish-speakers. This segment is also very low touch – they are below average in SCE program participation and in frequency of contacting SCE, and have very few bill problems.

Segment 2: Young Inland Conservers (17% of the population)

This segment is defined by younger families in small, newer homes in inland areas, who not surprisingly are more likely to have newer, central AC and newer refrigerators. They include an above average proportion of renters. Since they are inland, these customers mentioned heating and cooling as a main barrier to saving energy – which might explain their above average participation in the Summer Discount Plan (SDP). They also mentioned that having too many energy-consuming appliances and electronics is also a barrier – although as a group they are quite average regarding the number of appliances and large electronic items (such as TV's) that they actually have. Despite their perceptions about their energy consumption, they are low energy users with very few bill payment problems.

Segment 3: Older Coastal Conservers (16% of the population)

These customers are similar to Segment 1, with the exception that they tend to be older homeowners rather than younger renters. Located in coastal areas, their homes are older and among the least energy efficient, yet they keep their energy usage below the average. It probably helps that most don't have central AC, but they also don't perceive that they have obstacles to conserving (even with their older homes they are less likely than any other segment to believe that the condition of their home is an obstacle). Those who do have AC tend to set it warmer in the summer time than other segments as well.

They are the segment with the fewest bill payment problems, the lowest percentage of past EE program participation, and the highest proportion (along with segment 1) who believe they've been successful in conserving energy. Likewise, this segment has relatively few household members. Despite being older, they tend to have a lower incidence of health problems, too.

Segment 4: Struggling Modest Renters (14% of the population)

This segment includes renters in smaller homes (high proportion of apartments) with fewer energy efficient features and fewer actions taken to improve this (likely because they are renters). It includes the highest proportion of all electric homes and a high proportion of window AC's, but relatively few appliances or other electronics. Though energy usage is moderate overall, this segment has the second highest rate of bill payment problems.

Demographically, this segment is very similar to the low income customer population as a whole, but with a higher proportion of those with Hispanic and African-American backgrounds, Spanish speakers, and those who identified that someone in the household is disabled. Barriers to reducing energy usage are also quite similar to the low income population nor is there a geographic concentration.

Segment 5: Larger, Older Households (14% of the population)

This segment has high energy usage, in part because they are in larger, older homes that do tend to have more EE features than average, but not recent improvements. They are likely to be homeowners (not renters) and their time (years) in residence is much higher than the average, too. Very few have had bill payment problems. They have newer, central AC as well.

Consistent with being homeowners and with their longevity, these customers tend to be older. A higher-than-average proportion are on medical baseline and the Level Payment Plan (LPP), too. However, their household sizes tend to be larger – perhaps with older children or multiple generations in the home, or even boarding house situations. They are geographically dispersed.

Customers in this segment are more motivated by saving money on their bill and less motivated by environmental concerns. Perhaps because of their larger household sizes, cooperation from others in the home is an obstacle to reducing energy use.

Segment 6: High Use Newer Homeowners (9% of the population)

This segment has the highest energy usage – not too surprising since they are in larger homes with the largest average household size located in the inland valley and desert areas. Their homes are among the newest among the low income segments, with a higher proportion of EE features for the home. Demographically, these customers tend to be homeowners, middle aged (45-64), higher income, and with an above average proportion of someone who is disabled in the household, but they are average regarding payment problems (not struggling like two of the other segments, although higher than four other segments).

Also contributing to high energy use, this segment has a high proportion with AC (central, or evaporative or swamp coolers), the highest proportion of appliances and electronics, and they place above average importance on "comfort" (vs. saving money or the environment), likely related to living inland in the hotter summer climate zones.

They have above average participation in Home Energy Efficiency Surveys (HEES) and the Summer Discount Plan (SDP), so apparently they are aware of their high usage situation and want to do something about it. They also stated that they believe they could do more to reduce their usage, but their large households mean cooperation from others is a major barrier.

Segment 7: High Use, Most Problems (5% of the population)

This segment has the second highest electricity usage among the eight groups, but the highest incidence of bill payment problems. They are predominantly renters with larger household sizes in the inland climate zones – they are average regarding the age of their home, but are above average for past participation in LIEE and above average regarding their incidence of energy efficiency improvements having been made while living there. Also, they are more likely than average to be on medical baseline and Level Payment Plan (LPP).

These households are average regarding the number of appliances they have in the home (they are renters and appliances tend to come with the home), but they are above average in ownership of electronics (TV's, computers, game consoles, etc.)

They do tend to have AC, with the highest incidence of swamp coolers of all the segments. They place above average importance on comfort (rather than saving money on their bill or the environment), and they face cooperation from others as a barrier (similar to other segments with larger household sizes). Regarding the energy behaviors, they do not always turn off lights or TVs when not in use. Consistent with their payment histories and medical baseline participation, they also have bill worries and health concerns.

Segment 8: Less Involved, Younger Homeowners (5% of the population)

The most affluent of the segments, these customers tend to be younger homeowners, with larger household sizes. They have more appliances and more electronics than the average low income customer as well. They are also more likely than average to have participated in energy efficiency rebates and the Home Energy Efficiency Survey (HEES) program. Heating and cooling is their main obstacle, and to this end they do tend to set their thermostats higher than the norm during the summer time. This segment has an average incidence of payment problems.

This segment is most distinctive because they are less engaged in energy than any others – they are less likely to take action to reduce their energy use, and they are less likely to think they have been successful in reducing their energy use.

Segmentation Recommendations

In order to further the objectives of improving targeting and outreach activities, the following recommendations should be considered:

- Classify the entire low income population into the eight segments. Because the segments were determined using variables that are common across nearly all low income customers in SCE's database, nearly all customers in the database can be classified into one of the eight segments. Following this, customers from identified segments can be targeted by program implementers with more specific messages and media. For example, direct mail with a segment-specific message could be sent to just those households that are members of the segment.

- Prioritize the segments. The segments are differentiated based on electricity usage, energy burden, demographics, and other characteristics, so some segments include higher proportions of potentially qualifying customers as well as customers with greater need. Therefore, the efficiency and efficacy of program outreach can be improved by focusing on some segments sooner than others. Moreover, the prioritization of segments should remain somewhat fluid to account to the changing needs of the program. For example, if program administrators identify specific geographic regions or if types of customers are under-represented in program delivery efforts, prioritization of the targeted segments should be reviewed and modified.

- Use additional variables in the dataset to further screen members of a segment into smaller subgroups for even more precise targeting. For example, the dataset includes a variable of the date that service was first established at a premise. Since older homes are more likely to qualify for the types of improvements provided by the LIEE program, this variable can be used to remove all newer residences from a targeted segment. As another example, household energy usage data can be used to remove households with very low

usage amounts, so that program resources can be applied to households with greater energy savings potential.

- Apply geographic information to assist program implementers with neighborhood targeting. The dataset can be used to find the ZIP codes that contain higher proportions of customers who belong to higher interest segments. These ZIP codes can be mapped, from which a geographic implementation plan can be developed. This can be taken a step further in the field, where members of different segments can be targeted with different messages or methods of approach.

- Periodically refresh the low income customer dataset. The segmentation algorithm can be applied to new households with at least one year of energy usage history to classify them into one of the eight segments. This is needed since new households will otherwise remain unclassified regarding their segment membership. This will ensure that the natural pattern of households moving in and out of different residences does not render the segmentation obsolete after just a few years. Also, segment membership for all households in the low income customer database can be refreshed periodically (such as every three to five years) to account for changing dynamics within a household.

LIEE Program Marketing and Design Implications

The results of this study also inform marketing and program design. Overall findings that can be generalized across the low income customer population suggest that: (1) customer awareness and knowledge of the LIEE program have room to grow, (2) some customer barriers to participation could be addressed, (3) participation could be motivated by suggested messaging, and (4) renters face some unique issues.

Specific recommendations follow. These recommendations do not imply that SCE has not been or is not currently addressing these issues, but rather that these issues should be considered when developing future plans. Also, the recommendations are not intended to be binding, in part because this research did not include a process evaluation. All recommendations need to be considered within the context of feasibility, cost effectiveness, and any other relevant criteria.

Awareness and knowledge building recommendations include:

- Continue communications to raise awareness above 50% (current level). It's not unreasonable to strive for higher awareness of the LIEE program among the population of CARE-eligible customers with whom 90% or more already participate in CARE.

- To reach customers, augment direct mail and bill inserts with more personal direct contact methods (e.g., telephone including automated calls, email, and community events). These are the methods most preferred by customers. Other

methods of outreach, including door-to-door, were not as popular with customers but could still have a place in the overall program outreach portfolio.

- Employ strategies to encourage word-of-mouth. Word-of-mouth was found to be the number one source of information about the program among those already familiar with it, so efforts to encourage more of this could pay off. For example, a "refer a friend" program could be established. This also suggests that testimonials could be effective for overcoming customer hesitations to sign up (discussed below). The downside is that word-of-mouth tends to promulgate incomplete information, so there is still a strong need for direct communication from SCE to customers.

Top barriers to participation that customers face (once they become aware of the program and it is "in their minds") include: not sure how to sign up, don't think they will qualify, someone else probably needs it more, don't think they will need it, and concerns about program quality. Overcoming these barriers might require both short term and long term solutions. Actions to consider are:

- Ensure awareness building communications provide enough information so customers can and do take the next step – such as directions on how to sign up, and a call to action.

- Clarify misperceptions. Common misperceptions are that: (1) the program can run out of funds, which discourages customers from being more proactive regarding participation, (2) qualifying is "all or nothing," so that customers who have had some weatherization or who have a new refrigerator might believe they won't qualify, and (3) the program is for a single measure, such as "refrigerator replacement" or "weatherstripping" rather than providing a more comprehensive package of measures. This last misperception stems from incomplete information – many customers just don't know too much about LIEE.

- Use testimonials to overcome customer concerns about program quality (e.g., workmanship, appliances, etc.) or "it's too good to be true."

- Increase program "appeal" so more households think they need it. For example, add measures to provide more control, such as smart power strips and timers, or enhance program education to target different audiences such as children, teens, seniors, disabled, etc.

In the telephone survey, LIEE participants[2] were asked their main reasons for signing up for the program. Saving money and saving energy were mentioned as the top two reasons, followed by receiving the free measures (refrigerator, light bulbs, weather stripping, etc.) From the final focus groups, "saving energy" implied "doing without" for some people, so might not be as motivating as saving money.

[2] The LIEE participant group included customers who stated they had participated in the LIEE program at any time in the past. The data do not reflect participant customer data from a specified program year.

- Program messaging could make use of these top of mind and salient reasons, for example with a "save money without spending any" message.

Customers also discussed message ideas and personal desires in the qualitative research. This information fuels the messaging recommendations:

- Messaging should include descriptive information, functional benefits, and an emotional leverage point. Descriptive and appealing message statements include:

    - The program provides energy-saving appliances and services including refrigerators, home weatherization, and energy efficient light bulbs.

    - SCE will pay all costs of purchasing and installing the appliances for the program.

    Functional benefits to which customers responded favorably are:

    - Helps your household use energy more efficiently.

    - It's easy to participate – just call Southern California Edison or go to SCE.com and complete an online application.

    An emotional leverage point is:

    - Using energy more efficiently allows you to do more of the things you want to do.

Renters face the additional barrier of needing to get their landlord's permission. Most renters are hesitant to contact their landlord, so the program could take steps to address this. Ideas include:

- Develop a marketing campaign targeted to renters that can address their hesitancies about contacting their landlord, and about making changes to a physical structure that they don't own.

- Add program measures that do not require landlord approval, such as plug-in control devices or an enhanced CFL component.

I. INTRODUCTION AND BACKGROUND

The Low Income Energy Efficiency (LIEE) program is designed to provide California's low income population with a resource that assists customers in lowering energy costs, reducing the financial burden of energy bills, and improving quality of life in terms of issues related to physical comfort and safety. The program is operated by SCE, PG&E, San Diego Gas and Electric (SDG&E), and Southern California Gas (SoCalGas).

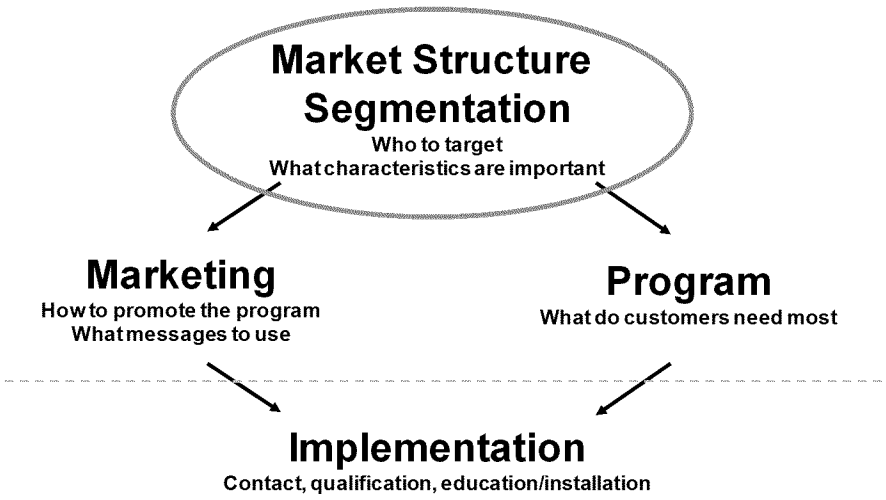
The LIEE program provides no-cost services and energy efficiency measures including lighting retrofits, Heating, Ventilation, and Air Conditioning (HVAC) retrofits, refrigerators, pool pump replacements, duct testing and sealing, central air conditioner maintenance, evaporative cooler installation and maintenance, attic insulation, water heating measures, weatherization, minor home repairs, and furnace repairs/replacements. In addition, the program also provides information and education that promotes energy efficiency practices. The program is intended to provide low-income households with an energy resource for California, produce energy savings, and reduce low-income customer bills.

SCE and PG&E proposed a Low Income Energy Efficiency (LIEE) Segmentation Study that combines targeting (effective location and identification of energy-burdened households or energy-insecure households) with efforts to tailor outreach medium and message to defined segments within the LIEE eligible customer base.

The results of the study are intended to assist Southern California Edison (SCE) and Pacific Gas & Electric Company (PG&E) in targeting outreach efforts based on existing customer data that includes: geography, relevant demographics energy burden, energy insecurity, and level of energy use. In addition, the findings are expected to be utilized to provide targeted communication plans that will improve outreach results, particularly in so far as they increase customer receptivity and participation through more customized and appropriate messages and program offerings.

Figure 1 below demonstrates the primary purpose of this research: to determine the market structure of the low income population in order to identify who to target and what characteristics are most important for these target segments.

Figure 1. Research Goals



The results also have the potential to inform relevant marketing channels and messages as well program measures that may be relevant or appropriate for specific target groups.

The specific objectives of the study included:

- Facilitate identification and targeting of eligible customers for LIEE programs.
- Examine awareness, attitudes and behavior regarding energy efficiency and household needs for particular segments of low-income customers.
- Recommend utility-specific customer targeting strategies that take into account each utility's current database infrastructure, previous findings, available data, as well as the appropriateness of particular services for particular households.
- Specify the messages, products, and outreach vehicles to maximize program participation among particular segments.

Additionally, the segmentation research sought to determine the "market structure" of the low income customer population, based on the criteria that:

- Segments reflect the relative customer "need" for the LIEE program.
- Segments can be identified in the Utility's low income customer records, so that all customers can be classified ("scored") into a segment.
- Segments are differentiated on other descriptive variables, including energy attitudes, motivations, behaviors, and other variables.

The forthcoming results included in this report are based exclusively on the analyses of the SCE customer data. Results among Pacific Gas & Electric Company's low income residential population are not included here. Also, the results and recommendations are not intended to be binding, in part because this research did not include a process

evaluation. All recommendations need to be considered within the context of feasibility, cost effectiveness, and any other relevant criteria.

II. METHODOLOGY

To achieve the segmentation objectives, the research team followed a four-phase approach that included: (1) dataset analysis, (2) qualitative focus group discussions, (3) quantitative telephone surveys, and (4) additional focus group discussions (Table 1).

Table 3: Data Sources and Purpose

Data Source	Type	Number	Dates	Purpose
Low Income (CARE) Customer Population	SCE Datasete: utility, geographic, and census data	100,000 analyzed	Aug 2010	Determine segments, assign customers to a segment
CARE Customers: temperate, non-temperate, high usage	Focus Groups	6 groups	Feb 2010	Understand issues for quantitative survey
CARE Customers: stratified by segments	Telephone Survey	1,536 interviews	Oct/Nov 2010	Validate and profile the segments
CARE Customers: high and moderate interest segments	Focus Groups	3 groups	Feb 2011	Discuss barriers to LIEE program and messaging

Each of the four phases is described in more detail below:

(1) Database analysis and segmentation. The first phase of analyses was based on SCE customer data, including energy usage, program participation, bill payment history and disconnects, climate zone, and other variables. The purpose of the database segmentation was to create some basic segments that could be built from the information available within SCE billing database which would enable the program to identify and assign customers to specified segments. Traditionally segmentation studies are built from survey data that make it difficult to tie back to specified customers. The approach to build the initial segmentation solutions from the available customer data allows the program to utilize these results in targeting specified customers.

(2) Qualitative focus group discussions. While the dataset of SCE customer data was being analyzed, a set of focus groups were conducted in order to understand customer issues, concerns, attitudes, and experiences that may be relevant in assisting to design the quantitative survey.

(3) Quantitative telephone survey. Because the initial analyses executed on the database records is limited by virtue of the data available, it was important to augment the analyses with additional information that could be collected via a phone survey with a subset of customers. In particular, relevant attitudes, behaviors, and demographics that traditionally assist in describing segments were examined via a phone survey. The telephone survey served to both validate the database segmentation through identification of additional discriminating variables as well as to provide further profiling information of the customer segments in order to give a more comprehensive understanding of the low income customer segments.

(4) Qualitative focus group discussions. Following the segmentation analyses another set of focus groups was conducted to identify marketing barriers and program participation issues that may be relevant to various segments.

Database Segmentation

For the first phase of research, Southern California Edison pulled data from their primary billing database (CSS) to create a dataset of service account-level information among the current CARE customer population. The utility's CARE customers include customers who are participating in a "rate discount" program which entitles them to a 20% discount on their electric bill.

About 2 million SCE CARE customer records were examined during this phase of the project, although the actual segmentation analysis was completed using a randomly-generated subsample of 200,000 CARE customer records for more efficient data processing. At any moment in time, SCE has fewer than 2 million CARE customers, but the dataset included those enrolled in CARE at a specific residence for at least one year out of the three year period from which the data was gathered. About 865,000 of these customers were in CARE at the same residence during the entire three years. Another 530,000 moved into a new residence and/or enrolled in CARE at some point during the three-year period, and the remaining 675,000 moved out or dropped out of CARE during the same three-year period. It is possible and acceptable that a "move-out" customer is included again as a separate "move in" customer, since the relevant unit of interest is the unique combination of a household living in a specific location. For example, a family moving from one residence to another is likely to have different energy consumption levels between the two locations, just as one specific residence can different energy consumption patterns between two different households that may have lived there.

