Low Income Energy Efficiency (LIEE)
High Usage Needs Assessment
For Southern California Edison
2009-2011

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FINAL REPORT

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EXECUTIVE SUMMARY

This report summarizes research completed to understand high electricity usage among Southern California Edison's low income customer population in support of SCE's Low Income Energy Efficiency (LIEE) program[1].

Introduction and Background

During the 2009-2011 program cycle, the Commission Decision 08-11-031 authorized Southern California Edison (SCE) to conduct a study to understand and identify potential causes and needs of high-tier[2] low income customer energy use in temperate climate zones. The study was intended to inform different aspects of LIEE program delivery including: potential measure offerings, communication vehicles for marketing and education, and recommendations regarding energy efficient practices for this group of customers.

While the High Usage Needs Assessment focused on high electricity usage customers in temperate climate zones, the study was designed to examine and inform understanding of the needs and energy-related practices of low-income customers in all usage groups and climate zones. Moreover, the study sought to identify relevant usage-based factors that may not be reflected by climate-sensitive measures.

It was expected that the results of the study would be predictive (e.g., how do we identify who these customers are), descriptive (e.g., what distinctive characteristics do these customers have), and prescriptive (e.g., what can we do for them?).

Methodology

To achieve the High Usage Needs Assessment objectives, the research team followed a five-phase approach that included:

(1) Database analysis based on SCE CARE customer data[3], SCE billing, usage, and program participation data were gathered and analyzed in conjunction with

[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.

[2] High usage is defined as household electricity use in the top quintile (e.g., the top 20 percent) in each climate zone in SCE's service territory. The top 20 percent were defined as high users because this creates a relatively large pool for analysis (and subsequent recommendations), yet is not too broad so as to remain undifferentiated from the rest of the low income population. High usage was also defined within climate zone because of the wide variation in climate areas and climate-driven electricity usage throughout SCE's service territory. Without this constraint, the majority of high users would be located in the hot, inland climate zones, leaving relatively few in temperate areas for analysis.

[3] CARE customers were used as a proxy for the SCE "low income" customers. However, it is possible that SCE's low income CARE program participants differ from SCE's non-CARE low income customers. This research did not examine potential differences between the CARE vs Non-CARE low income customers.

geographic, weather, and census data to create distinct electricity usage groups, where "high usage" is defined as those in the top 20% (top quintile) within a climate zone.

(2) Focus groups (part 1). Exploratory focus groups were conducted to understand customer issues, concerns, attitudes, and experiences to be used to inform development of the quantitative instrument.

(3) Telephone survey. A phone survey with a randomly drawn sample from Southern California Edison's CARE customers to gather additional potentially differentiating information on relevant variables not available via the existing utility records. The survey's included questions regarding demographics, home characteristics, appliances and electronics, energy usage behaviors, as well as knowledge and experience with SCE's low income energy efficiency program..

(4) In-home interviews and observations. This component was designed to more clearly understand the unique circumstances and beliefs or attitudes that are the main contributors to a households high energy use, and to define subgroups among the high usage segments. Observational data and follow-up discussions also served to enhance and confirm data collected via other methods.

(5) Focus groups (part 2). These discussions were intended to focus on identifying marketing and communication issues, and barriers relevant to select "high" and "moderate" interest segments.

Results, Conclusions, and Recommendations

Contrary to what was expected we did not find that it was a poorly functioning refrigerator or air conditioner that was the main culprit or reason for unusually high usage in low income households. Rather, we found that a variety of different factors contribute to high usage. These include behavioral, knowledge or attitude-based factors, as well as circumstantial factors related to the household or home itself. By and large, high usage is driven by having physically bigger homes, more people in the homes, more appliances and electronics, and more challenges associated with controlling energy use.

In addition, high usage households are characterized by having less concern and less knowledge with regard to implementing more energy efficiency practices – which can include daily behaviors such as turning off lights and TVs or making decisions regarding new appliance purchases or getting rid of ill-performing or secondary appliances and electronics. Financially speaking, while in many cases these households struggle to pay their bills, they also tend to skew higher on income. In terms of general attitudes, they tend to feel it is "their right" to be able to use the energy they want and need, and as such are less likely to make personal "sacrifices" in service of comfort, as is often the case with their lower usage counterparts. In other words, the idea of reducing their electricity usage by doing without is a turn-off.

Three main conclusions or "needs" regarding reducing their electricity usage emerged. High usage low income customers may benefit from:

(1) More control since they have more people, more appliances and electronics, and more space (for heating and cooling).

(2) More education about what they can do to manage and reduce their energy use.

(3) Greater reach into the household so that more household members can be informed.

The research identified five main subgroups of low income high usage customers. These include: "Declining Health/Wealth," "Divided Household," "Hostage to Domicile," "Concerned but Uninformed," and "Merry Users." The existing LIEE program meets the needs of some, but not all, of the subgroups.

While the research did not identify a particular "measure" that would assist these customers in reducing their consumption, a variety of educational, marketing, and lifestyle-specific program enhancements may assist these customers in reducing their energy bills and overall usage. In addition, the program could consider measures such as power strips or other technology-based controls that can assist these households in managing or monitoring their energy usage.

Specific recommendations for program enhancements include:

(1) Increase focus on education delivery:
   a. Develop and target educational materials at other members of the household, such as children and roommates.
   b. Customers suggested reminders, helpful hints, checklists, and how much energy things use. Highlight the savings potential from specific actions to generate greater "concern" and increased personal action.

(2) Enhance cooperation within a household through increased bill payer control, for example, smart power strips and "parental control" devices can be added to program measures.

(3) For medically-dependent households, identify any unique energy-related needs that their specific medical situations require that might be addressed through program measures or even other programs.

(4) Add measures that are suited to a more transient renter population and do not require landlord approval, such as portable or plug-in energy control devices and replacement CFLs.

Program marketing should speak more directly to these subgroups.

(1) Each subgroup represents a unique scenario that can be the focus of different creative executions. For example:
    - Messaging targeted to “Divided Households” can recognize that getting cooperation from others in the household is a major barrier.
    - Outreach aimed at “Declining Health/Wealth” households could include a prepare-for-retirement message to encourage energy efficiency improvements before they reach the stage of declining health and wealth.
    - Messages for the “Concerned But Uninformed” and the “Merry Users” could include factual information about the cost of leaving TVs or other electronics on, or the cost of running a Central AC when no one is home.

(2) Tactics to reach these different subgroups can also be employed. For example:
    a. Work through county health organizations to reach “Declining Health/Wealth.”
    b. Work through schools for education and distribution of portable program measures to reach “Divided Households,” “Concerned But Uninformed,” and “Merry Users.”

I. INTRODUCTION AND BACKGROUND

In California, the Investor Owned Utilities regulated by the California Public Utilities Commission (CPUC) are responsible for administering statewide programs designed to provide our 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. Reducing the energy burden on this group of customers is also expected to serve the overall goals of the state to reduce greenhouse gas emissions. The two primary programs administered by the Investor Owned Utilities include: (1) The California Alternate Rates for Energy (CARE) program which offers discounted utility rates to qualifying low-income customers in order to reduce financial burden and avoid threatened or actual service disconnection, and (2) The Low Income Energy Efficiency (LIEE) program which provides a range of energy-related no-cost services including refrigerator replacement, evaporative cooler installation, replacement of central or room air conditioning equipment, home weatherization, and lighting measures such as CFLs and torchieres. In addition, the program provides informational and educational materials on energy efficiency practices. Both programs are available to customers who meet the qualifying guidelines.

Historically, low-income energy efficiency programs have been implemented in recognition of the limited financial resources and access that might hinder low-income customer participation in conventional energy efficiency programs.

During the 2009-2011 program cycle, the Commission Decision 08-11-031 authorized Southern California Edison (SCE) to conduct a study to understand and identify potential causes and needs of high-tier[4] low income customer energy use in temperate climate zones. The study was intended to inform different aspects of LIEE program delivery including: potential measure offerings, communication vehicles for marketing and education, and recommendations regarding energy efficient practices for this group of customers.

It was anticipated that if SCE could learn more about the unique needs and circumstances of these customers, program managers may be able to expand program offerings to include a measure or service that might enable these customers to be better served and serve the overall state goals of emission reduction by mitigating the consumption of customers with unusually high usage. In addition to identifying relevant potential measures for this group of customers, this research sought to examine

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behavioral and communication related variables that could inform and improve program delivery with regard to communication vehicles for marketing and education, and potential recommendations regarding energy efficient practices for these customers.

While the High Usage Needs Assessment focused on high electricity usage customers in temperate climate zones, the study was designed to examine and inform understanding of the needs and energy-related practices of low-income customers in all usage groups and climate zones. Moreover, the study sought to identify relevant usage-based factors that may not be reflected by climate-sensitive measures.

As a result, customers in both temperate and non-temperate areas were examined in the research. It was anticipated that the findings would inform relevant program design and delivery plans proposed for SCE's 2012-14 Energy Savings Assistance Program application.

It was expected that the results of the study would be predictive (e.g., how do we identify who these customers are), descriptive (e.g., what distinctive characteristics do these customers have), and prescriptive (e.g., what can we do for them?).

The key objectives of the SCE High Usage Needs Assessment Study were to:

- Identify energy inefficient practices and beliefs that are likely to contribute to unusually high electricity usage among this group of low-income customers, particularly in temperate climate zones.
- Identify energy-inefficient appliances, electronics and household characteristics (e.g., age or style of home) that are likely to contribute to unusually high electricity usage among this group.
- Identify the barriers to changing energy inefficient attitudes and behavior.
- Outline messages, information and strategies that are likely to be successful in reaching and communicating with high electricity usage customers.

The results of the research are included in this report.

II. METHODOLOGY

To achieve the High Usage Needs Assessment objectives, the research team followed a five-phase approach that included: (1) analysis of SCE CARE billing, program participation, usage, geographic data records, (2) exploratory focus group discussions, (3) telephone surveys, (4) in-home visits, and (5) confirmatory focus group discussions (Table 1). By triangulating multiple data sources, factors contributing to high electricity use could be identified that might not be uncovered if only one source of data were used for understanding potential determinants of high consumption.

Table 1: Data Sources and Purpose

Data Source	Type	Number	Dates	Purpose
Low Income (CARE) Customer Population	SCE Database: utility, geographic, and census data	200,000 analyzed	Aug 2010	Determine usage quintiles; profile quintile groups on additional variables
CARE Customers: temperate climate, non-temperate climate, high usage	Focus Groups	6 groups (2 high usage)	Feb 2010	Understand attitudinal and perceptual issues for quantitative survey
CARE Customers: stratified by segments	Telephone Survey	1,536 interviews	Oct/Nov 2010	Profile quintile groups based on survey data
High Usage CARE Customers: 3 temperate areas and 2 non-temperate areas	In-Home Qualitative and Observational	29 interviews	Dec 2010	Determine reasons for high usage based on observation and discussion
CARE Customers: high and moderate interest segments	Focus Groups	3 groups	Feb 2011	Discuss barriers to LIEE program and messaging

With the exception of the qualitative in-home visits, the phases of research for the High Usage Needs Assessment were completed in conjunction with the LIEE Segmentation Research. Additional details for each of the five phases include:

(1) Database analysis. Based on SCE CARE customer data[5], SCE billing, usage, and program participation data were gathered and analyzed in conjunction with geographic, weather, and census data to create distinct electricity usage groups, where "high usage" is defined as those in the top 20% (top quintile) within a climate zone.