The CARE population was used to represent the population of LIEE-eligible customers because eligibility requirements for the two programs are similar, and the population of CARE participants is estimated to include a high percentage all CARE-eligible customers. The service account-level data included several types of data: utility-billing and usage records, utility program participation data, geographic data, and census-derived data.

The utility data is typical of the information that is used to transact utility customer business, and was compiled across the previous three years. These data include: monthly kWh usage (consolidated into 12 quarters), frequency of program participation (e.g., the LIEE program, the mobile home EE program, energy efficiency rebates, appliance recycling, home energy efficiency surveys, level payment plan, energy assistance fund, and an online account service called MyAccount), frequency of specific payment anomalies (e.g., disconnections, contacting SCE about payments, overdue notices and fee events, SCE-created credit score), year service account was established, year premise was established, housing type (e.g., single family, multi-family, mobile home), and language preference (e.g., the customer used a language gate or specified a language preference to SCE).

The geographic data included a climate zone indicator of the service address (used by California's investor owned utilities for determining energy "baseline" allocations, among other things), physical location (city/county/ZIP), and an urban/rural indicator. Most customer accounts include these data. .

Census-derived data is modeled from census block-level data and includes: rooms per dwelling, year built, household income, household size, density (people per square mile), and renter proportion. Because these data are promulgated at the block level, it tends to be less accurate when used in this type of household-level analysis since the household-level data is effectively the average of the entire census block. As such, individual household differences are not well represented by these data

This combined dataset of utility, geographic, and census data was used to develop an initial comprehensive multi-dimensional segmentation solution.

Analytical Method

A multivariate technique known as cluster analysis was used to determine the initial residential low income customer segments. Cluster analysis assigns individual records (i.e., low income customers in this case) to groups that are similar based on the variables that are included in the dataset used for the analysis. The analyses using this technique are data-driven and not influenced by *a priori* assumptions.

At the same time, cluster analysis requires the analyst to choose the number of clusters. Typically, cluster analysis for segmentation purposes is used to generate solutions that include between 2 and 10-clusters. After the results are reviewed, modifications can be made to adjust the number of clusters to support a solution that offers the greatest interpretability and insight for understanding the population. In this type of analyses, it is often the case that the solution includes the maximum number of clusters stopping short of a solution that produces extremely small and irrelevant clusters, or clusters that are so extensive that the clusters that are not very different from each other.

Initial Focus Groups

For the second phase of the research, six focus groups were conducted, with an average of 8 customers per group. Two focus groups were completed with high usage customers living in a temperate climate zone, and four focus groups were completed among a cross section of all low income customers (two each in temperate and non-temperate climate zones).

Customers were randomly selected and recruited from SCE's population of CARE customers residing within 15 miles of the location of the group. Customers were further identified based on: (1) past LIEE (Energy Management Assistance) participation, (2) Spanish-language preference, and (3) past-year electricity usage. The High Usage groups included customers with past year usage in the top quintile (top 20%) for their climate zone. All other groups included a mix of customers across all usage levels.

During recruitment for the groups, customers were asked additional questions to ensure that each group included people in different life circumstances: number of people in the household, age, gender, owners and renters, and income (within the limits of CARE qualification.

The following table illustrates the breakdown of the groups.

Table 4: Pre-Segmentation Focus Group Locations

Date	Location	Group Composition	Language
Feb 2, 2010	Long Beach	LIEE Participants	English
Feb 2, 2010	Long Beach	Non-Participants	English
Feb 3, 2010	Los Angeles	High Usage	English
Feb 3, 2010	Los Angeles	High Usage	Spanish
Feb 4, 2010	Palm Springs	Non-Participants	Spanish
Feb 4, 2010	Palm Springs	LIEE Participants	English

The discussion areas of these groups covered topics such as

- Energy efficient and inefficient habits and behaviors
- Reasons and motivations for increases and decreases in energy use
- Reasons for high use relative to neighbors
- Barriers to adopting more energy efficient behaviors
- Gain insights into customer hardships and dealing with energy bills
- Gain insights into customer awareness and perceptions of the LIEE program (known as Energy Management Assistance or "Emma"), and barriers to participation

The information from these focus groups was used to further our understanding of this customer population, provide further insight that can help explain the differences between the segments created from dataset clustering, and develop the quantitative research instrument for the telephone survey.

Quantitative Telephone Survey

In the third phase of research, the research team completed 1,536 telephone survey interviews to assess low income customers' beliefs and attitudes regarding their household's energy use, and collect additional demographic information not available in the billing database. As noted earlier, the results of these surveys were intended to augment the initial segmentation solutions with additional descriptive information about these different groups of customers.

The phone survey was designed to better understand various attitudes, behaviors, motivations as well as demographic variables that differentiated key groups within the low income population. Since there were some similarities in the needs of the two projects, the survey was designed to meet the objectives of both the High Usage Needs Assessment Study and the Household Segmentation Study.

The survey sample frame included the population of SCE's CARE-eligible customers. Since five of the segments initially determined by the dataset analysis were relatively small (less than 15% of the population) given the proposed sample size, the survey sample was stratified across the eight cluster-derived segments, and sampling was done randomly within strata. An "oversample" of interviews was completed for the five smallest segments in order to boost the number of completed interviews above 170 for each segment. Results were then weighted within each segment to match population proportions.

Because the low income population includes not only English-speaking customers but those who speak languages other than English, a variable that indicates the customer's language preference was used to identify customers with a Spanish-language preference. These Spanish-speaking customers represent approximately 30% of SCE's low income population, so additional quotas within each of the eight segments were determined for customers with a Spanish-language preference. These customers were contacted and interviewed in Spanish
In total, each segment was represented by between 173 and 251 interviews, with oversample quotas ranging from 5 to 131 interviews. These sample sizes provide margins of error for each segment between 6.2% and 7.4% at a 95% confidence level.

Table 5: Telephone Survey Sample Sizes

Segment	Size	Proportional Sample Quota	Over-Sample	Total Sample Quotas	Margin of Error (95%)
1	21%	251	-	251	+/- 6.2%
2	17%	204	-	204	+/- 6.8%
3	16%	194	-	194	+/- 7.1%
4	14%	168	7	175	+/- 7.4%
5	14%	168	5	173	+/- 7.4%
6	9%	108	66	174	+/- 7.4%
7	5%	60	114	174	+/- 7.4%
8	5%	60	131	191	+/- 7.4%
Total	**100%**	**1,213**	**323**	**1,536**	

The interviews were completed using a Computer Assisted Telephone Interview (CATI) system between October 12 and November 8, 2010. The average interview length was 21 minutes in English and 24 minutes in Spanish. Refusal rates were quite low at 31% among English speakers and 21% among Spanish speakers.

Survey topics included: demographics (e.g., age, gender, education, income, ethnicity, disabled person in home, number in household), home characteristics (e.g., type, square footage, own or rent, energy efficient features, type and age of AC), type and number of major appliances, type and number of major electronics, energy-rated attitudes (overall effort made to save energy, beliefs about success, self-described

obstacles, agreement/disagreement with attitude statements), energy-related behaviors (e.g., frequency of taking specific actions, HVAC temperature settings), connection with utility programs (e.g., overall opinion about utility EE programs, awareness and participation in specific EE programs), LIEE program (awareness, knowledge, participation, barriers), and information source preferences.

The telephone survey data were used to profile the eight cluster-derived segments to identify key behavioral, attitudinal, circumstantial, situational, and demographic variables that differentiate between the segments. In this way, the survey data was used to validate segment differences identified by the initial dataset variables, as well as identify relevant behavioral, attitudinal and demographic variables that contribute to differences among the segments.

Final Focus Groups

A final set of three focus groups was conducted with customers from several higher usage segments, primary to better understand customer needs and barriers to participation that may be specifically tied to marketing and messaging relevant to the different types of usage groups.

Locations and group composition are described in the table below. Because the number of groups was limited to 3, the program team had identified segments that were "higher interest," "medium interest," and "lower interest" in terms of the team's desire for more information from the different segments.

Table 6. Post-Segmentation Focus Group Locations

Date	Location	Group Composition	Language
Feb 16, 2011	Riverside	Higher & Medium Interest	English
Feb 17, 2011	Los Angeles	Higher Interest	English
Feb 17, 2011	Los Angeles	Medium Interest	English

Customers were randomly selected and recruited from SCE's population of CARE customers residing within 15 miles of the location of the group. Customers were further identified based on: (1) energy usage (only customers in the top 3 quintiles were recruited), and (2) segment membership (as determined from the quantitative research). Segments were grouped as follows:

- "Higher interest" segments: 4 and 7
- "Medium interest" segments: 3, 5, 6, and 8
- "Lower interest" segments: 1, 2 (excluded from these focus groups)

During recruitment for the groups, customers were asked additional questions to ensure that each group included people who fit the prototypical characteristics of each segment, including: number of people in the household, age, frequency of bill payment contacts, owners and renters, and income.

The purpose of these groups is to focus on specific customer needs with respect to the LIEE program, and barriers to participation.

Specific information objectives include:

- Understand energy efficient and inefficient habits and behaviors
- Understand possible reasons and motivations for these habits and behaviors
- Identify barriers to adopting more energy efficient behaviors
- Understand customer awareness and perceptions of the LIEE program (known as Energy Management Assistance or “Emma”), and barriers to participation

III. SEGMENTATION ANALYSES AND RESULTS

A. Database Segmentation

The first phase of research was the database segmentation. The dataset of the low income CARE customer population that included utility-created, geographic, and census data served as the basis for this analysis.

Results: Eight Segments

For the SCE low income segmentation solution, an 8-cluster solution was chosen. The eight clusters, or segments, can be classified into two broad groups based primarily on their average energy usage and secondarily on other differentiating characteristics. The segments are shown below in Table 2, along with the relative size of each segment among the low income population.

Table 7: Low Income Customer Segments

Segment	Name (Lower Energy Usage)	Percent of LIEE (CARE) Population
1	Low Use, Low Touch	21%
2	Young Inland Conservers	17%
3	Older Coastal Conservers	16%
4	Struggling Modest Renters	14%
Segment	**Name (Higher Energy Usage)**	**Percent of LIEE (CARE) Population**
5	Larger, Older Households	14%
6	High Use Newer Homeowners	9%
7	High Usage, Most Problems	5%
8	Less Involved Younger Homeowners	5%

In the analysis, the variance of each variable in the data set is indicated by the "r-square." This value denotes the amount of influence a particular variable has had on creating the segments. As such, the higher the "r-square" value, the more that a particular variable has influenced the overall segment solution, and thereby is a stronger differentiating variable between the segments.

Results: Segment Differentiation

The following tables show the variables that were included in the clustering analysis, the variable's mean values or proportions for each cluster (or segment), and the "r-square" value for the variable. Color coding indicates that the value for the cluster or segment is noteworthy because it is substantially different from the total population, which represents the mean or norm.

Pink indicates values that are below the "average" while green indicates that a particular value is above the average. The sample size is approximately 200,000, so the number of customers represented in each cluster or segment range from 10,000 to 42,000. Because the sample sizes are so large, even very small and inconsequential differences

are significant, so we call attention only to some of the more meaningful variables in each of the segments.

Electricity usage is a dominant variable (high "r-square") in the cluster solution, with Segments 6 (High Use Newer Homeowners) and 7 (High Usage, Most Problems) being the highest users of electricity, and Segment 1 (Low Use, Low Touch) being the lowest users. Segments 2 (Young Inland Conservers), 3 (Older Coastal Conservers), and 4 (Struggling Modest Renters) are also lower users of electricity.

Table 8: Electricity Usage

8 Cluster Solution	Total	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	*R-Square*
Cluster Size	*100%*	*21%*	*17%*	*16%*	*14%*	*14%*	*9%*	*5%*	*5%*	
E.usage.q1.2007										*0.47*
Mean monthly electricity usage in kWh for Q1 2007	**466**	**197**	**368**	**373**	**422**	**637**	**928**	**705**	**552**	
E.usage.q2.2007										*0.55*
Mean monthly electricity usage in kWh for Q2 2007	**413**	**164**	**336**	**312**	**356**	**553**	**862**	**646**	**490**	
E.usage.q3.2007										*0.51*
Mean monthly electricity usage in kWh for Q3 2007	**624**	**209**	**596**	**417**	**507**	**830**	**1391**	**1027**	**749**	
E.usage.q4.2007										*0.54*
Mean monthly electricity usage in kWh for Q4 2007	**452**	**180**	**341**	**348**	**392**	**609**	**909**	**692**	**536**	
E.usage.q1.2008										*0.47*
Mean monthly electricity usage in kWh for Q1 2008	**474**	**190**	**339**	**373**	**420**	**646**	**921**	**711**	**553**	
E.usage.q2.2008										*0.55*
Mean monthly electricity usage in kWh for Q2 2008	**429**	**167**	**332**	**324**	**365**	**579**	**864**	**665**	**509**	
E.usage.q3.2008										*0.51*
Mean monthly electricity usage in kWh for Q3 2008	**632**	**208**	**586**	**417**	**510**	**838**	**1391**	**1041**	**749**	
E.usage.q4.2008										*0.54*
Mean monthly electricity usage in kWh for Q4 2008	**480**	**187**	**377**	**363**	**410**	**646**	**967**	**741**	**564**	
E.usage.q1.2009										*0.47*
Mean monthly electricity usage in kWh for Q1 2009	**463**	**188**	**346**	**368**	**407**	**633**	**897**	**693**	**532**	
E.usage.q2.2009										*0.53*
Mean monthly electricity usage in kWh for Q2 2009	**430**	**168**	**344**	**325**	**367**	**578**	**870**	**667**	**503**	
E.usage.q3.2009										*0.50*
Mean monthly electricity usage in kWh for Q3 2009	**623**	**214**	**585**	**421**	**512**	**823**	**1349**	**1015**	**753**	
E.usage.q4.2009										*0.51*
Mean monthly electricity usage in kWh for Q4 2009	**475**	**197**	**402**	**368**	**419**	**640**	**945**	**725**	**567**	

Payment history is also very influential in discriminating between the segments. Segment 8 indexes extremely high on "sum of all payment events," which is an indicator of frequency of using different payment methods. Disconnects and overdue fees are most common among Segments 4 (Struggling Modest Renters) and 7 (High Usage, Most Problems), resulting in lower SCE credit scores for these two segments ("credit score" is an SCE-created variable). Note that these variables help define these two segments.

Table 9: Payment History Indicators

8 Cluster Solution	Total	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	*R-Square*
Cluster Size	*100%*	*21%*	*17%*	*16%*	*14%*	*14%*	*9%*	*5%*	*5%*	
PAYMNT										*0.72*
Sum of all payment method events	**0.96**	**0.07**	**0.07**	**0.08**	**0.15**	**0.07**	**0.32**	**1.35**	**17.23**	
COLL1										*0.00*
Sum of all overdue notices	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	
COLL3										*0.15*
Sum of all overdue fee events	**0.31**	**0.06**	**0.07**	**0.07**	**0.80**	**0.07**	**0.31**	**1.96**	**0.36**	
DISCON.NUM										*0.14*
Number of times disconnected	**0.22**	**0.06**	**0.09**	**0.02**	**0.65**	**0.03**	**0.29**	**1.18**	**0.15**	
CREDIT_SCORE										*0.34*
Mean credit score	**786**	**831**	**755**	**862**	**672**	**857**	**738**	**602**	**775**	

Variables that include participation in some of SCE's non-energy efficiency programs indicate that Segment 7 (High Usage, Most Problems) includes more frequent participants in these programs. Segment 7 also indexes extremely high on the frequency of contact with SCE, as does Segment 4 (Struggling Modest Renters).

Table 10: Non-EE SCE Program Participation

8 Cluster Solution	Total	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	R-Square
Cluster Size	*100%*	*21%*	*17%*	*16%*	*14%*	*14%*	*9%*	*5%*	*5%*	
CONTACTS										*0.71*
Total number of contacts with SCE	14.75	5.25	7.45	3.76	28.70	4.98	20.94	87.26	10.62	
CAREF										*0.07*
Sum of all CARE/FERA events	1.64	1.36	0.95	1.84	1.88	1.92	1.72	2.36	2.00	
Energy assistance fund										*0.01*
No EAF	99.1%	99.6%	99.6%	99.6%	98.1%	99.5%	99.1%	96.2%	99.3%	
Energy Assistance Fund	0.9%	0.4%	0.4%	0.4%	1.9%	0.5%	0.9%	3.8%	0.7%	
Level Pay Plan										*0.02*
No LPP	96.6%	98.8%	99.0%	96.6%	97.4%	94.4%	93.5%	91.9%	93.9%	
Level Pay Plan	3.4%	1.2%	1.0%	3.4%	2.6%	5.6%	6.5%	8.1%	6.1%	
Medical baseline indicator										*0.01*
Not on Medical Baseline	97.4%	99.2%	98.8%	98.2%	98.1%	95.5%	93.3%	95.4%	97.6%	
On Medical Baseline	2.6%	0.8%	1.2%	1.8%	1.9%	4.5%	6.8%	4.6%	2.4%	
Enrolled in MyAccount										*0.08*
Not enrolled	85.0%	90.2%	92.8%	86.2%	85.7%	86.1%	83.5%	69.9%	44.6%	
Enrolled in MyAccount	15.0%	9.8%	7.2%	13.8%	14.3%	13.9%	16.5%	30.1%	55.4%	

Segments are also differentiated by climate zone. In part this is a function of their energy use, but not entirely. Some high users do reside in more temperate climate zones, just as some of the lower usage customers reside in non-temperate climate areas. Overall, though, Segments 1 (Low Use, Low Touch) and 3 (Older Coastal Conservers) are more coastal, while Segments 2 (Young Inland Conservers), 6 (High Use Newer Homeowners), and 7 (High Usage, Most Problems) are more likely residing in inland areas.

Table 11: Climate Zone and Housing Stock

8 Cluster Solution	Total	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	R-Square
Cluster Size	*100%*	*21%*	*17%*	*16%*	*14%*	*14%*	*9%*	*5%*	*5%*	
Climate zones for Southern California										*0.05*
Extreme Costal (Santa Barabara, Newport Beach)	11.7%	20.2%	5.1%	15.6%	11.5%	10.0%	3.8%	6.2%	12.1%	
Inland Costal (Downey, Anaheim)	26.7%	42.1%	7.1%	36.6%	33.3%	22.7%	8.5%	20.1%	26.2%	
Inland Costal Vallies (Thousand Oaks, L.A., Pasadena)	19.1%	22.2%	10.0%	26.7%	17.4%	24.7%	12.3%	14.4%	21.1%	
Inland Vallies (San Bernardino, Riverside)	23.3%	10.8%	40.1%	13.7%	22.6%	23.2%	34.5%	30.7%	23.6%	
Southern Central Valley (Visalia, Bakersfield)	5.6%	1.8%	9.7%	3.1%	5.2%	6.4%	9.4%	8.1%	4.1%	
High Desert (Palm Desert, Barstow)	10.0%	2.2%	21.5%	3.4%	8.0%	8.9%	20.3%	16.3%	10.0%	
Low Desert (Palm Springs, Blythe)	2.7%	0.4%	5.1%	0.4%	1.2%	2.9%	9.6%	3.4%	2.0%	
High Mountains (Bishop, Big Bear)	1.0%	0.5%	1.6%	0.7%	0.8%	1.2%	1.6%	0.8%	1.1%	
Housing type										*0.09*
Single family	41.9%	29.2%	28.0%	*52.8%*	41.8%	59.1%	49.3%	44.9%	43.2%	
Tract	17.9%	4.0%	29.5%	*10.4%*	8.4%	24.4%	37.4%	26.5%	25.7%	
Multiple	37.5%	65.4%	38.7%	*34.2%*	47.7%	12.7%	9.2%	26.0%	28.8%	
Mobile	2.4%	1.1%	3.2%	*2.6%*	1.7%	3.6%	3.6%	2.2%	2.1%	
All others	0.3%	0.2%	0.6%	*0.1%*	0.3%	0.2%	0.5%	0.3%	0.3%	
PREMISE_DATE										*0.12*
Year in which service was established at premise	1975	1971	1984	1970	1973	1973	1981	1978	1977	
SA_YEAR										*0.19*
Year SA started	2003	2004	2007	2001	2004	2000	2003	2003	2004	

SCE"s "disabled" flag data shows that Segments 5 (Larger, Older Households), 6 (High Use Newer Homeowners), and 7 (High Usage, Most Problems) are more likely to include someone with a disability. Census data indicates that Segment 6 (High Use Newer Homeowners) are in larger, newer homes. Segment 2 (Young Inland Conservers) is also in newer homes. Segments 1 (Low Use, Low Touch) and 3 (Older

Coastal Conservers) are in the oldest homes. Segments 1 (Low Use, Low Touch) and 4 (Struggling Modest Renters) are more likely renters.

Table 12: SCE Flags and Census Data

8 Cluster Solution	Total	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	R-Square
Cluster Size	*100%*	*21%*	*17%*	*16%*	*14%*	*14%*	*9%*	*5%*	*5%*	
Disabled resident flag										0.00
Not disabled	98.5%	99.2%	99.4%	98.8%	98.8%	97.5%	96.9%	97.5%	98.5%	
Disabled	1.5%	0.8%	0.6%	1.2%	1.2%	2.5%	3.1%	2.6%	1.5%	
Senior citizen flag										0.00
Not a senior citizen	98.6%	98.3%	99.4%	98.4%	98.9%	98.1%	98.3%	98.4%	99.4%	
Senior Citizen	1.4%	1.7%	0.6%	1.6%	1.1%	1.9%	1.7%	1.6%	0.6%	
roomsavg										0.23
Mean rooms per dwelling	4.5	3.7	4.9	4.3	4.1	4.9	5.3	4.9	4.8	
bltmed										0.15
Mean year houses built (2000 Census)	1970	1965	1977	1965	1967	1969	1976	1972	1971	
phhs175										0.08
Mean proportion of households under 175% of poverty	37.2%	43.9%	34.8%	37.4%	43.3%	31.7%	29.5%	35.0%	30.9%	
hhsizmd09										0.01
Mean household size (# of people)	3.16	3.18	2.98	3.25	3.26	3.21	3.09	3.18	3.03	
rpopden										0.19
Mean densitiy (people per squar mile)	10,595	16,403	5,234	12,725	12,913	8,476	4,942	8,148	9,337	
prent										0.20
Mean percent renter	48.7%	65.2%	41.7%	50.7%	57.4%	36.8%	30.3%	41.4%	42.9%	
RuralCode#										0.08
Rural	15.7%	4.3%	31.3%	6.9%	11.0%	15.8%	33.2%	21.5%	14.7%	
Suburban	6.6%	2.8%	12.2%	4.6%	3.9%	7.6%	10.9%	7.2%	7.5%	
Urban	76.6%	92.3%	55.3%	87.5%	84.0%	75.2%	54.4%	70.2%	76.4%	
Not for general delivery	1.1%	0.6%	1.3%	1.1%	1.1%	1.4%	1.6%	1.2%	1.4%	

Customers in Segments 3 (Older Coastal Conservers), 5 (Larger, Older Households), 7 (High Usage, Most Problems), and 8 (Less Involved Younger Homeowners) are more stable (less likely to have moved recently. Nearly all those in Segment 2 (Young Inland Conservers) have moved recently.

Table 13: Indicator of Recent SCE Move-In or Move-Out

8 Cluster Solution	Total	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	R-Square
Cluster Size	*100%*	*21%*	*17%*	*16%*	*14%*	*14%*	*9%*	*5%*	*5%*	
move status										0.11
No move	41.7%	32.9%	6.8%	64.1%	35.1%	68.4%	39.9%	53.8%	62.2%	
Moved in	25.6%	28.0%	41.3%	11.7%	31.5%	8.8%	25.7%	24.0%	37.8%	
Moved out	32.7%	39.2%	51.9%	24.3%	33.4%	22.8%	34.4%	22.3%	0.0%	

The lower usage Segments 1 (Low Use, Low Touch), 2 (Young Inland Conservers), 3 (Older Coastal Conservers), and 4 (Struggling Modest Renters) have higher proportions of Spanish language preference customers. Conversely, the four higher usage segments have fewer Spanish speakers.

Table 14: Language Preference Indicators

8 Cluster Solution	Total	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	R-Square
Cluster Size	*100%*	*21%*	*17%*	*16%*	*14%*	*14%*	*9%*	*5%*	*5%*	
Language variable created from different sources										0.03
English	55.1%	47.1%	47.5%	54.8%	53.3%	61.9%	65.6%	68.7%	69.4%	
Spanish	29.6%	39.7%	28.7%	30.7%	36.4%	23.8%	18.7%	18.8%	13.2%	
Asian languages	3.9%	5.4%	2.0%	7.5%	0.9%	6.4%	1.5%	0.3%	4.1%	
Missing/unknown	11.4%	7.8%	21.8%	7.0%	9.4%	7.9%	14.2%	12.2%	13.3%	

Past participation in the LIEE program is more likely among members of Segments 4 (Struggling Modest Renters) and 7 (High Usage, Most Problems), while Segment 2 (Young Inland Conservers) are the least likely.

Table 15: LIEE and Other SCE Energy Efficiency Program Participation

8 Cluster Solution	Total	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	*R-Square*
Cluster Size	*100%*	*21%*	*17%*	*16%*	*14%*	*14%*	*9%*	*5%*	*5%*	
LIEE Participation										*0.01*
Non-participant	**93.4%**	**94.6%**	**96.3%**	**92.1%**	**90.6%**	**92.6%**	**94.5%**	**90.0%**	**92.8%**	
LIEE participant	**6.6%**	**5.5%**	**3.7%**	**7.9%**	**9.4%**	**7.5%**	**5.5%**	**10.0%**	**7.2%**	
nrec.applnc.recycle										*0.01*
Number of times participated in appliance recycling	**0.04**	**0.02**	**0.01**	**0.05**	**0.04**	**0.07**	**0.05**	**0.06**	**0.05**	
nrec.applnc.rebate										*0.01*
Number of times participated in appliance rebate	**0.01**	**0.01**	**0.00**	**0.02**	**0.01**	**0.03**	**0.02**	**0.01**	**0.03**	
nrec.mobile.home										*0.00*
Number of times participated in mobile home EE	**0.01**	**0.00**	**0.00**	**0.02**	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	
nrec.hees										*0.01*
Number of years participated in Energy Survey	**0.02**	**0.01**	**0.00**	**0.02**	**0.01**	**0.03**	**0.03**	**0.02**	**0.04**	

In sum, the eight segments created by clustering on utility-created, geographic, and census data are distinct from each other in potentially meaningful ways with regard to the LIEE program – a critical result for the research project. Specifically, half of the segments (5 through 8) are defined, in part, by high usage, so these groups represent greater opportunity for program measures to achieve more substantial savings. Two segments (4 and 7), including one with higher usage, represent customers with greater energy burden as evidenced by higher frequencies of bill payment problems. Interestingly, Segment 7 (High Usage, Most Problems) also has higher participation in SCE's LIEE program and above average participation in Appliance Recycling (ARP), suggesting that SCE may be reaching these customers, yet the majority in this segment have not participated in the program and are likely to be good candidates for it. Segments are also differentiated on location (e.g., climate zone), housing stock, and the probability of a household member with a disability – all variables that are relevant to targeting for the LIEE program.

B. Initial Focus Groups

Another initial data collection effort involved 6 focus groups, with an average of 8 customers in each group. These groups occurred concurrent with the database segmentation analysis effort. The groups were conducted with CARE-enrolled customers representing the low income residential population.

The information from these focus groups was used to further our understanding of this customer population, provide further insight that can help explain the differences between the segments created from dataset clustering, and develop the quantitative research instrument for the telephone survey.

Focus Group Results

Although electricity is not top of mind for most people, it's clear that electricity permeates the homes of low income consumers, just as it does the homes of people across all socioeconomic strata. These consumers have little difficulty identifying the things that use electricity in their homes, and recognizing the multitude of benefits they receive from it.

Most low income household electricity usage goes beyond basic subsistence needs as well, since nearly all have all the conveniences that exist in society – cell phones, multiple TVs, computers, video games (among households with children), and large and small appliances.

When asked if they think they use more or less energy than their neighbors, customers in the groups were divided, even among the high usage groups conducted in the LA South Bay area. Reasons included:

(1) Their lives are filled with more energy using equipment now than previously.

(2) The number of people in the household. More people means higher usage.

(3) The amount of time they spend in their homes. More time at home leads to higher usage.

(4) The presence of children in the home. Customers with kids mentioned that their kids turn on and leave on all the lights, run multiple appliances at the same time (TV, computer, music), etc.

(5) Some homes are difficult to keep at a comfortable temperature. They have insufficient insulation, leaks around windows and doors, and other issues that lead to high heating (coastal areas) and cooling (inland) bills.

(6) The health of someone in the household. This includes an elderly relative or a spouse or child with a chronic condition that requires more consistent winter

heating or summer cooling, and in some cases the use of in-home medical equipment.

Despite their circumstances, just about everyone is interested in reducing their energy use, yet many of these low income customers find it difficult to give up or reduce the benefits that electricity provides, or to control their household's energy use. Specific barriers include:

(1) Lack of financial resources to make improvements that require money up front.

(2) Lack of control over their bill, over others in the household, or if renters over their physical environment.

(3) Lack of more detailed knowledge (e.g., how much energy is used by each specific appliance) that would allow them to prioritize their additional efforts.

(4) Lack of time and energy to take even more rigorous and consistent actions such as unplugging appliances and electronics.

(5) Not wanting to give up too many of the benefits of electricity – as one customer put it, no one really wants to sit in the dark with candles, but others simply don't want to wait for their computer to boot up so they leave it running.

Renters are even less willing or able than owners to make changes to their home because of additional issues. Additional issues facing renters are:

(1) Being fearful their landlord could raise their rent if they request or receive any improvements.

(2) A misperception that you need to be a homeowner to participate in a program like LIEE.

(3) A perceptual barrier against changing something that they don't own – to the extent that some are even hesitant to change a light bulb. This is also one of the benefits of being a renter – not having to think about or deal with maintenance, repairs, or even simple upkeep.

(4) Situations where the landlord paid the bill, so the renter had no incentive to save.

To a considerable degree, the LIEE program overcomes several of these barriers, so a conclusion is that the program is the right design – the challenges are more about marketing and implementation. Also, the issues that renters face suggest that targeting landlords for program such as LIEE might be appropriate.

Customer Perceptions of LIEE/EMA

About half the customers in the focus groups had heard of Energy Management Assistance (EMA), although few knew it by name. A few customers in the groups were familiar with all aspects of the program (refrigerator, AC, weatherization/caulking, lights, etc.) but most seem to just know about bits and pieces. There's quite a bit of confusion or misunderstanding about EMA details as well, even among the participants.

Nonetheless, nearly all said they would participate in a program such as EMA if the program were offered to them. However, some voiced skepticism about the program, and their hesitations about signing up. These include:

- Concerns that it's too good to be true. A few skeptics thought that the "free" offer that includes a home inspection might lead to additional repairs being identified that they would have to pay for.

- Believing they would not qualify. Even though all the respondents in the focus groups are CARE customers, many do not think they are low income so presume they would not qualify. A few were willing to take a chance by looking into the program anyway, but for many this presumption about not being qualified likely keeps them from taking the next step or even from responding affirmatively to proactive outreach.

- Skeptical about the quality of the appliances or work to be performed. Some customers presumed that getting something for free implies the item would be low quality – an off brand or too noisy.

- Improvements will not help much, or aren't worth the effort. Some felt that their home does not really need these types of improvements, such as caulking and weatherproofing, or that the improvements probably are not worth the effort of filling out an application, proving one's income, etc.

- Reluctance to take from others who need it more. Some customers expressed reluctance about the program out of concern that others probably need it more.

- Embarrassment of admitting to being low income. A few customers admitted that it's embarrassing to receive low income assistance.

Though customers brought up many barriers, most are still anxious to participate if they think the program might help them reduce their energy use. Some of these barriers may indicate why, though the program may initially seem appealing, the percentage of customers who actually agree to participate when presented with the details of program participation is lower that might be expected. During the discussion, however, it was also clear that further explanation about the program and discussion about program details did often assist in overcoming these barriers, at least among those who have participated in EMA in the past.

C. Telephone Survey

The quantitative telephone survey followed the database segmentation and preliminary focus group research. As noted earlier, 1,536 telephone survey interviews were conducted to augment the initial segmentation solutions with additional descriptive information about these different groups of customers.

Results: Segment Descriptions

The survey results were tabulated with the segments serving as the basis for grouping respondents together, and the responses to each question were compared across all of the segments. Based on these comparisons and the results from the dataset analysis, brief descriptions of each segment follow, including tables that describe the variables that differentiate the segment from other segments. The full results are in Appendix A.

Note that in the following descriptions the term "average" refers to the mean of the population, and "above" or "below" average indicates that the segment is significantly and substantially different from the population regarding the characteristic.

Segment 1: Low Use, Low Touch (21% of the population)

These coastal, urban apartment dwellers are in some of the oldest and smallest dwellings. Though their homes are among the least energy efficient, they tend to be among the best energy conservers – they are motivated to use less energy both to save money and for the environment, and they believe they know what to do. It probably helps that they also have fewer energy consuming appliances and electronics, and most do not to have central air conditioning. As a group, they have the lowest income, fewer household members, and they tend to be Hispanic and Spanish-speakers. This segment is also very low touch – they are below average in SCE program participation and in frequency of contacting SCE, and have very few bill problems.

In the tables that follow, segment characteristics that are significantly different from the low income population as a whole are shown. For variable categories where no description is shown, the segment is no different from the population.

Table 16: Segment 1 Differentiating Variables and Descriptors

Segment Determinants *(SCE and Census Data)*	
Energy Usage:	Very low
Payment Problems:	Few
Dwelling Characteristics:	Older, smaller
Housing Type:	Multi-family
Geographic:	Urban, renters
Climate Zones:	Coastal
SCE Program Participation:	Very low

Home Characteristics	
Housing Type:	Apt, duplex
Characteristics:	Very small, older
Own or rent:	Renters
Energy Efficient Features:	Fewer
Improvements Made:	--
All Electric:	--
AC Type and Age:	None

Demographics

Age:	--
Household Size:	Smaller
Education / Income:	Lower
Ethnicity:	Hispanic
Language:	Spanish
Disabled:	--

Appliances and Electronics

Appliances:	Fewer
Refrigerator Age:	--
Electronics:	Fewer
Pool or Spa:	--

Energy-Related Attitudes

Always try to save:	--
Have been successful:	Yes
Importances:	Environment
Obstacles:	Don't know
	--
Attitudes:	Environment
	Done all I can

Connection with Utility Programs

Satisfaction with SCE:	High
Opinion About EE Programs:	Positive
Ever Partic. in EE Program:	--
Programs: Yes	--
Programs: No	Summer Discount

Energy-Related Behaviors

Always do this:	Turn off TV
	--
Don't always do this:	--
	--
HVAC on Hot Summer Days:	--
HVAC on Cold Winter Days:	--

LIEE Awareness and Participation

Past LIEE participation:	--
Home (past participants):	--
Sources of LIEE info:	Landlord
Awareness of LIEE (non-part.):	Lower
Barriers (non-participants):	Don't think need it
Info source preferences:	Not Internet

Segment 2: Young Inland Conservers (17% of the population)

This segment is defined by younger families in small, newer homes in inland areas, who not surprisingly are more likely to have newer, central AC and newer refrigerators. They include an above average proportion of renters. Since they are inland, these customers mentioned heating and cooling as a main barrier to saving energy – which might explain their above average participation in the Summer Discount Plan (SDP). They also mentioned that having too many energy-consuming appliances and electronics is also a barrier – although as a group they are quite average regarding the number of appliances and large electronic items (such as TV's) that they actually have. Despite their perceptions about their energy consumption, they are low energy users with very few bill payment problems.

Table 17: Segment 2 Differentiating Variables and Descriptors

Segment Determinants *(SCE and Census Data)*

Energy Usage:	Low
Payment Problems:	Few
Dwelling Characteristics:	Newer
Housing Type:	Single fam, tract
Geographic:	Rural/suburban
Climate Zones:	Inland
SCE Program Participation:	Very low

Home Characteristics

Housing Type:	--
Characteristics:	Newer
Own or rent:	Renters
Energy Efficient Features:	--
Improvements Made:	Yes
All Electric:	--
AC Type and Age:	Central AC, newer

Demographics

Age:	18-44
Household Size:	Larger
Education / Income:	--
Ethnicity:	--
Language:	--
Disabled:	No

Appliances and Electronics

Appliances:	--
Refrigerator Age:	Newer
Electronics:	Game consoles
Pool or Spa:	--

Energy-Related Attitudes

Always try to save:	--
Have been successful:	--
Importances:	Comfort
Obstacles:	Heating/Cooling
	--
Attitudes:	--

Connection with Utility Programs

Satisfaction with SCE:	--
Opinion About EE Programs:	--
Ever Partic. in EE Program:	--
Programs: Yes	Summer Discount
Programs: No	Appl. Recycling

Energy-Related Behaviors

Always do this:	--
	--
Don't always do this:	--
	--
HVAC on Hot Summer Days:	Warmer
HVAC on Cold Winter Days:	--

LIEE Awareness and Participation

Past LIEE participation:	Lower
Home (past participants):	Previous home
Sources of LIEE info:	--
Awareness of LIEE (non-part.):	Lower
Barriers (non-participants):	--
Info source preferences:	Email

Segment 3: Older Coastal Conservers (16% of the population)

These customers are similar to Segment 1, with the exception that they tend to be older homeowners rather than younger renters. Located in coastal areas, their homes are older and among the least energy efficient, yet they keep their energy usage below the average. It probably helps that most don't have central AC, but they also don't perceive that they have obstacles to conserving (even with their older homes they are less likely than any other segment to believe that the condition of their home is an obstacle).