(2) Focus Groups. Exploratory focus groups were conducted to understand customer issues, concerns, attitudes, and experiences to be used to inform development of the quantitative instrument.

(3) Telephone survey. A phone survey was completed among a randomly drawn sample from Southern California Edison's CARE customer population to gather additional potentially differentiating information on relevant variables not available

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via the existing utility records. The survey's included questions regarding demographics, home characteristics, appliances and electronics, energy usage behaviors, as well as knowledge and experience with SCE's low income energy efficiency program.

(4) In-home interviews and observations. This component was designed to more clearly understand the unique circumstances and beliefs or attitudes that are the main contributors to a households high energy use, and to define subgroups among the high usage segments. Observational data and follow-up discussions also served to enhance and confirm data collected via other methods.

(5) Focus Groups. These discussions were intended to focus on identifying marketing and communication issues, and barriers relevant to select "high" and "moderate" interest segments.

Database Analysis

For the first phase of research, Southern California Edison created a dataset of service account-level information among the current CARE customer population. The utility's CARE customers are those 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 may have different energy consumption at the different homes. Likewise, a specific physical residence may show different energy consumption patterns depending on the residents who are living there.

The CARE population was used to represent the population of LIEE-eligible customers because eligibility requirements for the two programs are similar, the CARE program periodically validates participant income, and the population of CARE participants is estimated to represent almost 100% of all CARE-eligible customers. The service account-level data is of three types: utility-gathered, geographic, and census-derived.

The utility customer data is typical of the information that is used to transact utility customer business, and was compiled across the previous three years. These data

includes: 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). Of note, the utility data is used primarily for billing and program implementation purposes and are available for nearly all customer accounts.

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. Census-derived data, which is modeled from census block group-level data, 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 group level, the household-level data is essentially an average of the census block group. Individual household differences are not represented.

This combined utility, geographic, and census data were used to develop a multi-dimensional segmentation solution (for the Segmentation Study), as well as identify high usage households for the purposes of this research.

Each service account was assigned to an electricity usage quintile within its respective climate zone. The top quintile (e.g., the top 20 percent) in each climate zone were identified as high users. These customers provided a relatively large pool for within-group analysis, while also allowing for between group comparisons with rest of the low income population. High usage customers were also differentiated by climate zone to account for climate or weather-sensitive electricity usage.

Once usage quintiles were defined, subgroups of each quintile were created and compared across *all* of the dataset variables. Distinctive characteristics of high usage customers are discussed in the results section.

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 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 2: Initial Focus Group Schedule and 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

Customers were recruited to a central facility for a 2-hour group discussion. 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 interview guide is provided in Appendix C.

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 high electricity users and others, and develop the research instrument for the telephone survey.

Telephone Survey

In the third phase of research, the research team completed 1,536 telephone survey interviews designed to gather additional descriptive information on the usage groups that were identified via analyses of SCE's existing customer data and census data. The survey inquired about key behavioral, attitudinal, circumstantial, situational, and demographic variables that were not available via these other sources but might assist in differentiating high usage from the lower usage customers within the low income population. The survey sample frame included the population of SCE's CARE customers.

The survey was designed to serve two purposes: the low income customer segmentation and the high usage needs assessment. For this reason, the survey sample was stratified. Five of the eight segments determined by the Segmentation Study were relatively small (less than 15% of the population) given the proposed total sample size, so the survey sample was stratified across the eight 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 weighted within each segment to match population proportions. 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 3: Segmentation-Based 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**	

There were 350 interviews among high usage customers (belonging to the top usage quintile) in the sample of 1,536 of total interviews. An additional oversample of 186 interviews among high users proportional to their representation within the eight

segments was completed to yield a total high usage sample size of 536. The same weighting that was applied based on segment membership was used in the usage quintile analysis to ensure that each quintile was representative across the population. For the usage quintile analysis, unweighted and weighted sample sizes are shown below (table 4).

Table 4: Sample Sizes for Electricity Usage Quintile Analysis

Quintile	Sample Size (unweighted)	Sample Size (weighted)	Margin of Error (95%)
Top 20%	536	445	+/- 4.6%
2nd	294	267	+/- 6.0%
3rd	303	322	+/- 5.4%
4th	286	320	+/- 5.5%
Bottom 20%	303	368	+/- 5.1%
Total	**1,722**	**1,722**	

The interviews were completed using a CATI system between October 12 and November 8, 2010. 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 interviews were completed in English (70%) and Spanish (30%), depending on the language preference of the respondent. The average interview length was 21 minutes in English and 24 minutes in Spanish. Refusal rates (the percentage reached by phone who refused to answer any questions) were quite low at 31% among English speakers and 21% among Spanish speakers.

Survey topics (Appendix D) 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 five electricity usage-based quintile groups to identify key behavioral, attitudinal, circumstantial, situational, and demographic variables that differentiate between high users and the other usage level groups. In this way, the survey data were used to validate usage group differences identified by the initial dataset variables, as well as identify relevant behavioral, attitudinal and demographic variables that contribute to differences among the usage groups.

In-Home Qualitative Interviews and Observations

The fourth component of the research involved visiting 29 "high usage" homes and conducting in-depth interviews and observations with this sample of low income customers. Twenty-one interviews were completed with customers in temperate locations (clustered in four different geographic areas), and 8 interviews were completed in non-temperate areas (clustered in two geographic areas). Respondents were pre-recruited from randomly generated lists of low income households in each of the geographic clusters. All in-home interviews were conducted in English.

Table 5: In-Home Interview Schedule and Locations

Date	Location	Climate	Number	Language
Nov 23, 2010	Long Beach	Temperate	4	English
Nov 30, 2010	Lancaster	Non-Temperate	4	English
Dec 1, 2010	San Bernardino	Non-Temperate	4	English
Dec 7, 2010	Anaheim/Orange	Temperate	4	English
Dec 8, 2010	Garden Grove	Temperate	4	English
Dec 10, 2010	Oxnard	Temperate	4	English
Dec 14, 2010	Oxnard	Temperate	3	English
Dec 15, 2010	Long Beach	Temperate	2	English

Each two to three-hour session included: (1) the respondent completing a 15-page written survey comparable to the quantitative telephone survey described above (which included an inventory of the appliances and electronics present), (2) an observational walk-through to confirm and validate the self-reported information in the assessment as well as to note any apparent reasons for high electricity usage such as appliances or electronics left on, the general age and condition of these items, etc., and (3) a 45-60 minute open-ended semi-structured interview discussion with probing to provide deeper insight regarding the reasons underlying the household's high usage (Appendix E).

As might be expected, these observations and interviews generated insights into behaviors that are not commonly garnered via traditional self-reported data. For example, when asked how much TV the household watches, respondents reported a couple of hours, but when the observer was there, there were 3 or 4 TVs that were left on unattended with no one watching, which suggests that "how much TV is watched" is NOT the same as "how many hours are all your TVs on during the day"? These types of observational and depth-interviewing assisted in further describing some key issues related to "high usage" as well as differentiators for identifying and profiling some of the different sub-groups of "high users" as will be described later.

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 three, the program team identified segments of "higher interest," "medium interest," and "lower interest". Relative interest was based on a variety of factors including the potential need/benefit for particular segments – given what the program offers and the overall program goals. The program team anticipates that the "interest" allocations of the various segments is not likely to remain static.

Table 6. FInal Focus Group Schedule and Locations

Date	Location	Group Composition	Language
Feb 16, 2011	Riverside	High & Medium Interest	English
Feb 17, 2011	Los Angeles	High 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) electricity usage (only customers in the top 3 quintiles were recruited), and (2) segment membership (as determined from the Segmentation Study). 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.

Customers were recruited to a central facility for a 2-hour group discussion. Discussion topics included: overall energy habits and use (e.g., main uses of energy in the household, households habits and practices regarding energy use), efforts to conserve energy (and challenges in doing so), sources of assistance for dealing with high energy bills, perceptions and experiences concerning the LIEE program (e.g., awareness, interest, and barriers), review of LIEE outreach methods, and review of the LIEE enrollment process (Appendix F).

III. HIGH USAGE NEEDS ASSESSMENT: KEY DIFFERENTIATORS OF HIGH USAGE

Results are discussed in two sections: (a) a description of the overall profile of the "high usage customers" as defined by the top usage quintile and how these customers are different from the remaining 80% of low income customers, and (b) a breakdown of the "overall high usage customers" into a number of sub-groups that are differentiated in key ways which will allow program management to better identify, target and meet the unique needs of specified high usage groups.

Summary of Results: Key Differentiators between High Usage and Moderate/Low Usage Customers

Based on significant difference testing between low income high electricity users (top quintile) and moderate to low electricity users (bottom 4 quintiles) across the variables from the dataset and telephone survey, low income high users as a whole, in both temperate and non-temperate climate zones, are characterized by the following related to their energy consumption:

- More likely homeowners who live in physically larger homes (44-65 years, not retired, higher income).
- More electricity-consuming appliances and electronics of all types (extra refrigerators, dishwashers, pools, etc.; multiple TV's, game systems, DVR's, etc.)
- More people in the household (more children, more related and unrelated adults), and more trouble controlling others in the home.
- Not as diligent about trying to save energy – leaving things on when not using them (and among higher income customers, less willing to do without the benefits of electricity usage).
- Less knowledgeable about what to do – not knowing what uses a lot or what behaviors are problematic.
- Concerned about the cost of energy and some struggle to pay their energy bills.
- For some, a disability or medical condition of a household member imposes additional energy needs – for heating or cooling, medical equipment, more TV use, etc. – beyond simply being housebound.

Based on these distinctions, three main conclusions or "needs" regarding reducing their electricity usage emerge. In particular, high usage low income customers may benefit from:

(1) More control since they have more people, more appliances and electronics, and more space (for heating and cooling).

(2) More education about what they can do to manage and reduce their energy use.

(3) Greater reach into the household so that more household members can be informed.

Moreover, based on high users' reasons for *not* participating in LIEE in the past along with some of the differentiators previously discussed, it might be that high users are less likely to have responded to LIEE marketing in the past compared to lower usage groups.

High users, with their larger homes and somewhat higher incomes, might not consider themselves qualified for or in need of the program. It is also likely that program measures do not currently address the root cause of their particularly high energy consumption – which is primarily related to having lots of appliances and electronics, lots of people in the household using these things, and a lack of cooperation (and control) over wasteful practices.

Detailed Results

Characteristics that define high users (compared to lower usage groups) regardless of their geographic location are described below. This comparison is based on the quantitative survey results. Significant differences at a 95% confidence level are indicated by < or >.

Demographics

- Householder Age and Household Size: High users are more likely to be headed by someone who is middle-aged (45-64, probably not retired), and are more likely to have larger household sizes – yet not just with those under 18 or over 65, suggesting that high users are also more likely to have other adults in the home (e.g., roommates or boarders, related extended family members such as adult children living at home).

Table 7: High Usage Profile: Householder Age

"In what year were you born?"	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
18 to 44 years	33%		36%
45 to 64 years	42%	>	32%
65 years or older	21%		26%
Refused	3%		5%

Significant differences at 95% confidence indicated by < and >

Table 8: High Usage Profile: Household Size (number living in home)

"How many people live in your home at least 6 months out of the year?"	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
Mean	4.3	>	3.2
How many are under 18 (mean)	2.3		2.3
How many are 65 or older (mean)	1.5		1.5

Significant differences at 95% confidence indicated by < and >

- Income and Education: High users have higher household income and education (although over half are still very low income with HHI under $33,000/year).

Table 9: High Usage Profile: Household Income

"Which of the following categories best describes you annual household income?"	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
Less than $33,000	56%	<	67%
$33,000 to less than $53,000	23%	>	12%
$53,000 or more	10%	>	6%
Refused or Don't Know	11%		15%

Significant differences at 95% confidence indicated by < and >

Table 10: High Usage Profile: Education

"Which of the following best describes your education?"	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
High school or less	39%	<	46%
Some college	36%	>	31%
College graduate	23%		21%
Refused	2%		2%

Significant differences at 95% confidence indicated by < and >

- Disability: High users are more likely to have a disabled person living in the home, and in particular someone with a mobility disability.

Table 11: High Usage Profile: Person with Disability Living in Home

"Do you or does anyone in your household have a permanent disability related to mobility, hearing, vision, cognitive, psychological, or chronic disease?"	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
Yes	38%	>	28%
No	60%	<	68%
Refused	2%		4%

Significant differences at 95% confidence indicated by < and >

Home Characteristics

- Type of Home: High users are more likely owners in single family homes, so their homes are larger and they tend to have lived there a longer time.

Table 12: High Usage Profile: Type of Home

"What type of home do you live in?"	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
Single Family	74%	>	55%
Apartment	11%	<	25%
Mobile Home	6%		6%
Duplex	2%		5%
Condominium	3%		5%
Townhouse or Row House	4%		4%
Don't know	<1%		<1%

Significant differences at 95% confidence indicated by < and >

Table 13: High Usage Profile: Size of Home

"Approximately how many square feet is your home?"	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
Mean (square feet)	1,851	>	1,440

Significant differences at 95% confidence indicated by < and >

- EE Features: High users are *more* likely to have more energy efficient features (ceiling fans, programmable thermostats, adequate insulation and weatherstripping, etc.) and they are more likely to have installed it while living there. High users are also more likely to have taken additional actions to make their home more energy efficient, including appliance and insulation upgrades.
  - It is likely that because they tend to be homeowners and to have higher income they tend to make EE improvements to their homes more frequently than lower usage groups.

Table 14: High Usage Profile: Energy Efficient Features

"To the best of your knowledge, which of the following does your home have?" (multiple responses)	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
Ceiling fan	75%	>	64%
Programmable thermostat	70%	>	62%
Double pane windows	54%		50%
Attic insulation	51%	>	39%
Weatherstripping	40%	>	35%
Whole house fan	27%	>	22%
Motorized attic vents	20%	>	13%
CFL's more than 50%	54%		52%
Number of EE Features (mean)	3.4	>	2.8

Significant differences at 95% confidence indicated by < and >

- AC: High users are more likely to have central AC, and AC of any type (particularly those in non-temperate zones, but this applies to temperate as well).

Table 15: High Usage Profile: Air Conditioning Type

"What type of air conditioning does your home have?" (multiple responses)	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
Central AC	57%	>	44%
Window or wall AC	17%		20%
Evaporative or swamp cooler	13%		13%
Heat pump	4%		3%
Fans	20%		19%
Portable AC	3%		4%
None	11%	<	16%
Don't know	1%		2%

Significant differences at 95% confidence indicated by < and >

- All Electric: High users are more likely to be all electric, although just 16% of high users are in this category. The majority of all electric homes are apartments and condominiums located in temperate climate zones.

Table 16: High Usage Profile: All Electric or Electric and Gas

"Is your home all electric or do you have both electricity and natural gas?"	High Users		Low/Moderate Users
	(n=445)		(n=1,277)
All Electric	16%	>	11%
Electricity and Gas	83%	<	88%
Don't know	1%		<1%

Significant differences at 95% confidence indicated by < and >

Appliances and Electronics

- Appliances: High users tend to have more appliances of all types: refrigerators, standalone freezers, clothes washers and dryers, dishwashers, window AC, plug-in electric heaters, and pools and spas). Also, high users in non-temperate zones have more appliances of all types than those in temperate zones. Non-temperate homes tend to be newer and larger since they are in areas of more recent development, so are more likely to have more major appliances (such as a dishwasher or second refrigerator).

Table 17: High Usage Profile: Appliances in the Home

"How many of each of the following does your household have?" (means)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
Refrigerators	1.4	>	1.2
Standalone freezers	0.3	>	0.2
Clothes washers	0.9	>	0.8
Clothes dryers	0.9	>	0.7
Dishwashers	0.5	>	0.4
Window AC	0.2		0.2
Plug-in electric heaters	0.4	>	0.3
Pools or spas	0.2	>	0.1
Total	4.8	>	3.8

Significant differences at 95% confidence indicated by < and >

- Electronics: High users are also more likely to have substantially more electronics of all types: TV's desktop and laptop computers, cable/DVR boxes, and video game consoles. Perhaps this is related to the number of people in the home as well as to somewhat higher incomes. For example, in some cases these homes have 5+ TV's, 3 or 4 video game consoles, and multiple desktop and laptop computers, monitors, and other peripherals.

Table 18: High Usage Profile: Electronics in the Home

"How many of each of the following does your household have?" (means)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
TVs	3.1	>	2.3
Desktop computers	1.0	>	0.6
Laptop computers	0.9	>	0.5
Cable/DVR console	1.9	>	1.2
Video game console	0.8	>	0.5
Total	7.7	>	5.1

Significant differences at 95% confidence indicated by < and >

Energy-Related Attitudes

- The telephone survey data show that relative to those who use less energy, the households that use more energy tend to be less likely to say they always try to save and less likely to think they have been successful.

Table 19: High Usage Profile: Efforts to Save Energy

"How would you describe your household's efforts to save energy in your home?" "How successful do you think you have been?" (Top 2 Box)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
Always try to save	78%	<	84%
Have been successful	54%	<	68%

Significant differences at 95% confidence indicated by < and >

- High users are also more interested in being comfortable and productive and less interested in improving the environment (especially those in non-temperate zones) when compared to lower usage quintiles. These results suggest that high users are a bit less motivated to save and they have more barriers to success when they try.

Table 20: High Usage Profile: Motivational Priorities

"Tell me which of the following is more important to you by allocating 10 points between each of the three options." (means – 10 point allocation)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
Save money on the bill	5.2		5.1
Improve the environment	2.7	<	3.0
Be comfortable and productive	2.2		2.0

Significant differences at 95% confidence indicated by < and >

- Qualitative data supports this idea with some high usage customers indicating it is their "right" to use what they want if they pay for it, and while saving energy would be nice, they do not want to sacrifice personal comforts – so they keep their house cool in the summer, their spa hot, and their beer cold in the spare refrigerator.

- Regarding obstacles to saving energy, high usage households (with more people) report that cooperation from others is their main obstacle to saving energy – suggesting the bill payer may face resistance from other members who do not share their attitudes. High users are also less likely to say they "don't know" what their obstacles are, suggesting that high users have more clarity, or at least more hypotheses, about the reasons behind their usage.

Table 21: High Usage Profile: Obstacles to Saving Energy

"What obstacles do you face in trying to save energy in your home?" (multiple responses)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
Cooperation of others	29%	>	16%
Condition of home	11%		9%
Cost	9%		9%
Too many things	8%		8%
Heating or cooling	9%		8%
Renting	4%		3%
Don't know what to do	2%		3%
Age of home	4%		3%
Construction of home	3%		2%
Lack of time	1%		1%
Medical needs	3%		1%
Pool or spa	2%		<1%
Work at home	<1%		<1%
Other	11%		10%
Don't know	25%	<	40%

Significant differences at 95% confidence indicated by < and >

- Additionally, high users are: more concerned about the cost of energy and being able to pay their energy bill, more likely to think about how much energy they use at home , and less likely to think they have done all they can to save energy – which implies that energy use weighs on their minds.

- At the same time, they are less knowledgeable about how they can save - suggesting that they recognize their high usage situation but don't have all the information needed to make a change.

Table 22: High Usage Profile: Attitudes About Energy

"How much do you agree with the statement … " (% Strongly Agree)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
Cost of energy makes me want to conserve	79%	>	72%
I am very concerned about the environment	63%	<	68%
I am very knowledgeable about things I can do to save	56%	<	61%
I've already done everything I can to save energy	47%	<	56%
I sometimes worry if there is enough money to pay my energy bill	59%	>	52%
I do more than most people to reduce my impact on the environment	35%	<	48%
I don't often think about how much energy I use in my home	15%	<	24%
Someone in my household is dependent on energy for health reasons	27%	>	21%
I am often the first among family and friends to purchase new appliances	26%	>	22%

Significant differences at 95% confidence indicated by < and >

Energy-Related Behaviors

- Energy Usage: High usage customers (in both temperate and non-temperate climate zones) are higher users of electricity across all times of year (based on quarterly usage), suggesting that high usage is not predominantly climate-related. In fact, high users' summer-winter ratio (summer energy usage divided by winter energy use) is 1.36 compared to 1.42 for the remaining 80% of the low income population (the lower 4 quintiles). High users load is heavy year-round and their summer AC usage is proportionally even a little lower than among the lower usage groups. Most differences between temperate and non-temperate high users are also found among lower usage groups – so these differences are a function of other "non-climate or geography-based" usage variables.

Table 23: High Usage Profile: Electricity Usage

Electricity Usage (average monthly kWh from SCE data)		**High Users**		**Low/Moderate Users**
		(n=445)		**(n=1,277)**
Winter	(Q1 2009)	908	>	358
Spring	(Q2 2009)	840	>	334
Summer	(Q3 2009)	1234	>	507
Fall	(Q4 2009)	912	>	365
Overall	(2009)	925	>	386

Significant differences at 95% confidence indicated by < and >

- Behaviors Within the Home: Consistent with their self-described lack of knowledge, high users are less likely to follow energy efficient practices at home: turning off lights and TVs, powering down computers, unplugging chargers, and using fans on hot days. This suggests that high usage is not just because of their environment or the physical condition of their home and appliances. It is also about their behaviors. Across high usage households, it reflects a lack of understanding of what to do, a lack of cooperation among household members, or it can be "more trouble" to act in ways that would reduce energy use (e.g., turning off TV's that are not in use or only washing full loads).