Those who do have AC tend to set it warmer in the summer time than other segments as well.

They are the segment with the fewest bill payment problems, the lowest percentage of past EE program participation, and the highest proportion (along with segment 1) who believe they've been successful in conserving energy. Likewise, this segment has relatively few household members. Despite being older, they tend to have a lower incidence of health problems, too.

Table 18: Segment 3 Differentiating Variables and Descriptors

Segment Determinants *(SCE and Census Data)*

Energy Usage:	Low
Payment Problems:	Very few
Dwelling Characteristics:	Older
Housing Type:	Single-family
Geographic:	Urban
Climate Zones:	Inland coastal
SCE Program Participation:	--

Home Characteristics

Housing Type:	NOT Apt
Characteristics:	Older
Own or rent:	Owners
Energy Efficient Features:	Fewer
Improvements Made:	No
All Electric:	--
AC Type and Age:	None

Demographics

Age:	65+ years
Household Size:	Smaller
Education / Income:	Lower
Ethnicity:	--
Language:	--
Disabled:	--

Appliances and Electronics

Appliances:	--
Refrigerator Age:	Older
Electronics:	Fewer
Pool or Spa:	No

Energy-Related Attitudes

Always try to save:	--
Have been successful:	Yes
Importances:	--
Obstacles:	Don't know
	--
Attitudes:	Not bill worries
	Not health issues

Connection with Utility Programs

Satisfaction with SCE:	High
Opinion About EE Programs:	--
Ever Partic. in EE Program:	No
Programs: Yes	--
Programs: No	EE Rebates

Energy-Related Behaviors

Always do this:	Turn off lights
	--
Don't always do this:	--
	--
HVAC on Hot Summer Days:	--
HVAC on Cold Winter Days:	Cooler

LIEE Awareness and Participation

Past LIEE participation:	--
Home (past participants):	Current home
Sources of LIEE info:	Direct mail
Awareness of LIEE (non-part.):	--
Barriers (non-participants):	--
Info source preferences:	Not Internet

Segment 4: Struggling Modest Renters (14% of the population)

This segment includes renters in smaller homes (high proportion of apartments) with fewer energy efficient features and fewer actions taken to improve this (likely because they are renters). It includes the highest proportion of all electric homes and a high proportion of window AC's, but relatively few appliances or other electronics. Though energy usage is moderate overall, this segment has the second highest rate of bill payment problems.

Demographically, this segment is very average among low income customers, but with a higher proportion of those with Hispanic and African-American backgrounds, Spanish speakers, and those who identified that someone in the household is disabled. Barriers to reducing energy usage are also quite average nor is there a geographic concentration.

Table 19: Segment 4 Differentiating Variables and Descriptors

Segment Determinants *(SCE and Census Data)*

Energy Usage:	Moderate
Payment Problems:	Frequent
Dwelling Characteristics:	--
Housing Type:	Multi-family
Geographic:	Renters
Climate Zones:	--
SCE Program Participation:	--

Home Characteristics

Housing Type:	Apartment
Characteristics:	Small
Own or rent:	Renters
Energy Efficient Features:	Fewer
Improvements Made:	--
All Electric:	Yes
AC Type and Age:	Window

Demographics

Age:	--
Household Size:	--
Education / Income:	--
Ethnicity:	Hispanic, Af-Am
Language:	Spanish
Disabled:	Yes

Appliances and Electronics

Appliances:	Fewer
Refrigerator Age:	--
Electronics:	TVs, Cable/DVR
Pool or Spa:	--

Energy-Related Attitudes

Always try to save:	--
Have been successful:	--
Importances:	Saving money
Obstacles:	--
	--
Attitudes:	Bill worries
	Could use less

Connection with Utility Programs

Satisfaction with SCE:	--
Opinion About EE Programs:	--
Ever Partic. in EE Program:	--
Programs: Yes	--
Programs: No	Summer Discount

Energy-Related Behaviors	
Always do this:	--
	--
Don't always do this:	--
	--
HVAC on Hot Summer Days:	Cooler
HVAC on Cold Winter Days:	--

LIEE Awareness and Participation	
Past LIEE participation:	Higher
Home (past participants):	--
Sources of LIEE info:	--
Awareness of LIEE (non-part.):	--
Barriers (non-participants):	Don't think need it
Info source preferences:	Phone

Segment 5: Larger, Older Households (14% of the population)

This segment has high energy usage, in part because they are in larger, older homes that do tend to have more EE features than average, but not recent improvements. They are likely to be homeowners (not renters) and their time (years) in residence is much higher than the average, too. Very few have had bill payment problems. They have newer, central AC as well.

Consistent with being homeowners and with their longevity, these customers tend to be older. A higher-than-average proportion are on medical baseline and the Level Payment Plan (LPP), too. However, their household sizes tend to be larger – perhaps with older children or multiple generations in the home, or even boarding house situations. They are geographically dispersed.

Customers in this segment are more motivated by saving money on their bill and less motivated by environmental concerns. Perhaps because of their larger household sizes, cooperation from others in the home is an obstacle to reducing energy use.

Table 20: Segment 5 Differentiating Variables and Descriptors

Segment Determinants *(SCE and Census Data)*	
Energy Usage:	High
Payment Problems:	Very few
Dwelling Characteristics:	--
Housing Type:	Single-family
Geographic:	Owners
Climate Zones:	--
SCE Program Participation:	Medical, LPP

Home Characteristics	
Housing Type:	Single-family
Characteristics:	Large, older
Own or rent:	Owners
Energy Efficient Features:	More
Improvements Made:	No
All Electric:	--
AC Type and Age:	Central AC, newer

Demographics	
Age:	65+ years
Household Size:	--
Education / Income:	--
Ethnicity:	--
Language:	--
Disabled:	--

Appliances and Electronics	
Appliances:	Many
Refrigerator Age:	Older
Electronics:	TV's, Desk Cptrs
Pool or Spa:	--

Energy-Related Attitudes

Always try to save:	--
Have been successful:	--
Importances:	Saving money
Obstacles:	Cooperation
	--
Attitudes:	--

Connection with Utility Programs

Satisfaction with SCE:	Lower
Opinion About EE Programs:	--
Ever Partic. in EE Program:	--
Programs: Yes	--
Programs: No	--

Energy-Related Behaviors

Always do this:	--
	--
Don't always do this:	--
	--
HVAC on Hot Summer Days:	--
HVAC on Cold Winter Days:	--

LIEE Awareness and Participation

Past LIEE participation:	--
Home (past participants):	--
Sources of LIEE info:	--
Awareness of LIEE (non-part.):	--
Barriers (non-participants):	--
Info source preferences:	--

Segment 6: High Use Newer Homeowners (9% of the population)

This segment has the highest energy usage – not too surprising since they are in larger homes with the largest average household size located in the inland valley and desert areas. Their homes are among the newest among the low income segments, with a higher proportion of EE features for the home. Demographically, these customers tend to be homeowners, middle aged (45-64), higher income, and with an above average proportion of someone who is disabled in the household, but they are average regarding payment problems (not struggling like two of the other segments, although higher than four other segments).

Also contributing to high energy use, this segment has a high proportion with AC (central, or evaporative or swamp coolers), the highest proportion of appliances and electronics, and they place above average importance on "comfort" (vs. saving money or the environment), likely related to living inland in the hotter summer climate zones.

They have above average participation in Home Energy Efficiency Surveys (HEES) and the Summer Discount Plan (SDP), so apparently they are aware of their high usage situation and want to do something about it. They also stated that they believe they could do more to reduce their usage too, but their large households mean cooperation from others is a major barrier.

Table 21: Segment 6 Differentiating Variables and Descriptors

Segment Determinants (SCE and Census Data)

Energy Usage:	Ultra high
Payment Problems:	--
Dwelling Characteristics:	Newer, larger
Housing Type:	Single-fam, tract
Geographic:	Rural, owners
Climate Zones:	Inland, desert
SCE Program Participation:	Medical, LPP

Home Characteristics

Housing Type:	Single-family
Characteristics:	Large, newer
Own or rent:	Owners
Energy Efficient Features:	More
Improvements Made:	--
All Electric:	--
AC Type and Age:	Central AC, Evap

Demographics

Age:	44-65 years
Household Size:	Larger
Education / Income:	Higher
Ethnicity:	--
Language:	English
Disabled:	Yes

Appliances and Electronics

Appliances:	Many
Refrigerator Age:	--
Electronics:	Many
Pool or Spa:	Yes

Energy-Related Attitudes

Always try to save:	--
Have been successful:	No
Importances:	Comfort
Obstacles:	Cooperation
	--
Attitudes:	Not environment
	Could do more

Connection with Utility Programs

Satisfaction with SCE:	Lower
Opinion About EE Programs:	Less positive
Ever Partic. in EE Program:	--
Programs: Yes	HEES, SDP
Programs: No	--

Energy-Related Behaviors

Always do this:	Run applncs. full
	--
Don't always do this:	Turn off TV
	Close ducts
HVAC on Hot Summer Days:	--
HVAC on Cold Winter Days:	--

LIEE Awareness and Participation

Past LIEE participation:	--
Home (past participants):	--
Sources of LIEE info:	Ads
Awareness of LIEE (non-part.):	Higher
Barriers (non-participants):	Not sure how to sign up
Info source preferences:	Internet

Segment 7: High Use, Most Problems (5% of the population)

This segment has the second highest electricity usage among the eight groups, but the highest incidence of bill payment problems. They are predominantly renters with larger household sizes in the inland climate zones – they are average regarding the age of their home, but are above average for past participation in LIEE and above average regarding their incidence of energy efficiency improvements having been made while living there. Also, they are more likely than average to be on medical baseline and LPP.

These households are average regarding the number of appliances they have in the home (they are renters and appliances tend to come with the home), but they are above average in ownership of electronics (TV's, computers, game consoles, etc.)

They do tend to have AC, with the highest incidence of swamp coolers of all the segments. They place above average importance on comfort (rather than saving money on their bill or the environment), and they face cooperation from others as a barrier (similar to other segments with larger household sizes). Regarding the energy behaviors, they do not always turn off lights or TVs when not in use. Consistent with their payment histories and medical baseline participation, they also have bill worries and health concerns.

Table 22: Segment 7 Differentiating Variables and Descriptors

Segment Determinants *(SCE and Census Data)*

Energy Usage:	Very high
Payment Problems:	Frequent
Dwelling Characteristics:	--
Housing Type:	Tract
Geographic:	--
Climate Zones:	Inland
SCE Program Participation:	LIEE, med, LPP

Home Characteristics

Housing Type:	--
Characteristics:	--
Own or rent:	Renters
Energy Efficient Features:	--
Improvements Made:	More
All Electric:	--
AC Type and Age:	Evaporative

Demographics

Age:	44-65 years
Household Size:	Larger
Education / Income:	--
Ethnicity:	African-American
Language:	English
Disabled:	Yes

Appliances and Electronics

Appliances:	--
Refrigerator Age:	--
Electronics:	Many
Pool or Spa:	--

Energy-Related Attitudes

Always try to save:	--
Have been successful:	No
Importances:	Comfort
Obstacles:	Cooperation
	--
Attitudes:	Bill worries
	Health issues

Connection with Utility Programs

Satisfaction with SCE:	Lower
Opinion About EE Programs:	--
Ever Partic. in EE Program:	Yes
Programs: Yes	--
Programs: No	--

Energy-Related Behaviors	
Always do this:	--
	--
Don't always do this:	Turn off lights
	Turn off TV
HVAC on Hot Summer Days:	--
HVAC on Cold Winter Days:	--

LIEE Awareness and Participation	
Past LIEE participation:	Higher
Home (past participants):	--
Sources of LIEE info:	--
Awareness of LIEE (non-part.):	--
Barriers (non-participants):	Not sure how to sign up
Info source preferences:	Direct mail, phone

Segment 8: Less Involved, Younger Homeowners (5% of the population)

The most affluent of the segments, these customers tend to be younger homeowners, with larger household sizes. They have more appliances and more electronics than the average LI customer as well. They are also more likely than average to have participated in energy efficiency rebates and the Home Energy Efficiency Survey (HEES) program. Heating and cooling is their main obstacle, and to this end they do tend to set their thermostats higher than the norm during the summer time. This segment has an average incidence of payment problems.

This segment is most distinctive because they are less engaged in energy than any others – they are less likely to take action to reduce their energy use, and they are less likely to think they have been successful in reducing their energy use.

Table 23: Segment 8 Differentiating Variables and Descriptors

Segment Determinants (SCE and Census Data)	
Energy Usage:	Moderate
Payment Problems:	--
Dwelling Characteristics:	--
Housing Type:	--
Geographic:	--
Climate Zones:	--
SCE Program Participation:	MyAcct, LPP

Home Characteristics	
Housing Type:	--
Characteristics:	--
Own or rent:	Owners
Energy Efficient Features:	--
Improvements Made:	--
All Electric:	--
AC Type and Age:	Central AC

Demographics	
Age:	18-44 years
Household Size:	Larger
Education / Income:	Higher
Ethnicity:	White
Language:	English
Disabled:	No

Appliances and Electronics	
Appliances:	Many
Refrigerator Age:	--
Electronics:	Many
Pool or Spa:	--

Energy-Related Attitudes

Always try to save:	No
Have been successful:	No
Importances:	--
Obstacles:	Heating/cooling
	--
Attitudes:	Less engaged

Connection with Utility Programs

Satisfaction with SCE:	--
Opinion About EE Programs:	Positive
Ever Partic. in EE Program:	Yes
Programs: Yes	Rebates, HEES
Programs: No	--

Energy-Related Behaviors

Always do this:	--
	--
Don't always do this:	Most EE actions
	--
HVAC on Hot Summer Days:	Warmer
HVAC on Cold Winter Days:	--

LIEE Awareness and Participation

Past LIEE participation:	--
Home (past participants):	--
Sources of LIEE info:	SCE website
Awareness of LIEE (non-part.):	Lower
Barriers (non-participants):	Someone else needs it more
Info source preferences:	Email, Internet

D. Final Focus Groups

Following the segmentation analyses, three customer focus groups were completed among CARE customers who were classified into "medium interest" and "higher interest" segments. Because the research plan was limited to three focus groups at this phase, the research team identified segments that were of "higher interest," "medium interest," and "lower interest" in terms of the team's desire for additional qualitative input, and then included the "higher" and "medium" interest segments in the focus groups. The "higher" and "medium" interest segments for these groups were Segments 3, 4, 5, 6, 7, and 8.

Focus Group Results

The second set of focus groups yielded the following overall findings, applicable to higher energy usage low income customers since the groups excluded those with below average usage.

Household Energy Practices and Barriers

Most customers in the focus groups are relatively knowledgeable about their household's energy usage. However, while described themselves as active energy conservers, relatively few (about 3 out of ten) seem to be doing "all they can" such as unplugging things when they are not using them, diligently turning off lights when they are not in the room, and ensuring that others in the household are doing the same.

- The perception that they would "do without" the benefits of their electricity use is a barrier for many.
- Renters admitted they are hesitant to contact their landlords about energy-related issues. They don't want to give their landlord a reason to increase their rent.
- Some mentioned a lack of time (being busy, it's not a priority).
- For bigger households, it's difficult to control others in the home.

Reducing the electric bill is the main motivation for everyone. A few also agree that they want to use less energy for environmental reasons, to avoid rolling blackouts, and because it's the right thing to do, but these are secondary.

Outside Assistance

Before discussing the LIEE program, focus group participants were asked what type of help they would want if they felt their bill was too high. The types of help that customers brought up included:

- Financial. Participants mentioned CARE and HEEP. Interestingly, all of the focus group participants were recruited from SCE's CARE customers, yet not all seemed to know (or admit) that they were on the program.

- Material. Some of those with old refrigerators mentioned that getting a new one would be a big help, while others mentioned that insulation, a new air conditioner, and new windows would help.

- Educational. Though not mentioned unprompted, participants also agreed that they would like more information or energy education-related assistance.

    - They like reminders and helpful hints about things you can do to save more energy.
    - Some also want information that tells them how much energy different things use.

Although most customers in the focus groups were aware of at least one SCE program, their knowledge about programs is not very complete and it is sometimes incorrect. Problems include: not knowing the names of the programs, getting programs confused with one another, not understanding the details of a program correctly, and not being aware of programs that exist.

- Also, quite a few customers in the groups are aware that programs can run out of funds. Because of this belief, they tend not to follow up if they don't hear back from SCE about a program or about an application.

Perceptions About The LIEE Program

Most customers in the groups have heard of the LIEE program, and they know about the basics of the program, although they are not familiar with the name.

Several customers had stories about trying to participate, but not being successful. From these stories, it seems that even those who get involved with the program don't necessarily learn too much about it, nor do they take a very proactive role in the process to see it through.

- The onus to be proactive is on SCE and program contractors.

Once customers find out about the LIEE program, there are several factors that can serve as barriers to their taking the next step to sign up. Main barriers include:

- Income qualification. Most low income customers don't have a problem providing their income, but some presume that they won't qualify even before they apply, so they don't bother.

- Landlord approval. Most renters don't want much contact with their landlord, so landlord approval and sign-off can be off-putting.

- Perceptions about funds availability. A few customers in the groups said they believe that SCE's programs are for limited periods of time (based on funds availability). As a result, this belief can discourage people from even applying, and from not following up once they do apply.

- Scheduling an appointment. In many low income households, the head of household works outside the home. Scheduling an appointment time for an in-home qualification visit can be perceived to be a hassle.

In sum, these barriers represent perceived "hassles" of initiating and going through the process. The flip side to these barriers would be a stress-free, reliable process.

Methods of Promoting the LIEE Program

During the focus groups, several different methods of promotion were discussed. The most favored methods with very few negatives include:

- Separate letter. Nearly everyone liked this method. They also suggested that it not look like marketing material, but instead something more official, like a social security check.

- Automated phone call. Although not many like telemarketing calls, most customers were receptive to this idea, especially because it would allow them to sign up immediately during the call (after answering a few qualification questions).

- Radio advertising. Customers who spend a lot of time in their cars think that radio advertising is a great way to reach them.

- Community events. Most customers in the focus groups said they attend community events on occasion, where they can find out about useful local services.

Other methods that could be effective but received some negative responses include:

- Email messages. A minority of customers in the groups said they like to receive information via email, but most said no. Those who would agree to email suggested that they only get sent something every 3 to 6 months.

- Door-to-door. Some customers don't open their doors to people they don't know for security reasons, while others said they are not home very often so would probably miss out.