Table 24: High Usage Profile: Energy Efficient Behaviors

"How often do you …" (% who "always" do this)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
Turn off lights	73%	<	79%
Power down computer	61%	<	68%
Unplug chargers	54%		59%
Turn off TV	69%	<	76%
Run appliances full	77%		74%
Use fans on hot days	40%	<	45%
Raise/lower thermostat	33%		32%
Clothing for warmth	59%		59%
Close ducts	51%		52%
Lower hot water temp	29%		31%

Significant differences at 95% confidence indicated by < and >

- Energy Bill Payment Events. High usage customers have more bill payment problems. This is likely a reflection of their relatively higher usage as well as a number of different things related to energy attitudes and behaviors. In part, this group is less "conscious" and less vigilant about saving energy, with "comfort" as the dominant motivator relative to "saving" as is the case with other low income customers. In addition, this group includes larger households that have other demands for their resources as well, including the needs of children and household members with disabilities.

Table 25: High Usage Profile: Bill Payment Events

Bill Payment Events (means – from 3 years of SCE data)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
Number of payment-related contacts with SCE	2.42	>	0.74
Number of overdue fees	0.54	>	0.31
Number of disconnects	0.24	>	0.13

Significant differences at 95% confidence indicated by < and >

- Participation in Utility Programs. High users tend to have higher participation in the Summer Discount Plan, perhaps because they are more likely to have central AC and because they are motivated to try to lower their energy bill. Non-temperate high users also have higher participation in ARP and EE Rebates – probably related to their higher ownership rates for appliances.

Table 26: High Usage Profile: EE Program Participation[6] (Survey)

"Which of the following programs have you participated in?" (if ever participated)	**High Users**		**Low/Moderate Users**
	(n=205)		**(n=587)**
Appliance Recycling	44%	>	37%
EE Rebates	38%	>	27%
Home Energy Surveys	34%	>	27%
Summer Discount Plan	34%	>	24%
Energy Management Assistance (EMA/LIEE)	36%	>	32%

Significant differences at 95% confidence indicated by < and >

[6] EMA/LIEE participation includes customers who say they have participated in the LIEE program at any time in the past. The data do not reflect participant customer data from a specified program year.

Information Source Preferences

- Probably related to their demographics and socio-economics (higher income levels compared to lower usage groups), high usage low income customers more likely to be online and to want to interact with SCE online (they are more likely to want information from SCE through the Internet and email, and they are more likely to be "My Account" users).

Table 27: High Usage Profile: Preferred Information Sources

"What is the best way for SCE to get information to you about saving energy or about their programs?" (multiple responses)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
SCE Separate Mail	69%		68%
SCE Bill or Inserts	37%	<	42%
Phone	17%		19%
Internet/Website	15%	>	11%
News: TV/Radio	5%		7%
Email	11%	>	6%
SCE Employees/In-Person	5%		5%
SCE Advertising: TV/Radio	4%		4%
SCE Website	4%		3%
Newspapers	2%		2%
Word of Mouth	2%		2%
Community/Assistance Org.	<1%		1%
Contractors	<1%		<1%
Stores/Retailers	-		<1%
None	1%		1%

Significant differences at 95% confidence indicated by < and >

LIEE Awareness and Past Participation

- High user's awareness and participation in the LIEE program also has implications. High users are less likely to have participated in LIEE, and those who have not are less likely to know about it. Regarding reasons for not participating (among those aware of it who have not participated), higher users are more likely to think they don't need it.

Table 28: High Usage Profile: Program Participation (SCE data)

EE Programs Participated In (SCE data)	**High Users**		**Low/Moderate Users**
	(n=445)		**(n=1,277)**
LIEE Participant	8%	<	12%
My Account	31%	>	22%
Medical Baseline	7%		5%
Level Payment Plan	12%	>	7%

Significant differences at 95% confidence indicated by < and >

Table 29: High Usage Profile: Heard of Energy Management Assistance (EMA/LIEE)

"Have you heard of this 'emma' program that includes weatherstripping, insulation, refrigerators, and such?" (among non-participants)	**High Users**		**Low/Moderate Users**
	(n=286)		**(n=863)**
Yes	34%	<	39%
No	63%	>	58%
Don't know	3%		2%

Significant differences at 95% confidence indicated by < and >

Table 30: High Usage Profile: Reasons for Not Participating in EMA/LIEE

"Which of the following are reasons you've not signed up for the 'emma' program?" (among those aware who have not participated)	**High Users**		**Low/Moderate Users**
	(n=41)		**(n=125)**
Not sure how to sign up	41%		45%
Don't think you would qualify	38%		39%
Don't think your home needs it	45%	>*	32%
Someone else need it more than you do	39%		37%
Doubt the workmanship	14%		17%
Doubt appliance quality	14%		14%
Some other reason	19%		19%

*Difference is significant at 85% confidence – small sample size

- These results suggest that high users are less likely to respond to LIEE marketing. It is possible that high users, with their larger homes and somewhat higher incomes, do not consider themselves qualified for the program or they don't think they need it. It is also possible that the program does not address the root causes of particularly high energy consumption for some high users – which is related to having lots of appliances and electronics, lots of people in the household using these things, and a lack of cooperation (and control) over wasteful practices.

Temperate vs. Non-Temperate High Users

An initial hypothesis was that temperate climate high users had different characteristics and/or needs from non-temperate high users regarding the causes of their higher electricity usage – based on the premise that while AC load drives high usage in hot inland areas, other factors must account for high usage in coastal areas.

Significant difference testing between low income high electricity users in temperate and non-temperate climate zones across the variables from the dataset and telephone survey found that there are some differences between the two groups worth discussion. Temperate high users do have lower overall electricity usage than high users in non-temperate areas across all four quarters, and this difference is greatest during the summer Quarter. These differences are likely a result of several geographic-based factors (see Appendices A and B for detailed data):

- Differences in housing stock. Temperate areas have older, smaller homes, and more multi-family homes so more renters.
- Household composition. Temperate areas have older householders with smaller household sizes.
- AC usage. Temperate high users are less likely to have central AC or evaporative (swamp) coolers, and are more likely to have fans and window AC units.
- Appliances. Temperate high users' homes, which are smaller, older and more likely to be occupied by renters, have fewer appliances.
- Electronics. Temperate high users, with smaller household sizes, have fewer TVs and cable/DVR boxes.
- Environmentalism. Temperate high users are more motivated by "improving the environment," while non-temperate high users are more motivated by being "comfortable and productive."
- Obstacles to reducing electricity use. Temperate high users, with smaller household sizes, are less likely to say that cooperation from others is an obstacle (although it is still the number one obstacle for them), and they are less likely to mention the need for heating or cooling as an obstacle. Temperate high users are more likely to mention that they "don't know" what their main obstacles to reducing electricity use are.
- EE behaviors. Temperate high users are more likely to use fans (since they have them and fans are more effective in temperate areas for cooling) and to unplug chargers, yet they are less likely to lower their hot water thermostat temperature. Temperate high users (with AC) tend to set their thermostats lower during the summertime as well, perhaps to achieve a greater difference between inside and outside temperature to increase their perception of cooling.
- EE program participation. Temperate high users are less likely to have participated in an SCE energy efficiency program of any type, including the LIEE program. Lower energy usage overall, and commensurately lower bills, likely reduces interest in measures to save energy. Among those who have participated in LIEE, temperate high users are more likely to mention doing so for

the light bulbs (perhaps because other measures are not so compelling to those in temperate climate areas).

However, these differences are not nearly as substantial as the differences across these same variables between the high users as a group overall compared to the moderate and low usage groups. In other words, high users in temperate and non-temperate climate zones are much more similar than they are different from each other when examined in the context of all electricity usage groups.

A main implication is that marketing strategies and program features can be relatively consistent for all high users no matter where or in which climate zone they are located – with a few possible exceptions:

- Central AC measures offered through the LIEE program should find more candidates in non-temperate areas, while window AC replacement (offered through the LIEE program) should find more candidates in temperate areas.
- An environmental message might be more effective in temperate areas.
- Control devices might have somewhat lesser appeal or impact in temperate areas (since these customers have smaller households and are less likely to need cooperation from others).

IV. HIGH USAGE NEEDS ASSESSMENT: SUBGROUPS AMONG HIGH USERS

The research demonstrates that while there is an overall profile of the high usage customers, high usage customers can be further distilled into a handful of subgroups that are differentiated by a number of the variables previously reviewed. The generalized characteristics of high users apply to *most* high users but certainly not all, so identifying unique subgroups provides deeper insight into the reasons for high usage and potential remedies for the LIEE program.

Methodology

Five specific groups were identified that account for a majority of the high usage population. A sixth group is "undetermined." The main differentiating characteristics of these subgroups were first identified from the in-home interviews – based on interviewer observations and discussions with the customer. Characteristics most prominent in distinguishing between the in-home qualitative respondents included demographic and home information, observed and stated behaviors, and attitudes and beliefs.

Distinguishing demographic and home characteristics include:

- Number of people in the household
- Age of the householder
- Someone in the household has a medically-based and/or age-based need for cooling, or is house-bound so is always there, etc.
- Age and condition of the home, and without the resources and/or ability (such as renters) to improve the physical condition
- The number of energy-consuming items in the household (but no specific items stood out)

Distinguishing observed and stated behaviors are:

- Leaving electronics (e.g., TVs) and appliances (e.g., air conditioning) on for extended periods vs. diligently turning things off

Distinguishing attitudes and beliefs that are major barriers to reducing usage include:

- Gaining cooperation from others in the household
- Condition of the home
- Not interested in the effort to conserve or not wanting to give up the benefits of electricity usage
- Lack of knowledge about what to do to reduce energy usage, or lack of understanding the impact of usage behaviors on the bill

In sum, these characteristics assisted to define the five subgroups. Moreover, since these issues were included in the telephone survey, parameters for these key variables

could be used to place the high usage survey sample into the five subgroups. Each subgroup was then profiled across all the variables in the quantitative survey and from the SCE dataset (that included billing, geographic, and census data), and the subgroup proportions in the low income population were estimated. There is some overlap regarding segment membership (some customers can belong to more than one segment), so the total percentage exceeds 100. The subgroups and population proportions (among high users) are shown below (Table 31).

Table 31: High Usage Customer Subgroups

Subgroups	Percent of High User Population	Sample Size
		(n=445)
Declining Health / Wealth	27%	120
Divided Household	26%	117
Hostage to Domicile	24%	108
Concerned But Uninformed	19%	83
Merry Users	13%	57
Undetermined	26%	118

Subgroup descriptions that follow are based primarily on the phone survey and dataset data, and secondarily on the in-home interviews and observational data. Recommendations for each subgroup are also provided.

Declining Health/Wealth (27% of the high user population)

Current energy consumption for this subgroup is tied to changes in the health and/or economic situation of someone in the household.

- A high proportion say that someone with a disability lives there, and they have the highest proportion of all the subgroups on Medical Baseline (a rate-based program for customers with a medical need for higher electricity usage). Declining wealth can be attributed to retirement, or related to the disability.

- Demographically, they tend to be older, to have lived in their home longer, and to have the lowest income. They have the smallest households (in terms of number of people) and the fewest electronics, but the highest electricity usage of all the subgroups, too.

- They believe they try hard to save energy, and that they are successful, but they feel energy dependent – suggesting that they conserve in areas where they can but are constrained either by their medical needs or by characteristics of their home that are no longer affordable (e.g., a swimming pool, more rooms or square footage). They are the least likely subgroup to think they could reduce their energy use further.

- Their efforts are evidenced by the fact that they are more likely to participate in other utility energy efficiency programs. Those who know about the LIEE program do tend to participate.

- Main barriers to reducing energy use are the need to maintain heating or cooling, medical needs of someone in the home, and the cost of repairs or new appliances.

Table 32: Declining Health/Wealth Supporting Data

	Declining Health/Wealth		High Users Total
Demographics	(n=120)		(n=445)
Someone with disability living in home	88%	>	38%
Household income less than $33,000	67%	>	63%
Age (mean)	59.4	>	51.9
Number living in the home (mean)	3.6	<	4.3
Electricity Usage (SCE data)			
Quarterly usage (mean)	1044	>	975
Efforts to Save (1 to 5 scale)			
Always try to save (% rating 4-5)	89%	>	78%
Have been successful (% rating 4-5)	65%	>	54%
Energy Efficiency Program Participation			
Appliance Recycling Program (ARP)	28%	>	21%
EE Rebates	24%	>	17%
Home Energy Efficiency Surveys (HEES)	24%	>	16%
Summer Discount Plan (SDP; AC Cycling)	22%	>	16%
Energy Management Assistance (EMA/LIEE)	21%	>	17%
Obstacles to Saving Energy			
Maintain comfort / heating / cooling	12%	>	9%
Cost of new appliances	12%	>	9%
Medical needs	10%	>	3%

Significant differences at 95% confidence indicated by < and >

From the qualitative in-home visits, example verbatim comments and interviewer comments include:

Table 33: Declining Health/Wealth Supporting Qualitative

	Qualitative Comments
Respondent	"My challenge is how to afford energy… I'm on fixed income… I can't tolerate hot temperatures, especially when trying to sleep [because of my sleep apnea]… I need to use the A/C."
Observer	Many of the respondent's consumer electronics are old, pre-Energy Star era devices, including a older plasma TV, laser disc player, turntable, stereo receiver and amplifier.
Respondent	"The energy bill is high. I'm trying to cut down. The pool is a big energy use….I'm recovering from a heart attack and my wife is not working. I need the A/C because of my heart attack. [The heat makes it race.]"

Observer	The home is two-stories, fully appointed, with a pool and entertainment area outside, though only two people live in it. To cool both levels, the couple uses the A/C heavily.

How does the current LIEE program meet their needs?

The LIEE program does address the needs of some of these households (particularly those that overlap with the "Hostage to Domicile" subgroup) – in so far as weatherization can reduce their heating and cooling demands, and/or replacement refrigerators can be provided.

Recommendations

Ensuring that these customers are aware of and participate in other relevant utility programs such as "medical baseline" may be beneficial. A "prepare-for-retirement" message to encourage customers to make their homes more energy efficient *before* they reach this stage of declining health/wealth could also be considered. Program marketing might work through county health organizations, which are routinely in contact and even in the homes of this low income group, in order to specifically identify more of these households. To enhance the current LIEE program offering, an implementation team that specializes in medically-dependent households might identify other energy-related needs that the household's specific medical situation could benefit from.

Divided Household (26% of the high user population)

This sub-group is characterized most by larger households with members who act independently, and sometimes contrarily, with regard to their attitudes and behaviors related to energy use. For example, each person might watch the same show but on their own TV, or the bill payer might be the only one in the household who is takes actions to save energy. Characteristics of these households include:

- Cooperation from others in the household is the number one stated barrier to reducing electricity usage, and is a defining characteristic – contributing to their low frequency of energy efficient behaviors (second only to Merry Users), and a reason why they believe they try hard to conserve but feel they have less success.

- This group includes households with more appliances and electronics, so inherently need to be more diligent to keep their energy consumption in check.

- Demographically, they are younger, in larger households with children or other adults in addition to the head of household, a high proportion are Spanish-speakers, and they are more likely to be renters.

- They have a higher incidence of disconnects, likely a result of having many other demands for their limited resources (because of the number of people in the household).

Table 34: Divided Household Supporting Data

	Divided Household		High Users Total
Obstacles to Save Energy	(n=117)		(n=445)
Cooperation of others in the home	100%	>	29
Appliances and Electronics			
Number of appliances (mean)	5.1	>	4.8
Number of electronics (mean)	9.0	>	7.7
Demographics			
Age (mean)	47.9	<	51.9
Number living in the home (mean)	5.3	>	4.3
Renters	46%	>	38%
Energy Efficient Behaviors			
Turn off lights	62%	<	73%
Turn off TV	62%	<	69%
Unplug chargers when not home	42%	<	54%
Close heating / cooling ducts	42%	<	51%
Payment History			
Disconnects	0.29	>	0.24

Significant differences at 95% confidence indicated by < and >

From the qualitative in-home visits, example verbatim comments and interviewer comments include:

Table 35: Divided Household Supporting Qualitative

	Qualitative Comments
Respondent	"The house uses above average energy because of the borders…The more people, the more energy is used." "The Internet [computer and Internet connection] is on all the time for them."
Observer	Of seven household members, five are boarders.
Respondent	"We use a lot of energy. Most of our appliances are electric. I don't like using a lot—it's a necessary evil…We have three household members…and we use TVs and space heaters [in our rooms]."
Respondent	"The renters don't have much activity. They watch TV in their rooms….To achieve energy efficiency, "you must get the [boarders] to help."
Respondent	"Since we got teenagers with their own TVs, Ipods, video games and PlayStations, they leave things on a lot…The microwave is used a lot. I wish the kids would make a sandwich and not just heat frozen food."
Observer	This appears to be a highly dysfunctional family with each person using energy independently.

How does the current LIEE program meet their needs?

The existing LIEE program, which offers weatherization, efficient lighting, and new refrigerators along with some educational information, does meet the needs of this subgroup, but with opportunities for enhancement.

Recommendations

While there may be a number of things that can be addressed and modified in the current program to better meet the needs of these customers, one aspect in particular stands out. Customers from this group complain that they cannot get cooperation from other members of the family or household, so there may be creative and innovative ways to address this issue. For example, consider creating targeted educational and marketing materials that are written to or for the children and teenagers in the household in a manner and format that *they* identify with. Provide tips and strategies for the bill-payers (aka parents) that might get uncooperative teenagers, roommates, or boarders on board. One customer gave an example of how she "incentivized" her teenager to be more energy efficient in the home by telling the teen that every time she found that the TV was left on she would take $5 off what she agreed to pay for her daughter's cell phone bill. This creative mom applied similar strategies to her other children to improve cooperation and thereby reduce her energy bill.

The program may also be able to assist this group with improving cooperation through increased bill payer control – smart power strips and "parental control" devices (e.g., programmable thermostats that require an access code) could be added to program measures. It also may be possible to create educational materials or measures that assist the other uninformed or disinterested adults in the home in reducing energy use.

Hostage to Domicile (24% of the high user population)

The home's structure, condition, and/or appliances are factors that compel the household to use significant electricity in the ways they now do.

- Demographically, they have the second longest tenure in residence, and they are the second oldest subgroup by age and the second lowest subgroup by income – all after "Declining Health/Wealth."

- Not surprisingly, they are in the oldest homes, they have the lowest proportion of energy efficient features in their home, and the oldest refrigerators and air conditioners.

- Likewise, main barriers to reducing energy use are the condition, construction, and age of their home, as well as the high cost of repairs and new appliances.

- They have average participation but the lowest awareness among non-participants of the LIEE program – suggesting that those who know about LIEE tend to participate, but they are less likely to know about it.

Table 36: Hostage to Domicile Supporting Data

	Hostage to Domicile		High Users Total
Demographics	**(n=108)**		**(n=445)**
Household income less than $33,000	71%		63%
Age (mean)	53.2		51.9
Years in home (mean)	15.0		13.8
Home Characteristics			
Year home was built (mean)	1964	<	1970
Age of refrigerator (mean)	8.7	>	6.4
Age of AC 10+ years old	40%	>	27%
Obstacles to Saving Energy			
Condition of home	44%	>	11%
Cost of new appliances	13%	>	9%
Age of home	15%	>	4%
Construction of home	10%	>	2%
Energy Efficiency Program Participation			
Appliance Recycling Program (ARP)	18%		21%
Energy Management Assistance (EMA/LIEE)	15%		17%
EE Rebates	11%		17%
Summer Discount Plan (SDP; AC Cycling)	12%		16%
Aware of EMA/LIEE	**(n=73)**		**(n=286)**
Yes	29%		34%

Significant differences at 95% confidence indicated by < and >

From the qualitative in-home visits, example verbatim comments and interviewer comments include:

Table 37: Hostage to Domicile Supporting Qualitative

	Qualitative Comments
Respondent	"We turn off the lights, the computer… the TV to help save energy. I read energy labels before buying electronics. But refrigerator and freezer (in the kitchen) are old and probably inefficient."
Observer	The apartment is drafty and has few electronic devices. At least one of two residents is in the home 95% of the time. To keep warm during the day they spend time in the kitchen, which doubles as an "office." They let their large dog outside several times per day, losing significant kitchen heat each time the door is opened.
Respondent	"I'm trapped. There's not much I can do. There's energy being wasted."
Observer	The all-electric kitchen, the drafty apartment and the weak central heat are beyond the renter's control to change or improve. She does not appear able to afford newer, more efficient appliances.
Respondent	"Aging appliances and A/C are the biggest energy-related issues facing

	me personally. Financially, it's not a good time…The insulation and weatherizing are bad."
Observer	Customer says he's facing a layoff and can't afford more efficient appliances. He doesn't want to jeopardize his landlord relationship by asking for upgrades.
Respondent	"The A/C is on 24-7 because the house doesn't cool down. The insulation is inadequate… The fridge is old."
Observer	The homeowners intend to divorce, but neither wants to invest more in the house because the other will benefit. So, they accept the house and its appliances as they are.

How does the current LIEE program meet their needs?

At its core, the low income weatherization programs were designed for this customer group, so by and large, the program meets the primary energy-related needs of this group.