- Flyer left at their door. Some customers liked this idea, but others said they don't read flyers.

- Inserts in coupon packs (e.g., Val-Pack). Most said they don't read these, and didn't think SCE's LIEE program was a good fit.

The LIEE Educational Component

While most low income customers said they would be receptive to educational information as part of the program, they hope they will learn something new that can help them reduce their energy bill, and they don't want a lot of reading. Customers were interested in: (1) a checklist for energy conservation (personal behaviors and physical improvements that can help them save energy), and (2) information about the amount of energy that is used by specific appliances.

Other ideas in which customers expressed interest include:

- Provide an incentive to learn – like a gift card or free CFLs.

- Provide educational information, such as a DVD, for both adults as well as perhaps something for children.

- Check back periodically, after the LIEE upgrades have been completed.

Program Messaging

At the end of the focus groups, participants were given a list of message elements that could be included in marketing materials. Message statements to which customers responded most favorably without reservation included those that are very functional and descriptive of the program:

- The program provides energy-saving appliances and services including refrigerators, home weatherization, and energy efficient light bulbs.

- SCE will pay all costs of purchasing and installing the appliances for the program.

- Helps your household use energy more efficiently.

Other message elements that could be included to assist customers with signing up include:

- It's easy to participate – just call Southern California Edison or go to SCE.com and complete an online application.

- Both homeowners and renters can participate.

- Customers qualify based on their household income.

Message elements that received mixed response (some liked them, others didn't) and therefore should probably be avoided because they have negative connotations or are not very relevant include:

- The program is FREE to participants. Free had the connotation that there might be some "catch" or that you might need to buy something else.

- Helps your household use less energy. Customers don't want to do without, which this statement implies.

- The program helps ensure resources for future generations. Most felt this is not relevant to them.

- The program helps you reduce your impact on the environment. This statement is okay, but not very motivating.

Customers rejected the message elements that represent potential reasons for rejection from the program. These requirements should be explained after the customer signs up for the program:

- You will need to provide proof of income.

- Renters will need to submit a form signed by their landlord.

During the group discussions, it was also apparent that many low income customers are financially insecure. Though this states the obvious, it is important to recognize that a very top-of-mind, salient issue is not having enough money to do the things they want to do. Messaging needs a social or emotional leverage point.

- A potential leverage point for the program is to help customers use energy more efficiently, to allow them to do more of the things they want to do.

IV. ADDITIONAL RELEVANT FINDINGS ON THE SCE LIEE/EMA PROGRAM

In addition to providing information about each of the eight segments, the study provides insights with regard to SCE's Energy Management Assistance program. Additional findings garnered from both the telephone survey (shown in the data tables below) and focus group sessions are presented in the following section.

LIEE Program Awareness and Knowledge

From the quantitative survey, almost half (49%) of low income customers said they are aware of the LIEE program (Table 24). Of these customers, one in three (16% of the total) said they had participated before, while the remaining two-thirds (33% of the total) are aware but have not participated. Program awareness is similar across the segments.

Table 24: Awareness of LIEE Program (aka Energy Management Assistance)

Response	Percent
	(n=1,253) M.E. = +/- 2.7%
Aware of LIEE	49%
Participated	16%
Not Participated	33%
Not Aware of LIEE or Not Sure	51%

Margin of error is determined based on the sample size at expected proportion of 50% at 95% confidence
"Which of the following programs have you participated in? (LIST OF EE PROGRAM)"
"Have you heard of this 'emma" program that includes weatherstripping, insulation, refrigerators, and such?"

Those who are aware but have not participated (33% of the total low income population) were then asked about their level of knowledge about the program (Table 25). Nearly half of those (45%) who are aware but have not participated say they don't know anything about the LIEE program (other than they have heard the name – Energy Management Assistance or "emma" – or recognized a short description of it), while another one in four (28%) said they don't know enough about it to make a decision (or to sign up).

Among those who do know enough about the program to make a decision about it, most (17%) said they had attempted to participate in the past but were not able, and the remaining 10% said they had decided against the program.

Table 25: Knowledge of the LIEE Program
(among those aware of LIEE who have not participated)

Response	Percent
	(n=401) M.E. = +/- 4.9%
Know nothing about it, or "don't know"	45%
Don't know enough to make a decision	28%
Decided against it	10%
Attempted but unable to participate	17%

Margin of error is determined based on the sample size at expected proportion of 50% at 95% confidence
"Which of the following best describes what you know about this program?"

Similar findings emerged from the focus groups. The majority of customers who are aware of the LIEE program don't know too much about it. Some have heard about the program but don't know any details, they know only bits and pieces about it, or their knowledge includes incorrect beliefs. Even participants or those who attempted to participate but were told they did not qualify do not know much about program details. For example, a few customers in the focus groups who were aware that they might qualify for a free refrigerator were unaware that the program offers weatherization.

A related issue is that once customers find out about the program, their lack of more detailed knowledge about the program can be a barrier to taking the next step or following through with their interest in the program. For example, one customer in a focus group who said he "signed up" said that he did not hear back from SCE, so presumed, incorrectly, that the program either ran out of funds or that his household did not qualify, so he did not proactively pursue it.

There are three conclusions from this. First, awareness of the program still has room for improvement. Awareness of CARE among the low income population is above 90%, as evidenced by the high participation rates in CARE. Therefore, it would not be unreasonable to strive for awareness above the LIEE program's current level of 50%. Second, among those who are aware of the program, many don't know enough to take action. Awareness building needs to provide enough information so customers can and do take the next step – such as calling their utility or going online to get more information or to sign up. Third, customers are not very proactive, so they put the onus on SCE to continue to actively pursue them both for enrollment and throughout the process.

Preferred LIEE Information Sources

Customers in the survey (as well as in the focus groups) were asked their preference regarding communications from SCE about the LIEE program. Results from the survey (Table 26) indicate that printed material from SCE is most preferred.

Table 26: LIEE Information Source Preferences (multiple responses accepted)

Response	Percent (n=1,494) M.E. = +/- 2.5%
SCE Separate Mail	68%
SCE Bill or Bill Inserts	40%
Phone Call	18%
Internet / Websites (non-SCE)	12%
News: TV / radio	7%
Email	6%
SCE employees / in-person	4%
SCE Advertising: TV / radio	4%
SCE Website	3%
Newspapers	2%
Word-of-mouth	1%
Community / assistance organization	1%
Contractors	<1%
Stores / Retailers	<1%
Other	2%
No preference	1%

Margin of error is determined based on the sample size at expected proportion of 50% at 95% confidence
"What is the best way for SCE to get information to you about saving energy or about their programs?"

These results suggest that increasing program awareness through communications can continue to rely on mail campaigns. Direct mail is overwhelming the customers' most preferred method, followed closely by bill inserts. Although direct mail and inserts are not always read, a majority of customers at least on occasion do read the materials they receive in the mail from Southern California Edison. Printed material also makes it easier to take action – applications, phone numbers, and website addresses can all be included. A few customers in the focus groups said they save printed materials for future reference as well, although their likelihood of taking action in the future is probably low.

Past program participants and those who had heard of the program before were asked how they learned about the program (Table 27). From the telephone survey, the number one answer was word-of-mouth (from friends, neighbors, or family). This is also supported from the qualitative findings. Program advertising and reps going door-to-door have also been effective.

Table 27: Sources of Information About LIEE (among past LIEE participants or aware of LIEE)

Response	Percent (n=639) M.E. = +/- 3.8%
Friend/neighbor/family	32%
Saw/heard ad	17%
Rep at my door	14%
Bill insert	8%
Direct Mail	7%
Utility website	3%
Phone call	3%
From another program	2%
From county / city / senior center	2%
Landlord	2%
Other sources	5%
Don't know or don't recall	6%

Margin of error is determined based on the sample size at expected proportion of 50% at 95% confidence
"How did you learn about this program?"

A conclusion is that mail communications can and should be augmented by more personal, direct contact methods. In both the focus groups and the quantitative survey, low income customers responded favorably to receiving information about the LIEE program from: (1) telephone contact (including automated telephone calls), (2) email (although some are hesitant about getting too many messages so prefer just one every few months), and (3) community events (many low income people attend local community events because they are seeking assistance resources so the LIEE program is a natural fit here).

Additional contact methods were assessed in the focus groups. Outreach methods that appeal to some customers include:

- In-Person (door-to-door): some people don't open their doors to people they don't know, or they are not home very often so would miss out
- Printed material left at the door (e.g., flyers): not everyone reads them
- Inserts in coupon packs (most don't read them and don't think the LIEE program is a good fit).

Word-of-mouth has proven to be a powerful source of information about the program, so strategies to encourage word-of-mouth might be employed. For example, a "refer-a-friend" program could be established. This also suggests that testimonials could be effective for overcoming customer hesitations about signing up.

LIEE Program Barriers

Those who know something about the program were asked their reasons for not signing up. Reasons were first identified in the pre-segmentation focus groups and then

validated in the quantitative survey. The quantitative survey results are shown below (Table 28).

Table 28: Reasons Not Signed Up for LIEE
(among those who know something about LIEE but have not participated)
(multiple responses accepted)

Response	Percent
	(n=150) M.E. = +/- 8.0%
Not sure how to sign up	44%
Don't think would qualify	38%
Someone else needs it more	36%
Don't think home needs it	35%
Doubt the workmanship	17%
Doubt appliance quality	14%
Some other reason	19%

Margin of error is determined based on the sample size at expected proportion of 50% at 95% confidence
"Which of the following are reasons that you've not signed up for the 'emma' program?"

Top reasons not to sign up, in order of frequency of mention, include: not sure how to sign up, don't think they will qualify, someone else probably needs it more, don't think they will need it, doubt the workmanship, and doubt the appliance quality.

The top barriers should be addressed directly by program marketing and design. Based on these results, if not already, marketing materials should include:

- Directions on how to sign up, including a direct call to action that takes customers to the next step.
- Income requirements so customers can readily determine their eligibility.
- Information that makes it clear that the program is not "all or nothing" in that even if the household does not need or qualify for all the measures, many households will benefit from some aspect of the program.

The program may also want to consider:

- The use of testimonials to overcome customer concerns about program quality (e.g., workmanship, appliances, etc.) or "it's too good to be true."
- Modify or add program measures to increase program appeal and to be perceived to be more relevant to more households. Ideas for program changes include: (1) add measures to provide households with more control, such as smart power strips and timers, and (2) enhance program education to target different audiences such as children, teens, seniors, disabled, etc.

Renters face the additional barrier of needing to get their landlord's permission. Most renters are hesitant to contact their landlord, so the program could take steps to address this. Ideas to consider:

- Developing marketing materials targeted to renters that can address their hesitancies about contacting their landlord, and about making changes to a physical structure that they don't own.

- Adding program measures that do not require landlord approval, such as plug-in control devices or an enhanced CFL program that provides not only initial bulbs but replacements when the originals burn out.

LIEE Program Messaging

In the telephone survey, LIEE participants were asked their main reasons for signing up for the program (Table 29). Saving money (25%) and saving energy (21%) were mentioned as the top two reasons, while receiving the free measures (refrigerator, light bulbs, weather stripping, etc.) were mentioned by about one in three participants.

Table 29: Main Reasons for Signing Up for LIEE (among past LIEE participants)

Response	Percent (n=239) M.E. = +/- 6.3%
Save money	25%
Save energy	21%
Get refrigerator	16%
Get light bulbs	10%
Get weather stripping	9%
Get a swamp cooler	3%
Limited income	3%
Help environment	3%
Discount on bill	3%
Windows	3%
Medical condition	3%
Other reasons	25%

Margin of error is determined based on the sample size at expected proportion of 50% at 95% confidence
"What were the main reasons that you signed up for or participated in this program? Please tell me whatever details you remember about how you learned about the program and about what the program offers that prompted you to sign up."

Program messaging could make use of these top of mind and salient reasons, for example with a "save money without spending any" message. Note that from the post-segmentation focus groups, "saving energy" implied "doing without" for some people, so might not be as motivating as saving money.

Also from the post-segmentation focus groups, message statements to which customers responded most favorably without reservation included those that are very functional and descriptive of the program:

- The program provides energy-saving appliances and services including refrigerators, home weatherization, and energy efficient light bulbs.
- SCE will pay all costs of purchasing and installing the appliances for the program.
- Helps your household use energy more efficiently.

Other sign-up message elements that are important to continue to include are:

- It's easy to participate – just call Southern California Edison or go to SCE.com and complete an online application.
- Both homeowners and renters can participate.
- Customers qualify based on their household income.

Messages that highlight potential reasons for rejection (e.g., statements about proof of income being required, renters needing landlord's signature) should not be "lead" copy items, but rather included further into the marketing piece, for example after the program benefits have been described.

During the group discussions (and from information in the quantitative survey), it was also apparent that many low income customers are struggling financially. Though this states the obvious, it is important to recognize that a very top-of-mind, salient issue is not having enough money to do the things they want to do. Messaging needs a social or emotional leverage point. A potential leverage point for the program is to help customers use energy more efficiently, to allow them to do more of the things they want to do.

V. CONCLUSIONS

The research focused on two overarching objectives: (1) developing a segmentation of the low income customer population, and (2) providing information to support program marketing and, possibly, design.

Specific recommendations follow. These recommendations do not imply that SCE has not been or is not currently addressing these issues, but rather that these issues should be considered when developing future plans. Also, the recommendations are not intended to be binding, in part because this research did not include a process evaluation. All recommendations need to be considered within the context of feasibility, cost effectiveness, and any other relevant criteria.

The LIEE segmentation research identified eight customer segments: four with lower electricity usage and four with higher usage.

Table 30: Low Income Customer Segments

Segment	Name (Lower Energy Usage)	Percent of LIEE (CARE) Population
1	Low Use, Low Touch	21%
2	Young Inland Conservers	17%
3	Older Coastal Conservers	16%
4	Struggling Modest Renters	14%
Segment	**Name (Higher Energy Usage)**	**Percent of LIEE (CARE) Population**
5	Larger, Older Households	14%
6	High Use Newer Homeowners	9%
7	High Usage, Most Problems	5%
8	Less Involved Younger Homeowners	5%

In sum, each low income customer in the service territory can be assigned to one of the eight segments, and identified segments can be targeted through direct mail or other direct contact methods. Additionally, SCE may want to prioritize segments to gain greater efficiencies in program outreach, other variables in the dataset can be used to further screen members of a segment for even more precise targeting, segment members can be located geographically to facilitate a geographic implementation plan, and the dataset can be refreshed periodically to keep it current.

Segmentation Recommendations

In order to further the objectives of improving targeting and outreach activities, the following recommendations should be considered:

- Classify the entire low income population into the eight segments. Because the segments were determined using variables that are common across nearly all low income customers in SCE's database, nearly all customers in the database can be classified into one of the eight segments. Following this, customers from identified segments can be targeted by program implementers with more specific

messages and media. For example, direct mail with a segment-specific message could be sent to just those households that are members of the segment.

- Prioritize the segments. The segments are differentiated based on electricity usage, energy burden, demographics, and other characteristics, so some segments include higher proportions of potentially qualifying customers as well as customers with greater need. Therefore, the efficiency and efficacy of program outreach can be improved by focusing on some segments sooner than others. Moreover, the prioritization of segments should remain somewhat fluid to account to the changing needs of the program. For example, if program administrators identify specific geographic regions or if types of customers are under-represented in program delivery efforts, prioritization of the targeted segments should be reviewed and modified.

- Use additional variables in the dataset to further screen members of a segment into smaller subgroups for even more precise targeting. For example, the dataset includes a variable of the date that service was first established at a premise. Since older homes are more likely to qualify for the types of improvements provided by the LIEE program, this variable can be used to remove all newer residences from a targeted segment. As another example, household energy usage data can be used to remove households with very low usage amounts, so that program resources can be applied to households with greater energy savings potential.

- Apply geographic information to assist program implementers with neighborhood targeting. The dataset can be used to find the ZIP codes that contain higher proportions of customers who belong to higher interest segments. These ZIP codes can be mapped, from which a geographic implementation plan can be developed. This can be taken a step further in the field, where members of different segments can be targeted with different messages or methods of approach.

- Periodically refresh the low income customer dataset. The segmentation algorithm can be applied to new households with at least one year of energy usage history to classify them into one of the eight segments. This is needed since new households will otherwise remain unclassified regarding their segment membership. This will ensure that the natural pattern of households moving in and out of different residences does not render the segmentation obsolete after just a few years. Also, segment membership for all households in the low income customer database can be refreshed periodically (such as every three to five years) to account for changing dynamics within a household.

LIEE Program Marketing and Design Implications

The results of this study also inform marketing and program design. Overall findings that can be generalized across the low income customer population suggest that: (1)

customer awareness and knowledge of the LIEE program have room to grow, (2) some customer barriers to participation could be addressed, (3) participation could be motivated by suggested messaging, and (4) renters face some unique issues.

Awareness and knowledge building recommendations include:

- Continue communications to raise awareness above 50% (current level). It's not unreasonable to strive for higher awareness of the LIEE program among the population of CARE-eligible customers with whom 90% or more already participate in CARE.

- To reach customers, augment direct mail and bill inserts with more personal direct contact methods (e.g., telephone including automated calls, email, and community events). These are the methods most preferred by customers. Other methods of outreach, including door-to-door, were not as popular with customers but could still have a place in the overall program outreach portfolio.

- Employ strategies to encourage word-of-mouth. Word-of-mouth was found to be the number one source of information about the program among those already familiar with it, so efforts to encourage more of this could pay off. For example, a "refer a friend" program could be established. This also suggests that testimonials could be effective for overcoming customer hesitations to sign up (discussed below). The downside is that word-of-mouth tends to promulgate incomplete information, so there is still a strong need for direct communication from SCE to customers.

Top barriers to participation that customers face (once they become aware of the program and it is "in their minds") include: not sure how to sign up, don't think they will qualify, someone else probably needs it more, don't think they will need it, and concerns about program quality. Overcoming these barriers might require both short term and long term solutions. Actions to consider are:

- Ensure awareness building communications provide enough information so customers can and do take the next step – such as directions on how to sign up, and a call to action.

- Clarify misperceptions. Common misperceptions are that: (1) the program can run out of funds, which discourages customers from being more proactive regarding participation, (2) qualifying is "all or nothing," so that customers who have had some weatherization or who have a new refrigerator might believe they won't qualify, and (3) the program is for a single measure, such as "refrigerator replacement" or "weatherstripping" rather than providing a more comprehensive package of measures. This last misperception stems from incomplete information – many customers just don't know too much about LIEE.

- Use testimonials to overcome customer concerns about program quality (e.g., workmanship, appliances, etc.) or "it's too good to be true."

- Increase program "appeal" so more households think they need it. For example, add measures to provide more control, such as smart power strips and timers, or enhance program education to target different audiences such as children, teens, seniors, disabled, etc.