Recommendations

While for the most part the program meets the needs of these customers, increasing the relevance and knowledge of what can be done (from a behavioral standpoint) would be beneficial for this group as well, as is the case with many of the "high usage customers." Moreover, since this group shows only "average" LIEE program participation rates relative to the other groups, it would be advantageous to increase customer awareness of the program and target these "ideally suited" customers. One caveat, however, is that SCE, as an electric-only utility, is limited in the weatherization measures that can be provided, so these customers might be better candidates for the regional gas utilities who provide services for the gas/heating related measures.

Concerned But Uninformed (19% of the high user population)

These households seem to desire greater efficiency using electricity, but lack knowledge, guidance, or information. They are very much aware of their energy usage and might even believe that they are energy conservers, but they are not conservation minded in the sense that they do not really know what they can do to reduce their usage.

- Demographically, this subgroup is younger and less educated.
- They are more likely to be renters and to have the shortest tenure in their residence.
- They have a higher incidence of billing related contacts with SCE – suggesting greater energy burden as well.

- Main barriers to reducing energy use are cooperation from others, and they don't know what to do.

Table 38: Concerned But Uninformed Supporting Data

	Concerned But Uninformed		High Users Total
Demographics	(n=83)		(n=445)
Age (mean)	47.1	<	51.9
College graduate or higher	18%		23%
Years in home (mean)	10.3	<	13.8
Home Characteristics			
Renters	52%	>	38%
Billing Issues (SCE data)			
Number of disconnects (mean)	0.27		0.24
Number of billing contacts (mean)	25	>	21
Obstacles to Saving Energy			
Cooperation from others in home	40%	>	29%
Don't know what to do	11%	>	2%

Significant differences at 95% confidence indicated by < and >

From the qualitative in-home visits, example verbatim comments and interviewer comments include:

Table 39: Concerned But Uninformed Supporting Qualitative

	Qualitative Comments
Respondent	"I turn off lights and check on the others to turn off lights." Strongly agrees: "I am very knowledgeable about things I can do around my home to save energy."
Observer	Because the apartment has minimal lighting there are relatively few bulbs to turn out. But it does have five tube/plasma TVs and two game consoles. Two TVs were on during the visit with no one watching.
Respondent	"We all need to do our bit to save energy…I don't think we have any energy issues. We open doors to get a breeze and we don't have A/C."
Observer	The home has a spa and a large number of incandescent light fixtures and bulbs.
Respondent	"December is the most expensive time of the year, so I decided not to put up Christmas lights…We use more than my sister, who lives two blocks away…"The kids watch TV [in their rooms] while I cook."
Observer	All household members appear to make heavy use of the TV and attached consumer electronics, which often are left on.
Respondent	"I'm very particular about not leaving lights on when not in the area. I've replaced old bulbs with CFLs."
Observer	Many incandescent bulbs have been replaced with CFLs. Fear of gas asphyxiation has led to the habit of always keeping a window open, requiring supplemental heating & cooling. The array of consumer electronics and up-sized appliances probably draw above average amounts of power.

How does the current LIEE program meet their needs?

This group warrants more attention. Similar to the "Divided Household" subgroup, existing LIEE program measures are likely to have minimal impact with the "Concerned But Uninformed."

Recommendations

Enhanced education may be considered. In particular, educational materials that are relevant and especially meaningful to the needs of this group may assist in generating greater "concern," greater understanding about "cause and effect" (e.g., leaving a TV on for 6 hours costs $x.xx), increased personal action, and ultimately savings on energy bills and reductions in energy usage. Interestingly, while it may seem futile to attempt to move the unconcerned to concerned, some "unconcerned" customers reiterated that while they were not very concerned about doing much to save energy, it was in part because they did not realize the effect it could have on their savings and that it was not going to significantly impair their lifestyle to make relevant efficiency changes.

This group may also benefit from the addition of measures that are more appropriate for this more transient renter population. Portable or plug-in energy control devices (e.g., timers, smart power strips) that don't require landlord approval and CFL's with the ability to receive replacement CFLs (when the original bulbs burn out) are two ideas.

Merry Users (13% of the high user population)

The household does not pay attention to the amount of energy used, and doesn't seem to care.

- The most affluent and educated subgroup, they are the most likely to be living in a single-family home and to reside in a temperate climate zone. As such, they are the least likely to be motivated to save money on their energy bill.

- They are the least likely to try hard to save energy, and least likely to think they've been successful. They pay relatively less attention to their energy usage and tend to do less to conserve, evidenced by the lowest frequency of energy efficient behaviors.

- Consistent with their apparent lack of interest in their energy use, they tend to have low participation in most SCE programs (including LIEE). Their average participation in energy efficiency (e.g., appliance) rebates can be attributed to their more affluent circumstances.

Table 40: Merry Users Supporting Data

	Merry Users		High Users Total
Demographics	(n=57)		(n=445)
College graduate or higher	32%		23%
Household income $53,000 or more	31%	>	12%
Home Characteristics			
Single family home	78%		74%
Temperate climate zone	63%		55%
Efficiency Effort			
Number of EE behaviors endorsed as "always"	3.9		5.2
Effort to save energy in home (% 4-5 rating)	56%	<	78%
Have been successful (% 4-5 rating)	30%	<	54%
Energy Efficiency Program Participation			
Appliance Recycling Program (ARP)	14%		21%
Energy Management Assistance (EMA/LIEE)	11%		17%
EE Rebates	19%		17%
Summer Discount Plan (SDP; AC Cycling)	13%		16%
Home Energy Efficiency Surveys (HEES)	10%		16%

Significant differences at 95% confidence indicated by < and >

From the qualitative in-home visits, example verbatim comments and interviewer comments include:

Table 41: Merry Users Supporting Qualitative

	Qualitative Comments
Respondent	"Neighbors and friends have larger houses and somewhat higher energy bills, so my bill is appropriate...We use the TVs and DVDs a lot, especially in the evening …and sometimes leave them on when not in the room."
Observer	The garage contained a 2nd refrigerator, stereo and a compressor that was used occasionally. The main TV is plasma and had surround sound; each of the four bedroom TVs is used daily, two of which were tube style.
Respondent	"I look at the energy bills, but not too close. The bills are high, over what you'd like to spend." "Sometime my mother uses the TV to fall asleep… The family uses the TV and PlayStation a lot…The electronics are on about 12 – 13 hours a day." "They don't teach how to save energy."
Respondent	"I don't give energy use a second thought. I think of my grand kids. I leave it on for my puppies…when I'm gone." She somewhat agrees that "having the benefits I get from using energy is more important than saving energy."

Observer	Home has a large number of incandescent bulbs and six TVs, two with game consoles.
Respondent	"My needs are more important than conserving. If I need it now, I'm going to use it…Why should I have to wear a sweater in my house? When my kids visit, I want the house warm…We use the clothes washer and dryer daily."
Observer	The home has six TVs, including an old, large rear projection-type with PlayStation. A mounted LED/LCD TV remained on during the site visit.

How does the current LIEE program meet their needs?

The current program can do little to address the crux of the issues with this group, since their particularly high usage is driven primarily by attitude and behavioral choices.

Recommendations

While this group may be considered a relatively lower priority in terms of a target group, to the extent that the program can enhance the educational and marketing materials to increase relevance, awareness and knowledge it may be possible to interest these customers in making more energy efficient choices that are beneficial to them. Again, we found in the focus groups that sometimes the "Merry Users" or those who seemed unconcerned could be moved to a place of interest and concern (and behavior change) if given information in a way that was relevant and meaningful to them. Since they overlap with "Divided Households," some "Merry Users" might be served through the recommendations for this other subgroup. Marketing will need to break through their lack of interest or motivation – perhaps through tie-ins with home improvement or appliance retailers.

V. CONCLUSIONS

Contrary to what was expected we did not find that it was a poorly functioning refrigerator or air conditioner that was the main culprit or reason for unusually high usage in low income households. Rather, we found that a variety of different factors contribute to high usage. These include behavioral, knowledge or attitude-based factors, as well as circumstantial factors related to the household or home itself. By and large, high usage is driven by having physically bigger homes, more people in the homes, more appliances and electronics, and more challenges associated with controlling energy use.

In addition, high usage households are characterized by having less concern and less knowledge with regard to implementing more energy efficiency practices – which can include daily behaviors such as turning off lights and TVs or making decisions regarding new appliance purchases or getting rid of ill-performing or secondary appliances and electronics. Financially speaking, while in many cases these households struggle to pay their bills, they also tend to skew higher on income. In terms of general attitudes, they tend to feel it is "their right" to be able to use the energy they want and need, and as such as less likely to make personal "sacrifices" in service of comfort, as is often the case with the lower usage counterparts. In other words, the idea of reducing their electricity usage by doing without is a turn-off.

Three main conclusions or "needs" regarding reducing their electricity usage emerged. High usage low income customers may benefit from:

(1) More control since they have more people, more appliances and electronics, and more space (for heating and cooling).

(2) More education about what they can do to manage and reduce their energy use.

(3) Greater reach into the household so that more household members can be informed.

The research identified five main subgroups of low income high usage customers. These include: "Declining Health/Wealth," "Divided Household," "Hostage to Domicile," "Concerned but Uninformed," and "Merry Users." The existing LIEE program meets the needs of some, but not all, of the subgroups.

While the research did not identify a particular "measure" that would assist these customers in reducing their consumption, a variety of educational, marketing, and lifestyle-specific program enhancements may assist these customers in reducing their energy bills and overall usage. In addition, the program could consider measures such as power strips or other technology-based controls that can assist these households in managing or monitoring their energy usage.

Recommendations

While the research did not identify a single particular "measure" we could recommend that would assist these customers in reducing their consumption, we instead recommend a variety of more educational, marketing, and lifestyle-specific program enhancements that may assist these customers in reducing their energy bills and overall usage. In addition, the program could consider measures such as power strips or other technology-based controls that can assist these households in managing or monitoring their energy usage.

Specific recommendations for program enhancements include:

(1) Increase focus on education delivery:
   a. Develop and target educational materials at other members of the household, such as children and roommates.
   b. Customers suggested reminders, helpful hints, checklists, and how much energy things use. Highlight the savings potential from specific actions to generate greater "concern" and increased personal action.

(2) Enhance cooperation within a household through increased bill payer control, for example, smart power strips and "parental control" devices can be added to program measures.

(3) For medically-dependent households, identify any unique energy-related needs that their specific medical situations require that might be addressed through program measures or even other programs.

(4) Add measures that are more appropriate for the more transient renter population that do not require landlord approval, such as portable or plug-in energy control devices and replacement CFLs.

Program marketing should speak more directly to these subgroups.

(1) Each subgroup represents a unique scenario that can be the focus of different creative executions. For example:
   - Messaging targeted to "Divided Households" can recognize that getting cooperation from others in the household is a major barrier.
   - Outreach aimed at "Declining Health/Wealth" households could include a prepare-for-retirement message to encourage energy efficiency improvements before they reach the stage of declining health and wealth.
   - Messages for the "Concerned But Uninformed" and the "Merry Users" could include factual information about the cost of leaving TVs or other electronics on, or the cost of running a Central AC when no one is home.

(2) Tactics to reach these different subgroups can also be employed. For example:

a. Work through county health organizations to reach “Declining Health/Wealth.”
b. Work through schools for education and distribution of portable program measures to reach “Divided Households,” “Concerned But Uninformed,” and “Merry Users.”

Appendix A

Database Analyses Results by Quintiles

Table A1. DATABASE DATA: ELECTRICITY USAGE, PAYMENTS

High Usage customers (in temperate and non-temperate zones) are higher users of electricity across all times of year (quarters), and have more SCE bill payment problems.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Energy Usage *(SCE)*									
Winter (Q1 2009)	451	838	999	908	358	554	424	302	181
Spring (Q2 2009)	421	745	962	840	334	523	383	287	173
Summer (Q3 2009)	632	965	1,562	1,234	507	822	592	435	241
Fall (Q4 2009)	455	828	1014	912	365	576	431	324	190
Overall (2009)	483	841	1140	925	386	622	458	339	194
Payments *(SCE)*									
Nr. Payment Contacts	0.98	2.81	1.93	2.42	0.74	1.33	0.81	0.63	0.34
Nr. All Contacts w/SCE	13.09	17.78	25.06	20.96	11.59	16.31	13.05	10.29	8.05
Mean SCE Credit Score	806	771	747	760	817	787	812	824	836
Number Overdue Fees	0.36	0.54	0.53	0.54	0.31	0.50	0.40	0.32	0.09
Number of Disconnects	0.15	0.24	0.23	0.24	0.13	0.25	0.11	0.15	0.04
Overall Payment Problems		*High*	*High*	*High*	*Moderate*	*High*	*Moderate*	*Low*	*Very Low*

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table A2. DATABASE DATA: HOME CHARACTERISTICS

Temperate High Users are in older, smaller homes (and more likely in multi-family), but this is a function of their coastal location.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Dwelling Characteristics *(SCE and Census)*									
Number of Rooms (census)	4.6	4.7	5.3	4.9	4.5	4.8	4.6	4.4	4.2
Year Built (census)	1970	1964	1979	1970	1970	1971	1970	1971	1969
Year of Service Acct (SCE)	2002	2000	2002	2001	2002	2002	2002	2003	2003
Housing Type *(Census)*									
Single Family	45%	66%	52%	60%	42%	53%	48%	39%	31%
Tract	18%	15%	34%	23%	17%	23%	21%	19%	9%
Multiple	32%	19%	6%	13%	36%	19%	24%	37%	57%
Mobile	5%	1%	7%	4%	5%	5%	6%	5%	3%
All Others	<1%	-	1%	<1%	<1%	-	-	-	<1%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table A3. DATABASE DATA: HOME CHARACTERISTICS

High users (temperate and non-temperate) are less likely to be renters, and they move less often.

		High Users			*Lower Users*				
	Population Total *(n=1,536)*	***Top Quintile Temperate*** *(n=245)*	***Top Quint. Non-Temperate*** *(n=199)*	***Top Quintile Total*** *(n=445)*	***Lower Quintiles Total*** *(n=1277)*	***4*** *(n=267)*	***3*** *(n=322)*	***2*** *(n=320)*	***1*** *(n=368)*
Geographic *(Census)*									
Percent Renters	46%	40%	31%	36%	48%	40%	45%	48%	56%
People per Sq. Mile	9,583	10,399	3,614	7,387	10,664	8,849	9,941	10,212	10,933
Not Moved (SCE)	65%	81%	65%	74%	63%	69%	69%	61%	56%
Households <175% Poverty									
Rural	22%	6%	45%	24%	22%	23%	22%	22%	21%
Suburban	7%	3%	9%	6%	7%	7%	7%	4%	8%
Urban	70%	87%	45%	68%	70%	69%	69%	71%	70%
Climate Zones *(SCE)**		* Usage Quintiles are defined within climate zones							
Extreme Coastal	9%	16%	-	9%	9%	8%	7%	11%	11%
Inland Coastal	23%	44%	-	24%	23%	22%	26%	20%	24%
Inland Coastal Valleys	18%	37%	-	20%	18%	18%	19%	16%	17%
Inland Valleys	23%	-	48%	21%	23%	24%	25%	23%	20%
Southern Central Valley	8%	-	16%	7%	8%	8%	5%	12%	8%
High Desert	14%	-	29%	13%	14%	16%	14%	15%	13%
Low Desert	4%	-	7%	3%	4%	4%	3%	2%	5%
High Mountains	2%	3%	-%	2%	2%	1%	2%	2%	2%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table A4. DATABASE DATA: SCE PROGRAM PARTICIPATION

High users are less likely to have participated in LIEE[7], but they are more likely to participate in My Account, the Level Payment Plan, and other EE programs (ARP, EE rebates, and HEES). LPP is targeted to customers with bill payment problems. Lower participation in LIEE is counterintuitive. The program has targeted customers with bill payment problems and those with higher usage, yet still has "underserved" the high usage population in both temperate and non-temperate areas.

		High Users				*Lower Users*			
	Population Total *(n=1,536)*	***Top Quintile Temperate*** *(n=245)*	***Top Quint. Non-Temperate*** *(n=199)*	***Top Quintile Total*** *(n=445)*	***Lower Quintiles Total*** *(n=1277)*	***4*** *(n=267)*	***3*** *(n=322)*	***2*** *(n=320)*	***1*** *(n=368)*
Programs *(SCE) (Percent Participants)*									
LIEE Participant	11%	5%	11%	8%	12%	15%	9%	11%	11%
My Account	23%	29%	33%	31%	22%	23%	22%	22%	21%
Medical Baseline	5%	6%	9%	7%	5%	7%	4%	3%	4%
Level Payment Plan	8%	9%	14%	12%	7%	10%	8%	9%	4%
Programs *(SCE) (Mean Number of Times)*									
Appliance Recycling	0.06	0.08	0.12	0.10	0.05	0.08	0.08	0.04	0.02
EE (Appliance) Rebates	0.01	0.03	0.03	0.03	0.01	0.00	0.01	0.01	0.00
Home Energy Surveys	0.02	0.01	0.07	0.04	0.02	0.03	0.03	0.01	0.01

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

[7] EMA/LIEE participation includes customers who say they have participated in the LIEE program at any time in the past. The data do not reflect participant customer data from a specified program year.

Appendix B

Telephone Survey Results by Quintiles

Table B1. DEMOGRAPHICS: AGE, GENDER, HOUSEHOLD SIZE

High users are middle aged, and are more likely to have larger household sizes – yet not with those under 18 or over 65, suggesting they are more likely to have other adults in the home.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Age (D1)									
18 to 44 years	36%	32%	34%	33%	36%	34%	35%	39%	38%
45 to 64 years	33%	41%	44%	42%	32%	38%	32%	30%	28%
65 or older	25%	22%	20%	21%	26%	21%	27%	28%	28%
Refused	5%	5%	2%	3%	5%	6%	7%	4%	6%
Gender (D8)									
Male	31%	35%	37%	36%	30%	30%	28%	29%	33%
Female	69%	65%	63%	64%	70%	70%	71%	70%	67%
Household Size (mean) (S4, S5, S6)									
Total	3.4	4.4	4.3	4.3	3.2	3.8	3.5	3.1	2.7
Under 18	2.3	2.2	2.5	2.3	2.3	2.5	2.3	2.2	2.1
65 or older	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B2. DEMOGRAPHICS: EDUCATION AND INCOME

High users have higher income and education (although over half have HHI under $33,000/year).

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Education (D2)									
High school or less	76%	75%	76%	75%	76%	78%	71%	81%	75%
Some or college grad	22%	23%	22%	23%	21%	19%	26%	17%	22%
Refused	2%	3%	1%	2%	2%	3%	3%	2%	2%
Income (D5)									
Less than $33,000	65%	53%	59%	56%	67%	61%	61%	70%	74%
$33,000 to < $53,000	14%	20%	26%	23%	12%	15%	16%	13%	6%
$53,000 or more	7%	13%	7%	10%	6%	7%	9%	2%	6%
Refused	14%	13%	9%	11%	15%	16%	15%	15%	14%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B3. DEMOGRAPHICS: ETHNICITY AND LANGUAGE SPOKEN

Temperate high users are more likely Hispanic (and less likely to speak English) while non-temperate high users are more likely white English-speakers.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Ethnicity *(D3)*									
Hispanic or Latino	44%	48%	27%	38%	45%	47%	45%	43%	46%
White or Caucasian	36%	28%	52%	39%	35%	31%	36%	40%	33%
African American	9%	11%	11%	11%	9%	9%	9%	7%	10%
Asian	3%	6%	1%	3%	3%	2%	3%	3%	3%
American Indian	1%	1%	1%	1%	1%	2%	4%	1%	1%
Other	4%	4%	6%	5%	4%	5%	4%	3%	3%
Refused	4%	2%	3%	2%	4%	5%	2%	3%	5%
Languages Spoken In Home *(D4)*									
English	70%	71%	86%	78%	69%	72%			65%
Spanish	31%	31%	16%	24%	33%	32%	33%	33%	34%
All Other	3%	4%	1%	3%	3%	1%	5%	3%	3%
Refused	2%	1%	<1%	1%	2%	2%	2%	2%	2%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B4. DEMOGRAPHICS: DISABILITIES

High users are more likely to have a disabled person living in the home, and in particular someone with a mobility disability.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Disabled Person Living in Home *(D6)*									
Yes	30%	35%	42%	38%	28%	30%	30%	28%	25%
No	67%	63%	57%	60%	68%	66%	66%	69%	72%
Refused	4%	2%	2%	2%	4%	5%	4%	3%	4%
Type of Disability *(if disabled person living in home) (D7)*									
Mobility	31%	37%	37%	37%	29%	27%	33%	23%	34%
Chronic Disease	28%	25%	22%	24%	29%	30%	25%	34%	29%
Hearing	11%	11%	14%	12%	10%	4%	16%	16%	3%
Psychological	9%	8%	8%	8%	9%	14%	8%	8%	7%
Vision	9%	7%	7%	7%	9%	16%	7%	6%	7%
Cognitive	8%	6%	10%	8%	9%	6%	7%	8%	14%
Other	1%	2%	-	1%	2%	1%	-	1%	4%
Refused	3%	4%	3%	3%	3%	2%	5%	4%	1%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B5. HOME CHARACTERISTICS: TYPE, SIZE, AGE, AND OWNERSHIP

High users (in temperate and non-temperate zones) are more likely owners in single family homes, so their homes are larger and they tend to have lived there a longer time.