In the telephone survey, LIEE participants were asked their main reasons for signing up for the program. Saving money and saving energy were mentioned as the top two reasons, followed by receiving the free measures (refrigerator, light bulbs, weather stripping, etc.) From the final focus groups, "saving energy" implied "doing without" for some people, so might not be as motivating as saving money.

- Program messaging could make use of these top of mind and salient reasons, for example with a "save money without spending any" message.

Customers also discussed message ideas and personal desires in the qualitative research. This information fuels the messaging recommendations:

- Messaging should include descriptive information, functional benefits, and an emotional leverage point. Descriptive and appealing message statements include:

    - The program provides energy-saving appliances and services including refrigerators, home weatherization, and energy efficient light bulbs.

    - SCE will pay all costs of purchasing and installing the appliances for the program.

    Functional benefits to which customers responded favorably are:

    - Helps your household use energy more efficiently.

    - It's easy to participate – just call Southern California Edison or go to SCE.com and complete an online application.

    An emotional leverage point is:

    - Using energy more efficiently allows you to do more of the things you want to do.

Renters face the additional barrier of needing to get their landlord's permission. Most renters are hesitant to contact their landlord, so the program could take steps to address this. Ideas include:

- Develop a marketing campaign targeted to renters that can address their hesitancies about contacting their landlord, and about making changes to a physical structure that they don't own.

- Add program measures that do not require landlord approval, such as plug-in control devices or an enhanced CFL component.

APPENDICES

Appendix A: Telephone Survey Results by Segment

Table A1. DEMOGRAPHICS: AGE, GENDER, HOUSEHOLD SIZE

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Age (D1)									
18 to 44 years	36%	36%	56%	21%	39%	21%	38%	40%	48%
44 to 65 years	33%	31%	28%	29%	34%	35%	41%	44%	39%
65 or older	25%	27%	11%	43%	21%	38%	18%	13%	12%
Refused	5%	5%	4%	7%	6%	6%	3%	3%	2%
Gender (D8)									
Male	31%	31%	29%	38%	27%	27%	35%	26%	28%
Female	69%	68%	71%	61%	73%	72%	65%	72%	72%
Household Size (mean) (S4, S5, S6)									
Total	3.4	2.8	3.7	2.8	3.6	3.6	4.2	4.1	3.8
Under 18	2.3	2.2	2.3	2.4	2.2	2.1	2.5	2.5	2.2
65 or older	1.5	1.4	1.4	1.5	1.5	1.6	1.4	1.4	1.5

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A2. DEMOGRAPHICS: EDUCATION AND INCOME

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Education (D2)									
High school or less	44%	53%	41%	51%	43%	40%	42%	37%	25%
Some college	32%	25%	35%	25%	35%	36%	34%	39%	38%
College graduate	22%	20%	22%	21%	19%	23%	22%	21%	37%
Refused	2%	2%	1%	3%	3%	2%	2%	3%	1%
Income (D5)									
Less than $33,000	65%	75%	60%	68%	66%	60%	56%	67%	56%
$33,000 to < $53,000	14%	6%	16%	10%	14%	20%	21%	16%	24%
$53,000 or more	7%	4%	10%	3%	5%	8%	14%	6%	15%
Refused	14%	15%	14%	20%	14%	12%	9%	10%	6%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A3. DEMOGRAPHICS: ETHNICITY AND LANGUAGE SPOKEN

		Conservers				Higher Users			
	Total	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Ethnicity (D3)									
Hispanic or Latino	44%	51%	48%	41%	50%	37%	34%	33%	36%
White or Caucasian	36%	31%	34%	42%	23%	42%	42%	39%	45%
African American	9%	8%	9%	6%	17%	8%	8%	18%	5%
Asian	3%	4%	4%	3%	-	6%	1%	1%	5%
American Indian	1%	1%	<1%	2%	1%	-	2%	1%	3%
Other	4%	2%	2%	2%	6%	4%	9%	4%	5%
Refused	4%	4%	2%	4%	3%	3%	5%	5%	2%
Languages Spoken In Home (D4)									
English	70%	61%	68%	72%	66%	73%	81%	81%	85%
Spanish	31%	38%	31%	35%	38%	28%	17%	18%	16%
All Other	1%	1%	2%	2%	1%	2%	1%	-	1%
Refused	2%	4%	1%	2%	1%	2%	1%	3%	1%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A4. DEMOGRAPHICS: DISABILITIES

		Conservers				Higher Users			
	Total	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Disabled Person Living in Home (D6)									
Yes	30%	25%	19%	30%	37%	35%	37%	38%	24%
No	67%	71%	75%	67%	61%	62%	60%	58%	74%
Refused	4%	4%	5%	3%	3%	3%	3%	4%	2%
Type of Disability (if disabled person living in home)(D7)									
Mobility	31%	30%	26%	24%	31%	39%	36%	42%	20%
Chronic Disease	28%	28%	26%	29%	36%	23%	20%	27%	35%
Hearing	11%	3%	15%	22%	5%	13%	14%	6%	7%
Psychological	9%	5%	13%	9%	8%	7%	11%	14%	13%
Vision	9%	8%	10%	10%	6%	13%	8%	-	9%
Cognitive	8%	17%	8%	3%	8%	2%	6%	6%	15%
Other	1%	5%	3%	-	-	2%	-	-	2%
Refused	3%	5%	-	2%	6%	2%	5%	5%	-

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A5. HOME CHARACTERISTICS: TYPE, SIZE, AGE, AND OWNERSHIP

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Type of Home (HC1)									
Single Family	59%	35%	60%	62%	51%	82%	78%	63%	62%
Apartment	23%	45%	19%	16%	32%	3%	5%	21%	21%
Mobile Home	6%	4%	5%	7%	3%	9%	9%	6%	4%
Duplex	5%	8%	4%	6%	3%	3%	1%	2%	4%
Condominium	4%	5%	4%	5%	5%	2%	3%	5%	8%
Townhouse or Row House	4%	3%	6%	4%	5%	2%	3%	3%	2%
Don't Know	<1%	<1%	-	1%	1%	-	1%	-	-
Characteristics (means) (HC2a, HC2b, HC4, HC5)									
Size (square footage)	1,543	1,296	1,478	1,450	1,381	1,861	1,866	1,557	1,540
Number of bedrooms	2.6	1.9	2.7	2.5	2.4	3.1	3.3	2.8	2.7
Years lived there	12.0	11.6	4.5	17.7	9.4	20.8	11.2	9.5	8.1
Year home was built	1970	1966	1980	1964	1967	1966	1977	1973	1971
Own or Rent (HC3)									
Own	51%	31%	41%	65%	38%	83%	66%	41%	58%
Rent or lease	48%	69%	58%	34%	61%	17%	34%	59%	41%
Don't know	1%	<1%	<1%	1%	2%	1%	-	-	1%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A6. HOME CHARACTERISTICS: EE FEATURES AND IMPROVEMENTS

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Energy Efficient Features (HC6)									
Ceiling Fan	65%	55%	69%	63%	59%	75%	77%	67%	73%
Programmable Thermostat	63%	53%	75%	55%	53%	73%	78%	70%	63%
Double Pane Windows	50%	41%	50%	48%	51%	62%	57%	51%	51%
Attic Insulation	41%	26%	47%	42%	33%	54%	53%	43%	43%
Weatherstripping	36%	31%	32%	40%	35%	41%	40%	37%	37%
Whole House Fan	23%	20%	27%	20%	20%	29%	26%	21%	20%
Motorized Attic Vents	15%	10%	13%	10%	14%	28%	21%	13%	19%
CFL's more than 50%	53%	51%	50%	54%	49%	57%	51%	57%	60%
Number of EE Features	2.9	2.4	3.1	2.8	2.6	3.6	3.5	3.0	3.1
Installed Since Living There (if have the feature) (HC7)									
Ceiling Fan	52%	58%	69%	38%	59%	33%	54%	57%	47%
Programmable Thermostat	67%	73%	82%	54%	73%	52%	60%	71%	62%
Double Pane Windows	61%	60%	83%	48%	65%	40%	66%	77%	58%
Attic Insulation	69%	68%	84%	60%	67%	54%	72%	79%	81%
Weatherstripping	52%	53%	70%	45%	58%	38%	42%	63%	59%
Whole House Fan	71%	70%	89%	67%	69%	53%	65%	86%	68%
Motorized Attic Vents	61%	54%	85%	58%	67%	49%	54%	86%	61%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A7. HOME CHARACTERISTICS: ALL ELECTRIC OR ELECTRIC AND GAS

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Other Action Taken To Make Home More Energy Efficient (HC11)									
Yes	16%	12%	14%	19%	12%	19%	25%	20%	21%
No	18%	86%	82%	78%	86%	78%	71%	79%	77%
Don't know	3%	2%	4%	3%	2%	3%	4%	1%	2%
Type of Action (if other action taken) (HC12)									
Refrigerator/Appliances	24%	16%	25%	31%	38%	18%	16%	31%	20%
Insulation	13%	16%	11%	11%	5%	24%	7%	6%	15%
Weather Stripping	11%	16%	14%	8%	10%	12%	5%	11%	10%
New Doors	7%	10%	7%	3%	10%	9%	11%	-	2%
All Electric or Electric and Gas (HIN4)									
All Electric	12%	13%	9%	12%	18%	9%	15%	13%	10%
Electricity and Gas	87%	86%	90%	88%	82%	91%	84%	87%	90%
Don't know	<1%	<1%	<1%	1%	-	1%	1%	1%	1%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A8. HOME CHARACTERISTICS: AC

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Air Conditioning Type (HC9)									
Central AC	46%	26%	64%	32%	41%	57%	70%	52%	54%
Window or Wall AC	19%	22%	16%	22%	25%	20%	11%	11%	16%
Evap or Swamp Cooler	13%	6%	17%	13%	10%	13%	18%	24%	12%
Heat Pump	3%	3%	4%	1%	1%	3%	5%	3%	2%
Fans	18%	23%	12%	20%	23%	17%	17%	17%	15%
Portable AC	4%	5%	1%	4%	4%	3%	3%	2%	6%
None	15%	24%	5%	24%	19%	9%	3%	10%	12%
Don't know	2%	2%	2%	2%	3%	1%	2%	2%	1%
Age of Air Conditioner (if have some type of AC) (HC10)									
Less than 10 years	57%	56%	54%	56%	54%	64%	59%	56%	57%
10 years or older	26%	26%	20%	29%	24%	29%	28%	30%	32%
Don't know	17%	17%	26%	15%	22%	7%	13%	14%	11%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A9. APPLIANCES

		Conservers				Higher Users			
	Total	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	*n= 1,536*	*323*	*262*	*248*	*209*	*205*	*136*	*84*	*69*
Unweighted Sample Size:	*n= 1,536*	*251*	*204*	*194*	*175*	*173*	*174*	*174*	*191*
Appliances in the Home (means) (HIN1)									
Refrigerators	1.2	1.1	1.2	1.2	1.1	1.3	1.4	1.2	1.3
Standalone Freezers	0.2	0.1	0.1	0.2	0.2	0.3	0.4	0.2	0.2
Clothes Washer	0.8	0.6	0.8	0.8	0.7	0.9	1.0	0.8	0.8
Clothes Dryer	0.7	0.5	0.8	0.8	0.6	0.9	0.9	0.8	0.8
Dishwasher	0.5	0.3	0.6	0.4	0.3	0.6	0.7	0.5	0.6
Window AC	1.1	0.9	0.9	1.1	0.9	1.3	1.4	1.1	1.4
Plug-in Electric Heater	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3
Pool or Spa	0.1	0.1	0.1	0.0	0.1	0.2	0.3	0.1	0.2
Total	4.0	3.2	4.2	3.9	3.6	4.8	5.1	4.1	4.4
Age of Primary Refrigerator (HIN3)									
Less than 5 years	51%	52%	59%	46%	50%	42%	56%	55%	58%
6 years or older	43%	40%	35%	51%	42%	54%	37%	40%	37%
Don't know	6%	8%	6%	3%	7%	4%	7%	6%	5%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A10. ELECTRONICS

		Conservers				Higher Users			
	Total	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	*n= 1,536*	*323*	*262*	*248*	*209*	*205*	*136*	*84*	*69*
Unweighted Sample Size:	*n= 1,536*	*251*	*204*	*194*	*175*	*173*	*174*	*174*	*191*
Electronics in the Home (means) (HIN1)									
TV's	2.5	1.9	2.5	2.3	2.6	2.7	3.0	2.8	2.6
Desktop Computers	0.7	0.5	0.6	0.7	0.6	0.8	1.0	0.8	1.0
Laptop Computers	0.5	0.4	0.5	0.5	0.6	0.6	0.8	0.6	1.0
Cable/DVR Boxes	1.3	0.9	1.4	1.1	1.6	1.4	1.8	1.7	1.7
Video Game Console	0.5	0.4	0.7	0.3	0.6	0.4	0.7	0.8	0.9
Total	5.5	4.1	5.7	4.9	5.9	5.9	7.2	6.8	7.2

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A11. ENERGY-RELATED ATTITUDES: EFFORT MADE

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Efforts to Save (1 to 5 scale) (AT1, AT2)									
Always try to save (4-5)	84%	84%	83%	86%	81%	86%	84%	81%	77%
Have been successful (4-5)	66%	74%	61%	72%	63%	67%	55%	54%	55%
Importances (means – 10 point allocation) (AT5)									
Save money on bill	5.1	4.9	4.9	5.1	5.3	5.4	5.2	5.1	5.2
Improve environment	3.0	3.4	3.0	2.9	3.0	2.6	2.7	2.9	2.9
Comfortable and productive	2.0	1.8	2.2	2.0	1.8	2.1	2.2	2.2	2.0

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A12. ENERGY-RELATED ATTITUDES: OBSTACLES

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Obstacles to Saving Energy (most important)(AT4)									
Cooperation of others	19%	10%	22%	13%	20%	25%	26%	28%	19%
Condition of home	9%	8%	10%	6%	10%	9%	10%	11%	13%
Cost	9%	7%	7%	10%	7%	10%	10%	9%	13%
Too many things	8%	8%	12%	6%	9%	6%	8%	10%	9%
Heating or cooling	8%	4%	13%	6%	4%	8%	11%	12%	15%
Renter	3%	5%	4%	2%	5%	1%	3%	2%	3%
Don't know what to do	3%	3%	5%	3%	5%	2%	2%	2%	3%
Age of home	3%	3%	4%	2%	3%	4%	2%	2%	4%
Construction of home	2%	2%	2%	2%	2%	3%	2%	1%	4%
Lack of time	1%	1%	2%	1%	2%	1%	1%	2%	3%
Medical needs	1%	1%	<1%	1%	1%	2%	3%	2%	3%
Pool or spa	1%	-	<1%	-	-	1%	2%	2%	1%
Work at home	<1%	-	<1%	-	-	-	-	-	2%
Other	10%	6%	11%	8%	14%	11%	12%	12%	8%
Don't know	37%	54%	28%	48%	32%	31%	24%	22%	22%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A13. ENERGY-RELATED ATTITUDES: AGREEMENT WITH STATEMENTS

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size: n= 1,536		323	262	248	209	205	136	84	69
Unweighted Sample Size: n= 1,536		251	204	194	175	173	174	174	191
Attitudes About Energy (percent strongly agree) (AT6)									
Cost of energy makes me want to conserve	73%	70%	68%	76%	74%	77%	73%	83%	68%
I monitor my electricity bills very closely	71%	70%	74%	72%	70%	71%	70%	72%	61%
New technologies can help me use energy more efficiently	69%	69%	70%	69%	72%	73%	65%	64%	64%
I am very concerned about the environment	67%	73%	64%	66%	70%	70%	60%	68%	55%
Energy I use has an impact on future generations	66%	66%	68%	65%	67%	66%	65%	66%	67%
I am very knowledgeable about things I can do to save	61%	63%	61%	63%	60%	58%	59%	63%	49%
Saving on bill is worth sacrificing some comfort & convenience	57%	59%	54%	55%	62%	60%	58%	63%	45%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A14. ENERGY-RELATED ATTITUDES: AGREEMENT WITH STATEMENTS

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size: n= 1,536		323	262	248	209	205	136	84	69
Unweighted Sample Size: n= 1,536		251	204	194	175	173	174	174	191
Attitudes About Energy (percent strongly agree) (AT6)									
I've already done everything I can to save energy	55%	62%	50%	60%	58%	58%	43%	49%	34%
I sometimes worry if there is enough money to pay my energy bill	53%	50%	51%	44%	64%	52%	59%	70%	45%
I regularly try to convince others to use less energy	52%	56%	47%	49%	53%	51%	53%	62%	43%
I do more than most people to reduce my impact on the environment	45%	53%	44%	49%	46%	40%	39%	41%	35%
If I wanted to I could use less energy than I use now without sacrificing too much	41%	44%	43%	37%	49%	43%	27%	45%	29%
My actions have little effect on global warming	30%	34%	31%	25%	26%	34%	29%	27%	22%
Having the benefits of using energy is more important than saving energy	24%	27%	23%	27%	26%	23%	17%	24%	9%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A15. ENERGY-RELATED ATTITUDES: AGREEMENT WITH STATEMENTS

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	n= 1,536	323	262	248	209	205	136	84	69
Unweighted Sample Size:	n= 1,536	251	204	194	175	173	174	174	191
Attitudes About Energy (percent strongly agree) (AT6)									
I don't often think about how much energy I use in my home	23%	26%	24%	23%	21%	24%	13%	25%	14%
Someone in my household is dependent on energy for health reasons	22%	18%	19%	17%	24%	27%	28%	32%	21%
I am often the first among family and friends to purchase new appliances	22%	22%	26%	21%	22%	23%	26%	19%	17%
I usually buy used rather than new appliances	15%	12%	16%	13%	17%	15%	16%	20%	12%
If I were to buy a new appliance I would buy a less expensive one even if it used more energy	10%	11%	7%	12%	14%	8%	7%	12%	7%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A16. ENERGY-RELATED BEHAVIORS

		Conservers				Higher Users			
	Total	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	*n= 1,536*	*323*	*262*	*248*	*209*	*205*	*136*	*84*	*69*
Unweighted Sample Size:	*n= 1,536*	*251*	*204*	*194*	*175*	*173*	*174*	*174*	*191*
Energy Efficient Behaviors (percent who "always" do this) (EB1)									
Turn off lights	78%	82%	75%	83%	78%	76%	77%	70%	71%
Power down computer	67%	71%	65%	67%	69%	64%	69%	67%	54%
Unplug chargers	58%	63%	54%	60%	60%	61%	53%	63%	45%
Turn off TV	75%	82%	74%	80%	72%	74%	68%	64%	69%
Run appliances full	74%	69%	78%	73%	73%	74%	81%	71%	74%
Use fans on hot days	45%	50%	40%	45%	49%	40%	40%	45%	41%
Raise/lower thermostat	32%	33%	28%	38%	28%	36%	31%	33%	32%
Clothing for warmth	59%	64%	54%	62%	56%	62%	56%	63%	49%
Close ducts	51%	55%	49%	54%	52%	52%	44%	54%	48%
Lower hot water temp	31%	27%	35%	35%	32%	26%	32%	37%	25%
Mean number of "always"	5.2	5.0	5.2	5.3	5.1	5.3	5.3	5.3	4.9

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A17. ENERGY-RELATED BEHAVIORS: HVAC SETTINGS

		Conservers				Higher Users			
	Total	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size:	*n= 1,536*	*323*	*262*	*248*	*209*	*205*	*136*	*84*	*69*
Unweighted Sample Size:	*n= 1,536*	*251*	*204*	*194*	*175*	*173*	*174*	*174*	*191*
HVAC Temperature Settings (means) (EB2, EB3)									
Hot summer days	75.2	74.6	76.3	74.7	73.6	75.2	75.7	74.5	76.1
Cold winter days	71.5	71.9	71.9	70.1	72.3	71.1	71.7	71.6	71.3

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A18. CONNECTION WITH UTILITY PROGRAMS: OVERALL OPINIONS

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size: n= 1,536		323	262	248	209	205	136	84	69
Unweighted Sample Size: n= 1,536		251	204	194	175	173	174	174	191
Satisfaction with SCE (1 to 10 scale) (CU1)									
Satisfied (%8-10)	79%	88%	79%	83%	76%	75%	66%	70%	77%
Dissatisfied (%1-3)	4%	4%	2%	2%	2%	8%	8%	8%	5%
Mean	8.5	8.9	8.7	8.8	8.5	8.2	7.8	8.1	8.4
Opinions About EE Programs (open ended responses) (CU2)									
POSITIVE: Total	82%	85%	82%	84%	84%	77%	72%	84%	82%
NEUTRAL: Total	13%	12%	13%	14%	8%	15%	22%	11%	16%
Don't Know	11%	10%	10%	13%	6%	13%	17%	10%	14%
Don't Care	2%	2%	2%	1%	1%	2%	5%	1%	2%
NEGATIVE: Total	9%	6%	11%	7%	10%	13%	10%	8%	5%
Not enough info	4%	2%	5%	2%	6%	5%	4%	3%	1%
Hard to qualify	2%	1%	3%	3%	1%	2%	4%	2%	2%
Rebates too small	1%	2%	1%	-	1%	2%	1%	1%	1%
Don't trust SCE	1%	<1%	1%	1%	1%	2%	-	-	1%
Need money to part.	1%	-	-	2%	-	4%	1%	1%	1%
Too much effort	<1%	<1%	<1%	1%	-	-	1%	1%	-
Renter	<1%	<1%	<1%	-	1%	-	-	1%	-
Other	3%	1%	3%	3%	6%	2%	8%	2%	2%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A19. CONNECTION WITH UTILITY PROGRAMS: PAST PARTICIPATION

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(21%)	(17%)	(16%)	(14%)	(14%)	(9%)	(5%)	(5%)
Weighted Sample Size: n= 1,536		323	262	248	209	205	136	84	69
Unweighted Sample Size: n= 1,536		251	204	194	175	173	174	174	191
Ever Participated in EE Programs Before (CU3)									
Yes	46%	46%	48%	39%	49%	41%	51%	58%	56%
No	51%	51%	49%	57%	49%	57%	47%	40%	41%
Don't know	3%	3%	3%	5%	2%	2%	2%	2%	3%
Programs Participated In (if ever participated) (CU4)									
Appliance Recycling	39%	38%	29%	32%	44%	45%	46%	40%	46%
EMA	34%	32%	33%	29%	38%	31%	38%	35%	37%
EE Rebates	28%	23%	29%	19%	33%	35%	35%	24%	37%
Home Energy Surveys	28%	21%	22%	27%	32%	32%	37%	32%	36%
Summer Discount Plan	26%	17%	37%	20%	14%	30%	45%	20%	33%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A20. LIEE SOURCES OF AWARENESS AND PARTICIPATION

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(20%)	(17%)	(12%)	(16%)	(11%)	(11%)	(7%)	(6%)
Weighted Sample Size: n= 239	48	41	28	38	26	27	17	15	
Unweighted Sample Size: n= 254	37	32	22	32	22	34	35	40	
Current or Previous Home (EMA participants) (LIEE3)									
Current	78%	81%	66%	91%	81%	86%	74%	69%	80%
Previous	19%	16%	34%	5%	16%	9%	24%	31%	20%
Don't know	2%	3%	-	5%	3%	5%	3%	-	-
Source of Learning About EMA (EMA participants) (LIEE4)									
Friend/neighbor/family	32%	26%	33%	34%	34%	40%	27%	33%	24%
Saw/heard an ad	17%	18%	12%	13%	22%	17%	26%	13%	17%
Rep at my door	14%	15%	18%	13%	17%	9%	9%	8%	10%
Bill insert	8%	7%	12%	9%	5%	9%	6%	4%	10%
Direct Mail	7%	6%	9%	16%	2%	6%	6%	4%	7%
Utility website	3%	2%	1%	1%	5%	3%	2%	6%	16%
Phone call	3%	1%	4%	3%	2%	5%	1%	5%	5%
From another program	2%	1%	4%	1%	-	-	5%	5%	1%
County/City/Snr Center	2%	4%	-	-	4%	2%	-	1%	2%
Landlord	2%	6%	-	1%	1%	-	-	1%	1%
Other	5%	5%	1%	3%	2%	4%	4%	5%	9%
Don't know	6%	7%	5%	6%	2%	5%	8%	10%	4%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A21. LIEE PARTICIPANT CONCERNS

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(20%)	(17%)	(12%)	(16%)	(11%)	(11%)	(7%)	(6%)
Weighted Sample Size: n= 239	48	41	28	38	26	27	17	15	
Unweighted Sample Size: n= 254	37	32	22	32	22	34	35	40	
Concerns or Hesitations About EMA (EMA participants) (LIEE6)									
Don't know of any	53%	59%	59%	18%	56%	59%	53%	57%	50%
None	30%	57%	19%	50%	28%	27%	35%	31%	35%
Did not believe was free	7%	-	13%	18%	3%	9%	6%	3%	2%
Might be a scam / fine print	3%	-	3%	14%	-	-	3%	3%	-
Had to document income	2%	5%	-	-	3%	-	-	-	-
Doubted quality	1%	3%	-	-	-	5%	-	3%	2%
Didn't think I'd qualify	1%	-	6%	-	-	-	-	3%	-
Wanted more info	1%	-	3%	-	-	-	-	-	7%
Landlord's permission	1%	-	-	-	3%	-	3%	-	2%
Take too much time	1%	-	-	-	6%	-	-	-	-
Other	2%	5%	-	5%	-	-	-	-	-

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A22. LIEE PARTICIPATION DIFFICULTIES

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(20%)	(17%)	(12%)	(16%)	(11%)	(11%)	(7%)	(6%)
Weighted Sample Size: n= 239	48	41	28	38	26	27	17	15	
Unweighted Sample Size: n= 254	37	32	22	32	22	34	35	40	
Difficulties or Disappointments (EMA participants) (LIEE7)									
Yes	15%	14%	9%	9%	9%	27%	21%	26%	25%
No	85%	86%	91%	91%	91%	73%	79%	74%	75%
Type of Difficulty or Disappointment (EMA participants) (LIEE8)									
Scheduling / wait	16%	20%	-	-	-	17%	29%	22%	30%
Contractor didn't finish	15%	-	-	-	-	33%	14%	44%	10%
Workers not professional	11%	20%	33%	-	33%	-	-	-	10%
Weather stripping problem	8%	-	-	-	-	17%	-	22%	20%
AC problem	7%	20%	33%	-	-	-	-	-	-
Record keeping problem	7%	20%	33%	-	-	-	-	-	-
Insulation problem	4%	-	-	-	-	17%	-	-	10%
Other	42%	20%	67%	100%	33%	33%	71%	22%	20%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A23. LIEE REASONS FOR PARTICIPATING

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(20%)	(17%)	(12%)	(16%)	(11%)	(11%)	(7%)	(6%)
Weighted Sample Size: n= 239	48	41	28	38	26	27	17	15	
Unweighted Sample Size: n= 254	37	32	22	32	22	34	35	40	
Main Reasons You Signed Up for EMA (EMA participants) (LIEE5)									
Save Money	25%	22%	31%	32%	19%	14%	32%	32%	27%
Save Energy	21%	14%	25%	14%	16%	32%	29%	15%	27%
Refrigerator	16%	22%	16%	23%	16%	9%	6%	9%	22%
Light bulbs	10%	16%	16%	5%	6%	14%	3%	3%	12%
Weather stripping	9%	3%	16%	5%	19%	9%	3%	3%	12%
Swamp cooler	3%	-	3%	5%	-	-	12%	9%	5%
Limited income	3%	3%	6%	-	6%	-	-	6%	2%
Help environment	3%	-	3%	9%	3%	-	6%	3%	-
Discount on bill	3%	8%	-	-	3%	-	3%	-	5%
Windows	3%	3%	3%	5%	3%	-	-	6%	2%
Medical condition	3%	-	-	9%	6%	-	3%	3%	-
Other	25%	14%	30%	39%	24%	20%	27%	18%	20%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A24. LIEE AWARENESS AMONG NON-PARTICIPANTS

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(20%)	(17%)	(12%)	(16%)	(11%)	(11%)	(7%)	(6%)
Weighted Sample Size: n= 1,002		215	183	167	136	135	85	55	45
Unweighted Sample Size: n= 1,015		167	143	131	114	114	109	114	123
Heard of EMA (not participated) (LIEE1)									
Yes	39%	36%	35%	43%	42%	38%	47%	41%	34%
No	59%	62%	62%	53%	56%	61%	53%	56%	62%
Don't know	2%	2%	1%	2%	2%	1%	-	3%	3%
Weighted Sample Size: n= 401		79	64	72	57	51	40	24	15
Unweighted Sample Size: n= 400		61	50	56	48	43	51	49	42
Status with EMA (not participated but aware of EMA) (LIEE2)									
Know nothing about it	30%	38%	16%	34%	35%	30%	31%	31%	10%
Don't know enough	28%	28%	34%	21%	29%	21%	31%	27%	38%
Decided against it	10%	5%	16%	7%	6%	21%	6%	6%	12%
Attempted but unable	17%	20%	12%	16%	19%	9%	20%	16%	33%
Don't know	16%	10%	22%	21%	10%	19%	12%	20%	7%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A25. REASONS NOT TO PARTICIPATE IN LIEE

		Conservers				Higher Users			
	Total	1	2	3	4	5	6	7	8
	(100%)	(20%)	(17%)	(12%)	(16%)	(11%)	(11%)	(7%)	(6%)
Weighted Sample Size: n= 150		26	32	20	20	21	15	8	8
Unweighted Sample Size: n= 152		20	25	16	17	18	19	16	21
Reasons Not Signed Up for EMA (know something about EMA but have not participated) (LIEE9)									
Not sure how to sign up	44%	58%	35%	38%	38%	38%	63%	63%	25%
Don't think would qualify	38%	44%	33%	31%	47%	40%	44%	14%	29%
Don't think home needs it	35%	50%	22%	15%	50%	47%	42%	13%	22%
Someone else needs it more than you do	36%	40%	32%	40%	31%	33%	42%	27%	47%
Doubt the workmanship	17%	25%	13%	27%	20%	13%	11%	6%	5%
Doubt appliance quality	14%	21%	17%	8%	20%	6%	17%	-	10%
Some other reason	19%	5%	30%	21%	13%	18%	16%	31%	29%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

Table A26. LIEE INFORMATION SOURCE PREFERENCES

		Conservers				Higher Users			
	Total	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	(100%)	*(21%)*	*(17%)*	*(16%)*	*(14%)*	*(14%)*	*(9%)*	*(5%)*	*(5%)*
Weighted Sample Size:	*n= 1,536*	*323*	*262*	*248*	*209*	*205*	*136*	*84*	*69*
Unweighted Sample Size:	*n= 1,536*	*251*	*204*	*194*	*175*	*173*	*174*	*174*	*191*
Information Sources (percent preferring)									
SCE Separate Mail	68%	67%	70%	64%	72%	68%	71%	76%	63%
SCE Bill or Inserts	40%	45%	41%	44%	41%	38%	35%	27%	31%
Phone	18%	18%	15%	15%	25%	20%	17%	25%	13%
Internet/Website	12%	8%	12%	5%	12%	10%	19%	16%	32%
News: TV/Radio	7%	7%	5%	10%	8%	6%	5%	5%	5%
Email	6%	5%	11%	3%	5%	5%	3%	10%	18%
SCE Employees / In-Person	4%	4%	4%	5%	5%	6%	3%	4%	3%
SCE Advertising: TV/Radio	4%	2%	5%	4%	4%	2%	5%	4%	6%
SCE Website	3%	1%	3%	5%	4%	2%	5%	4%	5%
Newspapers	2%	3%	1%	5%	1%	3%	2%	2%	1%
Word of Mouth	1%	1%	2%	2%	2%	1%	-	1%	1%
Community/Assistance Org.	1%	1%	1%	1%	1%	1%	-	1%	1%
Contractors	<1%	1%	1%	-	-	-	-	-	1%
Stores/Retailers	<1%	-	-	1%	1%	-	-	-	-
Other	2%	1%	2%	-	-	1%	-	1%	2%
None	1%	3%	-	1%	1%	3%	1%	-	1%

Significant differences higher and lower than "total" indicated by green and red shading, respectively
Question numbers are shown, actual questions are found in the research instrument

APPENDICES

Appendix B: Quantitative Telephone Survey Research Instrument

Segmentation Survey for HINER & PARTNERS, INC
SCE/PG&E LIEE Program **10/13/10**

n=1,500 Residential Customers

INTRODUCTION

Hello, I'm_____ calling from HINER & PARTNERS, on behalf of [Southern California Edison / Pacific Gas & Electric] to conduct a survey about energy usage in your area. [SCE/PG&E] is requesting your help with this survey, which will be used for planning for programs and services that are offered by the utility. We are only interested in your opinions, and all your answers are completely confidential.

S1. Could I speak to the person in your household who is primarily responsible for making decisions about your electric service, for example the person who would call [SCE/PG&E] if you had a question or wanted to sign up for a program? (IF LANGUAGE BARRIER, ASK TO SPEAK TO SOMEONE WHO SPEAKS ENGLISH)

Yes, speaking.....	GO TO S1
Someone else.....	REREAD INTRO
Not available.....	SCHD CALLBACK
Language Barrier: No English speaker.....	CONTINUE

S2. DO NOT ASK: WHAT LANGUAGE?

Spanish.....	SPANISH PROC
Asian (SPECIFY IF POSSIBLE: ____).....	2
European (SPECIFY IF POSSIBLE: _____).....	3
Other (SPECIFY:_____).....	4
Don't know / can't determine.....	9

(ONCE THE CORRECT PERSON IS ON THE LINE, READ INTRO AGAIN)
Hello, I'm_____ calling from HINER & PARTNERS, on behalf of [Southern California Edison / Pacific Gas & Electric] to conduct a survey about energy usage in your area. [SCE/PG&E] is requesting your help with this survey, which will be used for planning for programs and services that are offered by the utility. We are only interested in your opinions, and all your answers are completely confidential.

IF NEEDED OR WHEN ASKED: The survey can take as long as 20 minutes. I can begin now and at any time we can break and continue later.

SCREENING – 2 Minutes

S3. To begin, which of the following activities are you involved in for your household? (READ. MULTIPLE RESPONSE)

Making decisions about purchasing new appliances.....	1	CONTINUE
Reviewing and/or paying the monthly [SCE/PG&E] bill.....	2	CONTINUE
Calling [SCE/PG&E] if there's a problem, such as a power outage	3	CONTINUE
Budgeting for or figuring out ways to reduce your electricity costs	4	CONTINUE
None of the Above	7	OTHER
Don't Know/Not Sure.....	8	OTHER
Refused	9	OTHER

MUST SAY YES TO 2 OR MORE OF ITEMS 1-4 TO QUALIFY.
OTHER: Ask for someone else who would say yes to two or more of these questions. If yes, return to intro and continue. If not, thank and terminate.

For quality purposes, this call may be monitored or recorded.

First, I have some questions about your household and your home that can tell us something about the energy your household uses. These will help us know how to better serve you.

S4. How many people live in your home for at least 6 months out of the year?

(RECORD NUMBER) _____
Refused..... 99

S5. (IF S4=2 OR MORE) How many are under 18?

(RECORD NUMBER) _____
Refused..... 99

S6. (IF S4 MINUS S3=2 OR MORE) How many are 65 or older?

(RECORD NUMBER) _____
Refused..... 99

MAIN QUESTIONNAIRE

I. HOME CHARACTERISTICS (5 minutes)

HC1. What type of home do you live in? Is it a … (READ UNTIL RESPONDENT SELECTS ANSWER)

Single Family Detached home	1
Duplex	2
Townhouse or Row House with shared walls	3
Condominium with shared walls and another unit above or below	4
Apartment	5
Mobile Home	6
Or some other type (SPECIFY) (DO NOT READ)	7
Don't Know / Refused (DO NOT READ)	9

HC2a. Approximately how many square feet is your home? Your best guess is okay.

(RECORD NUMBER) _____ (0-9998)
Don't Know / Refused (DO NOT READ) 9999

HC2b. How many bedrooms do you have?

(RECORD NUMBER) _____ (0-8)
Don't Know / Refused (DO NOT READ) 9

HC3. Do you own or rent your home?

Own	1
Rent / lease	2
Don't Know / Refused (DO NOT READ)	99

HC4. How many years have you lived at your current residence?

Less than 1 year 0
(RECORD NUMBER OF YEARS) _____
Don't Know / Refused (DO NOT READ) 99

HC4a. [IF HC4=4 or less] And how many times have you moved in the past 5 years?

None 0
(RECORD NUMBER OF Times) _____
Don't Know / Refused (DO NOT READ) 99

HC5. Do you know in what year it was built? Your best guess is okay. (IF GUESSING TRY FOR NEAREST DECADE LIKE "1960")

(RECORD YEAR) _____
Don't Know / Refused (DO NOT READ) 99

HC6. To the best of your knowledge, which of the following does your home have …? (READ)

Yes	1
No	2
Not Sure/Don't Know	8
Refused	9

1. Ceiling fan
2. Double or triple paned windows
3. Intact weatherstripping at all windows and doors that seals air leaks … If you have any windows or doors that leak air when they are closed, than answer "no"
4. A programmable thermostat for heating and cooling
5. Motorized attic vents or fans (that remove hot air from the attic)
6. Attic insulation that would meet current standards
7. Whole house fan (that pulls air from inside the home into the attic and then outside)

[FOR EACH "YES" IN HC6, ASK HC7 BEFORE MOVING ON TO NEXT ITEM]

HC7. Was it installed before you moved in or since you have been living there?

Already installed when I moved in	1
Installed since living there / I installed it	2
Not Sure/Don't Know	8
Refused	9

HC8. Approximately how many of your light bulbs are compact fluorescent or CFL bulbs? (READ)

None (0%)	1
One-quarter (25%)	2
Half (50%)	3
Three-quarters (75%)	4
All or nearly all (100%)	5
Don't Know / Refused (DO NOT READ)	9

HC9. What type of air conditioning does your home have? (READ)(MULTIPLE OKAY)

Central AC	1
Heat Pump	2
Evaporative or swamp cooler	3
Window or wall mounted air conditioner(s)	4
Portable air conditioner	5
Fans	6
None	7
Don't Know / Refused (DO NOT READ)	9

HC10. [IF HC9=1,2,3,4] What is the approximate age of your air conditioner(s)? (IF MORE THAN ONE: The one you use most often.] Your best estimate is okay.

Less than 5 years old	1
5 to less than 10 years	2

10 to less than 15 years..... 3
15 to less than 30 years..... 4
30 or more years..... 5
Don't Know / Refused (DO NOT READ)..... 9

HC11. As far as you know, has anything else been done to your home to make it more energy efficient that I've not mentioned?

Yes..... 1
No 2
Don't know / Refused (DO NOT READ)..... 9

HC12. [IF HIN11=1] What else has been done?

_____

HOME INVENTORY AND EFFICIENCY – 1 MINUTE

My next questions are about things you have in your home that use energy.

HIN1. How many of each of the following does your household have? Only count those that are used or are plugged in at least on occasion.

____(RECORD NUMBER BETWEEN 1-20)
Don't know/Refused..... 99

ELECTRONICS (ASK 1-5 AS FIRST GROUP– RANDOMIZE WITHIN THE GROUP)

1. TV's
2. Desktop computers
3. Laptop computers
4. Cable, satellite, DVR or TIVO boxes
5. Video game consoles like Xbox, PlayStation or Wii

APPLIANCES (ASK 6-14 AS SECOND GROUP – RANDOMIZE WITHIN THE GROUP)

6. Refrigerators
7. Stand alone freezers
8. Dishwasher
9. Clothes washer
10. Clothes dryer
11. Pool or spa
12. DELETED
13. Window AC units (ask ONLY if HC9 = 4)
14. Plug in electric heaters

HIN2. Do you have any other electrical equipment or appliances in your home or garage that you believe use a lot of power? (DO NOT READ LIST – PROVIDE EXAMPLES IF NEEDED.)

Fish tank..... 1
Power tools (table saw, power tools, welding, etc.)..... 2

Air Compressor..... 3
Car charger (for electric car)..... 4
Medical Equipment..... 5
Other (SPECIFY:_____)..... 6
Don't know/Refused..... 99

HIN3. How old is your main refrigerator (in years)? (IF DON'T KNOW, PROBE: Can you tell me how long you have had it?) Your best estimate is okay.

____(RECORD NUMBER BETWEEN 1-50)
Don't know/Refused..... 99

HIN4. Is your home all electric or do you have both electricity and gas?

All Electric..... 1
Electricity and Gas..... 2
Don't know/Refused..... 9

ATTITUDES & MOTIVATIONS (10 Minutes)

AT1. How would you describe [S4=1: your][S4=2 OR MORE: your household's] efforts to save energy in your home? Please use a scale of 1 to 5, where 1 means "You do very little to save energy" and 5 means "You always try to save energy in your home."

5 You always try to save energy..... 5
4 4
3 3
2 2
1 You do very little to save energy..... 1
Don't know / Refused (DO NOT READ)..... 9

AT2. How successful do you think you have been in reducing energy use in your home? Please use a scale of 1 to 5, where 1 means "you have not been very successful" and 5 means "you have been very successful".

5 You have been very successful..... 5
4 4
3 3
2 2
1 You have not been very successful..... 1
Don't know / Refused (DO NOT READ)..... 9

AT3. What obstacles do you face in trying to save energy in your home? (DO NOT READ. MULTIPLE OK) What other obstacles do you face? (CONTINUE PROBING UNTIL EXHAUSTED)

Cooperation of others in the home..... 1
Construction of home (cathedral ceilings, multiple floors, skylights, etc.).... 2
Condition of home (not enough insulation / single pane windows, etc.)..... 3
Cost (or initial cost) of new appliances or repairs / Lack of money..... 4
Maintain comfort / Heating or Cooling / AC use..... 6

Age of home / home is old..... 7
Lack of time / too busy..... 8
Don't know what to do..... 9
Medical needs (of someone in the home)..... 11
Work from home / need to be comfortable or run equipment for work..... 12
Pool / spa / need to run pool pump..... 14
Renter / not the owner / landlord problems..... 15
Too many things that use electricity (TV's, cell phones, etc.)..... 16
Other (specify) _____ 17
Don't know / not sure..... 99

[IF MORE THAN ONE ITEM SELECTED IN AT3, ASK AT4]

AT4. Which ONE of these things do you see as the BIGGEST obstacle to saving more energy? (IF NEEDED, REREAD AT3 RESPONSES. RECORD ONE)

Cooperation of others in the home..... 1
Construction of home (cathedral ceilings, multiple floors, skylights, etc.).... 2
Condition of home (not enough insulation / single pane windows, etc.)..... 3
Cost (or initial cost) of new appliances or repairs / Lack of money..... 4
Maintain comfort / Heating or Cooling / AC use..... 6
Age of home / home is old..... 7
Lack of time / too busy..... 8
Don't know what to do..... 9
Medical needs (of someone in the home)..... 11
Work from home / need to be comfortable or run equipment for work..... 12
Pool / spa / need to run pool pump..... 14
Renter / not the owner / landlord problems..... 15
Too many things that use electricity (TV's, cell phones, etc.)..... 16
Other (specify) _____ 17
Don't know / not sure..... 99

AT5. Now tell me which of the following is more important to you by allocating 10 points between these three options. For example you can allocate all 10 points to just one of them if it is the only one that is important to you, or you can divide the 10 points between the options. (READ ALL THREE OPTIONS, THEN RECORD POINTS. MUST TOTAL 10 PTS)

(RANDOMIZE)
a. ___ Reducing energy use to save money on my bill
b. ___ Reducing energy use to improve our environment
c. ___ Using energy to be comfortable and productive in my home
Don't know / Refused (DO NOT READ)..... 99

AT6. Next, I am going to read you some statements about your outlook on energy use in and around your home. For each statement, I'd like you to tell me if you "strongly agree," "somewhat agree," "neither agree nor disagree," "somewhat disagree," or "strongly disagree." How much do you agree with the statement:

Strongly Agree..... 5
Somewhat Agree..... 4
Neither Agree nor Disagree..... 3

Somewhat Disagree..... 2
Strongly Disagree..... 1
Don't know / Refused (DO NOT READ)..... 9

[RANDOMIZE]

CONSERVATION / ENVIRONMENT ATTITUDES, KNOWLEDGE & BEHAVIORS

1. Having the benefits I get from using energy is more important than saving energy
2. I don't often think about how much energy I use in my home
3. DELETED
4. I believe new technologies can help me use energy more efficiently
5. The amount of energy I use today has an impact on future generations.
6. I'm very concerned about the environment
7. DELETED

PRICE & COST SENSITIVITY

8. Saving even a few dollars on my electric bill is worth sacrificing some comfort or convenience
9. DELETED
10. If I were to buy a new appliance like a refrigerator or air conditioner, I would probably buy a less expensive one even if it used more energy
11. I sometimes worry whether there is enough money to pay my energy bill
12. The cost of energy makes me want to conserve.
13. DELETED

EMPOWERMENT & PERSONAL CONTROL

14. DELETED
15. If I really wanted to, I could probably use less energy than I use now without sacrificing too much
16. Someone in my household is dependent on using energy in my home for health reasons
17. I do more than most people I know to reduce my impact on the environment
18. I am often the first among my family and friends to purchase new appliances or electronics equipment
19. I am very knowledgeable about things I can do around my home to save energy
20. I monitor my electricity bills very closely
21. I've already done everything I can to save energy in my home.
22. I regularly try to convince others to use less energy
23. My actions have little effect on global warming.
24. I usually buy used rather than new appliances

BEHAVIORS – 3 MINUTES

Next I want to ask some questions about things that you [IF S4=2 OR MORE: and members of your household] may or may not do in order to save energy. . Please try to be as honest as you can [IF S4=2 OR MORE: and answer for your entire household rather than just for yourself].

EB1. For each statement, tell me if you do this "always," "most of the time," "some of the time," "rarely," or "never." How often do you…

Always	5
Most of the time	4
Some of the time	3
Rarely	2
Never	1
Not applicable / do not have this	8
Don't know / Refused (DO NOT READ)	9

[RANDOMIZE]

LIGHTS
1. Turn off lights in rooms when not in use
2. DELETED

ELECTRONICS / APPLIANCES
3. Turn off or power down your computer when it is not in use
4. Unplug cell phone, battery, or toothbrush chargers when not in use
5. Turn off your TV when it is not in use
6. Run appliances like your dishwasher or clothes washer ONLY with full loads

HEATING/COOLING
7. Use fans instead of an air conditioner on hot days
8. [IF HC9=1 AND 3, E.G. BOTH] Use an evaporative or "swamp" cooler instead of the air conditioner on most hot days
9. Set your thermostat at a temperature where you might feel somewhat uncomfortable
10. Put on a more clothing to keep warm instead of turning up the heat
11. Close heating or cooling ducts in rooms that are not used much
12. Turn down the temperature on the water heater

EB2. What temperature do you typically keep your home at on hot summer days? (IF NEEDED: Your best estimate is okay.)

_____(RECORD NUMBER: 55 – 95)	1
Don't Know / Refused (DO NOT READ)	9

EB3. What temperature do you typically keep your home at on cold winter days? (IF NEEDED: Your best estimate is okay.)

_____(RECORD NUMBER: 55 – 95)	1
Don't Know / Refused (DO NOT READ)	9

CONNECTION WITH UTILITY / PROGRAM AWARENESS & PARTICIPATION – 1.5 MINUTES

My next few questions are about your energy utility company.

CU1. Thinking about all the services that [Southern California Edison/Pacific Gas & Electric] currently provides, on a scale of 1 to 10 where "1" means not at all satisfied and "10" means completely satisfied, how satisfied are you with [SCE/PG&E] overall?

[RECORD SATISFACTION RATING]

1	2	3	4	5	6	7	8	9	10	DK	REF
										98	99

CU2. Your utility company offers customers different programs to assist them in saving energy. What do you think about these programs overall? (DO NOT READ. MULTIPLE RESPONSE.) Are there any negatives about them?

POSITIVES	
Good / great / helpful / like them	1
NEUTRAL	
Don't know much about it / no opinion	2
Don't care / don't pay attention to this	3
NEGATIVES	
Need money to participate / don't have the money	4
Rent / need landlord's permission	5
Don't qualify / hard to qualify	6
Not enough information about them / Don't know what is offered	7
Don't trust the utility or their motives, etc	8
Too much work or effort (e.g., too much paperwork for rebates)	9
Rebates are too small / not worth it	10
Other (SPECIFY: ___)	11
Refused (DO NOT READ)	99

CU3. Have you ever participated in any utility programs that assisted you in saving energy (IF NEEDED: such as rebates or a home energy survey)?

Yes	1
No	2
Don't know / Refused (DO NOT READ)	9

CU4. [IF CU3=1] Which of the following programs have you participated in? (READ)(Yes, No, DK for each)(RANDOMIZE. H ALWAYS LAST)

a. Rebates for energy efficient appliances or improvements or electronics
b. DELETED
c. Refrigerator or freezer recycling
d. Home energy surveys or audits
e. [SCE: Summer Discount Plan][PG&E: SmartAC], the air conditioning cycling program

f. [SCE: Emma][PG&E: Energy Partners], where income-qualified customers can receive weather stripping, insulation, refrigerators, evaporative coolers, CFL light bulbs, and information about saving energy at no cost.

LIEE PARTICIPATION, PERCEPTIONS, AND BARRIERS – 3 MINUTES

LIEE1. [IF CU4f=NO/DK] Have you heard of this [Emma/Energy Partners] program that includes weatherstripping, insulation, refrigerators, and such?

Yes – Heard of it	1
No – Have not heard of it	2
Don't know / Not sure	3
Refused	9

LIEE2. [LIEE1=1] Which of the following best describes what you know about this program? (READ)(ONE ANSWER ONLY)

You've heard of it but know nothing about it	1
You've heard of it and know something about it but not enough to take action	2
You've considered the program but made a decision not to sign up	3
You attempted to sign up but were informed that you were not eligible or could not participate	4
(DO NOT READ) Don't know / Refused	9

LIEE3. [IF CU4f=YES] Was that in your current home or a previous home?

Current	1
Previous	2
Don't know / Refused	9

LIEE4. [IF CU4f=YES OR LIEE1=1] How did you learn about this program? (DO NOT READ) (PROBE:) Did you hear about it from any other sources? Which ones?

Friend / neighbor / family member	1
Saw / Heard an ad	2
Representative came to my home / door-to-door	3
Utility's website	4
Called utility and they told me	5
Landlord	6
Other (SPECIFY:___)	7
Don't know / Refused	9

LIEE5. [IF CU4f=YES] What were the main reasons that you signed up for or participated in this program? Please tell me whatever details you remember about how you learned about the program and about what the program offers that prompted you to sign up.

_____

LIEE6. [CU4f=YES] Before you agreed to participate, did you have any concerns about it, or any reasons to hesitate to sign up? (DO NOT READ)

Did not believe or trust it was free	1
Might be a scam / fine print	2
Would take too much time	3
Too much paperwork	4
Had to provide income documentation	5
Did not trust contractor / representative to let them in home	6
Doubted the quality of work / appliances	7
Other (SPECIFY:___)	8
Don't know / Refused	9

LIEE7. [IF CU4f=YES] After you signed up, did you encounter any difficulties, problems, or disappointments concerning the program?

Yes	1
No	2
Don't know / Refused	9

LIEE8. [IF LIEE7=1] Can you describe that problem or disappointment?

_____

LIEE9. [IF LIEE2=2, 3] Which of the following are reasons that you've not signed up for the [Emma / Energy Partners] program? (YES, NO, DK/REF FOR EACH)(RANDOM. G ALWAYS LAST)

a. You are not sure how to sign up
b. You do not think you would qualify based on your income
c. You do not think your home needs the improvements that the program offers
d. Someone else needs the improvements more than you do
e. You have doubts that the work would be of high quality
f. You have doubts that the appliances would be of high quality
g. Are there any other reasons I have not mentioned?

LIEE10.[IF LIEE9g=1] What is the reason you've not signed up?

_____

LIEE11.[IF LIEE2=4] What was the reason you were given for not being able to participate? (DO NOT READ. MULTIPLE RESPONSE OKAY.) Any other reasons?

Income too high / Did not qualify based on income	1
Needed landlords permission / Landlord refused	2
Improvements already done / Previous tenant participated	3
Home did not need anything / Home or refrig or AC did not qualify	4
Program ran out of funds	5
Not in my area at that time	6
Other (Specify: ____)	7
Don't know / Refused	9

SOURCES OF INFORMATION / MEDIA / COMMUNICATION – 1 MINUTES

IS1. What is the best way for [SCE/PG&E] to get information to you about saving energy or about their programs? (DO NOT READ)(MULTIPLE RESPONSE) What other ways should they get information to you? (RECORD "BEST" AND "OTHER WAYS")

News: Television, Radio	1
Newspapers	2
Stores / Retailer (e.g., Home Depot)	3
Government partnerships	4
[PG&E/SCE] employees / in-person	5
[PG&E/SCE] advertising: TV, radio, Internet	6
[PG&E/SCE] bill or inserts in the bill	7
[PG&E/SCE] separate mail	8
[PG&E/SCE] website	9
Word-of mouth: Friends, neighbors, etc	10
Internet / Websites / Google search	11
Contractors / electricians	12
Community or assistance organizations	13
Other (specify) _____	14
None / Don't want information	15
Don't Know/Refused	99

IS2. DELETED
IS3. DELETED
IS4. DELETED

DEMOGRAPHICS – 2 MINUTES

These last questions are for classification purposes. Your answers will be kept confidential.

D1. In what year were you born?

19 _ _ (ENTER LAST TWO DIGITS)
Don't Know / Refused (DO NOT READ)..... 99

D2. Which of the following best describes your education? (READ LIST)

High school or less	1
Some college or post-high school training	2
College graduate	3
Completed graduate school	4
Don't Know / Refused (DO NOT READ)	9

D3. Do you consider yourself (READ LIST)

White	1
African-American	2
Hispanic or Latino	3
Asian	4
American-Indian	5
Or a member of another race	6
Don't Know / Refused (DO NOT READ)	9

D4. And what language do you speak most often in your home? (DO NOT READ)(IF RESPONDENT SAYS CHINESE, CLARIFY MANDARIN OR CANTONESE)(IF MORE THAN ONE SPOKEN MOST OFTEN EQUALLY, MARK BOTH)

English	1
Spanish	2
Mandarin (Chinese)	3
Cantonese (Chinese)	4
Vietnamese	5
Tagalog (Filipino)	6
Korean	7
Japanese	8
Russian	9
Other (SPECIFY:_____)	10
Don't Know / Refused (DO NOT READ)	99

D5. Which of the following categories best describes your annual household income? (READ LIST)

Less than $15,000	1
$15,000 to just less than $28,000	2
$28,000 to just less than $33,000	3

$33,000 to just less than $40,000	4
$40,000 to just less than $46,000	5
$46,000 to just less than $53,000	6
$53,000 to just less than $60,000	7
$60,000 to just less than $75,000	8
$75,000 to just less than 100,000	9
$100,000 to just less than 200,000	10
$200,000 or more	11
Don't know / Refused (DO NOT READ)	99

D6. Do you or does anyone in your household have a permanent disability, related to mobility, hearing, vision, cognitive, psychological, or chronic disease?

Yes	1
No	2
Refused	9

D7. [IF D6=YES] In which category would you classify the disability? (READ ONLY IF NEEDED TO PROMPT)

Mobility	1
Hearing	2
Vision	3
Cognitive (learning or mental)	4
Psychological	5
Chronic disease	6
(DO NOT READ) Other (Specify:____)	7
(DO NOT READ) Don't know / Refused	9

D8. OBSERVE AND RECORD GENDER

Male	1
Female	2
Don't know	9

CONFIRM NAME AND TELEPHONE.
On behalf of [SCE/PG&E], thank you very much.

IF RESPONDENT HAS QUESTIONS ABOUT SURVEY LEGITIMACY: The name of the SCE/PG&E manager for this survey project is Carol Edwards. She can be reached at (626) 633-7105.

IF RESPONDENT WANTS INFORMATION OR ASSISTANCE WITH A PROGRAM, PROVIDE THE APPROPRIATE PHONE NUMBER:

Help with bill payment	**800-950-2356**
Emma (EMA) program	**800-736-4777**
Other programs or assistance	**800-655-4555**