		High Users			*Lower Users*				
	Population Total *(n=1,536)*	***Top Quintile Temperate*** *(n=245)*	***Top Quint. Non-Temperate*** *(n=199)*	***Top Quintile Total*** *(n=445)*	***Lower Quintiles Total*** *(n=1277)*	***4*** *(n=267)*	***3*** *(n=322)*	***2*** *(n=320)*	***1*** *(n=368)*
Type of Home *(HC1)*									
Single Family	59%	69%	80%	74%	55%	71%	64%	52%	39%
Apartment	23%	16%	5%	11%	25%	13%	14%	27%	41%
Mobile Home	6%	2%	11%	6%	6%	5%	7%	6%	5%
Duplex	5%	2%	1%	2%	5%	2%	3%	6%	7%
Condominium	4%	5%	1%	3%	5%	5%	6%	5%	4%
Townhouse or Row House	4%	5%	2%	4%	4%	2%	5%	4%	3%
Don't Know	<1%	-	<1%	<1%	<1%	-	<1%	<1%	<1%
Characteristics *(means) (HC2a, HC2b, HC4, HC5)*									
Size (square footage)	1,543	1,852	1,850	1,851	1,440	1,675	1,490	1,314	1,302
Number of bedrooms	2.6	3.0	3.3	3.1	2.5	2.9	2.7	2.3	2.0
Years lived there	12.0	15.7	11.4	13.8	11.5	11.9	12.8	11.3	10.3
Year home was built	1970	1962	1979	1970	1970	1972	1970	1971	1969
Own or Rent *(HC3)*									
Own	51%	58%	66%	61%	48%	60%	59%	45%	32%
Rent or lease	48%	42%	34%	38%	51%	39%	40%	54%	67%
Don't know	1%	-	<1%	<1%	1%	1%	1%	1%	1%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B6. HOME CHARACTERISTICS: EE FEATURES AND IMPROVEMENTS

High users (temperate and non-temperate) are *more* likely to have more of the energy efficient features shown below, and they are more likely to have installed it while living there.

		High Users				*Lower Users*			
	Population Total *(n=1,536)*	***Top Quintile Temperate*** *(n=245)*	***Top Quint. Non-Temperate*** *(n=199)*	***Top Quintile Total*** *(n=445)*	***Lower Quintiles Total*** *(n=1277)*	***4*** *(n=267)*	***3*** *(n=322)*	***2*** *(n=320)*	***1*** *(n=368)*
Energy Efficient Features *(HC6)*									
Ceiling Fan	65%	71%	80%	75%	64%	67%	68%	61%	59%
Programmable Thermostat	63%	59%	83%	70%	62%	65%	64%	60%	58%
Double Pane Windows	50%	48%	61%	54%	50%	57%	56%	44%	44%
Attic Insulation	41%	47%	56%	51%	39%	50%	43%	36%	30%
Weatherstripping	36%	38%	41%	40%	35%	34%	39%	32%	35%
Whole House Fan	23%	28%	24%	27%	22%	24%	24%	19%	21%
Motorized Attic Vents	15%	19%	21%	20%	13%	20%	14%	11%	10%
CFL's more than 50%	53%	54%	54%	54%	52%	53%	52%	53%	51%
Number of EE Features	2.9	3.1	3.7	3.4	2.8	3.2	3.1	2.6	2.6
Already Installed When Moved In *(if have feature)*				*(HC7)*					
Ceiling Fan	52%	47%	45%	46%	54%	48%	53%	56%	60%
Programmable Thermostat	67%	52%	58%	55%	70%	66%	64%	73%	75%
Double Pane Windows	61%	53%	65%	59%	62%	63%	59%	60%	66%
Attic Insulation	69%	55%	74%	65%	70%	66%	68%	71%	75%
Weatherstripping	52%	37%	54%	45%	54%	50%	54%	56%	55%
Whole House Fan	71%	68%	62%	66%	71%	64%	63%	85%	75%
Motorized Attic Vents	61%	58%	58%	58%	62%	55%	72%	62%	61%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B7. HOME CHARACTERISTICS: ALL ELECTRIC OR ELECTRIC AND GAS

High users are also more likely to have taken additional actions to make their home more energy efficient, including appliance and insulation upgrades (only the top actions are shown).

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
***Other Action Taken** (to make home more efficient) (HC11)*									
Yes	16%	14%	24%	19%	15%	19%	16%	13%	14%
No	81%	82%	73%	78%	82%	77%	81%	84%	84%
Don't know	3%	3%	3%	3%	3%	4%	4%	3%	2%
***Type of Action** (if other action taken) (HC12)*									
Refrigerator/Appliances	24%	25%	18%	21%	24%	23%	18%	26%	30%
Insulation	13%	11%	5%	8%	13%	16%	14%	10%	13%
Weather Stripping	11%	12%	7%	9%	12%	6%	22%	7%	14%
New Doors	7%	8%	5%	6%	8%	8%	5%	3%	14%
***All Electric or Electric and Gas** (HIN4)*									
All Electric	12%		10%	16%	11%	11%	12%	9%	13%
Electricity and Gas	87%		89%	83%	88%	89%	87%	91%	86%
Don't know	<1%	<1%	1%	1%	<1%	<1%	<1%	<1%	<1%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B8. HOME CHARACTERISTICS: AC

High users (temperate and non-temperate) are more likely to have central AC, and AC of any type, particularly those in non-temperate zones.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
***Air Conditioning Type** (HC9)*									
Central AC	46%	41%	76%	57%	44%	54%	48%	39%	37%
Window or Wall AC	19%	22%	11%	17%	20%	19%	19%	21%	20%
Evap or Swamp Cooler	13%	5%	24%	13%	13%	14%	12%	15%	11%
Heat Pump	3%	5%	4%	4%	3%	3%	3%	1%	3%
Fans	18%	24%	16%	20%	19%	19%	18%	17%	21%
Portable AC	4%	3%	2%	3%	4%	4%	4%	3%	4%
None	15%	19%	1%	11%	16%	12%	17%	17%	17%
Don't know	2%	1%	1%	1%	2%	1%	2%	4%	1%
***Age of Air Conditioner** (if have some type of AC) (HC10)*									
Less than 10 years	57%	57%	60%	59%	56%	59%	55%	57%	54%
10 years or older	26%	28%	27%	27%	26%	28%	30%	25%	23%
Don't know	17%	15%	13%	14%	18%	13%	15%	18%	23%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B9. APPLIANCES

High users (temperate and non-temperate) are more likely to have more appliances of all types. Interestingly, high users in non-temperate zones have more appliances than those in temperate. High users in non-temperate zones are more likely to have newer refrigerators, but high users in temperate zones have refrigerators about the same age as the rest of the low income population.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
***Appliances in the Home** (means) (HIN1)*									
Refrigerators	1.2	1.3	1.4	1.4	1.2	1.3	1.2	1.1	1.1
Standalone Freezers	0.2	0.2	0.4	0.3	0.2	0.2	0.2	0.2	0.1
Clothes Washer	0.8	0.8	1.0	0.9	0.8	0.9	0.8	0.7	0.6
Clothes Dryer	0.7	0.8	0.9	0.9	0.7	0.9	0.8	0.7	0.6
Dishwasher	0.5	0.4	0.7	0.5	0.4	0.5	0.5	0.4	0.3
Window AC	1.1	1.2	1.4	1.3	1.0	1.2	1.0	1.0	0.9
Plug-in Electric Heater	0.3	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.3
Pool or Spa	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1
Total	4.0	4.5	5.2	4.8	3.8	4.4	4.1	3.6	3.3
***Age of Primary Refrigerator** (HIN3)*									
Less than 5 years	51%	50%	58%	53%	51%	53%	47%	51%	53%
6 years or older	43%	45%	40%	42%	43%	43%	48%	43%	38%
Don't know	6%	6%	2%	4%	6%	5%	4%	6%	10%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B10. ELECTRONICS

High users (temperate and non-temperate) are also more likely to have substantially more electronics of all types – perhaps related to the number of people in the home.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
***Electronics in the Home** (means) (HIN1)*									
TV's	2.5	3.0	3.2	3.1	2.3	2.7	2.6	2.2	2.0
Desktop Computers	0.7	0.9	1.0	1.0	0.6	0.7	0.7	0.5	0.5
Laptop Computers	0.5	0.9	0.9	0.9	0.5	0.6	0.6	0.5	0.3
Cable/DVR Boxes	1.3	1.8	2.2	1.9	1.2	1.7	1.4	1.0	1.0
Video Game Console	0.5	0.8	0.9	0.8	0.5	0.6	0.5	0.5	0.4
Total	5.5	7.3	8.2	7.7	5.1	6.2	5.8	4.7	4.2

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B11. ENERGY-RELATED ATTITUDES: EFFORT MADE

High users (temperate and non-temperate) are less likely to say they always try to save and less likely to think they have been successful. High users are also more interested in being comfortable and productive, especially those in non-temperate zones. These results suggest that high users are a bit less motivated to save and they have more barriers to success when they try.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Efforts to Save *(1 to 5 scale) (AT1, AT2)*									
Always try to save (4-5)	84%	78%	78%	78%	84%	84%	83%	85%	84%
Have been successful (4-5)	66%	57%	51%	54%	68%	61%	66%	66%	75%
Importances *(means – 10 point allocation) (AT3)*									
Save money on bill	5.1	5.2	5.1	5.2	5.1	5.1	5.0	5.2	5.0
Improve environment	3.0	2.9	2.5	2.7	3.0	2.8	3.1	2.9	3.2
Comfortable and productive	2.0	2.0	2.5	2.2	2.0	2.3	1.9	2.0	1.8

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B12. ENERGY-RELATED ATTITUDES: OBSTACLES

In part related to their larger household sizes, high users (temperate and non-temperate) are more likely to mention cooperation from others as an obstacle. High users in non-temperate zones also mention heating or cooling as a barrier more often than other low income customers.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Obstacles to Saving Energy *(AT4)*									
Cooperation of others	19%	26%	33%	29%	16%	27%	16%	14%	10%
Condition of home	9%	11%	10%	11%	9%	8%	10%	10%	7%
Cost	9%	8%	11%	9%	9%	13%	8%	8%	6%
Too many things	8%	7%	7%	8%	8%	7%	9%	10%	7%
Heating or cooling	8%	7%	12%	9%	8%	9%	11%	5%	6%
Renter	3%	4%	4%	4%	3%	2%	2%	5%	4%
Don't know what to do	3%	3%	1%	2%	3%	3%	3%	4%	2%
Age of home	3%	4%	3%	4%	3%	4%	2%	4%	2%
Construction of home	2%	2%	3%	3%	2%	2%	4%	<1%	2%
Lack of time	1%	2%	1%	1%	1%	2%	1%	3%	-
Medical needs	1%	3%	2%	3%	1%	1%	2%	1%	<1%
Pool or spa	1%	2%	2%	2%	<1%	1%	<1%	-	-
Work at home	<1%	-	1%	<1%	<1%	<1%	-	-	<1%
Other	10%	11%	11%	11%	10%	11%	12%	7%	10%
Don't know	37%	29%	20%	25%	40%	26%	33%	43%	53%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B13. ENERGY-RELATED ATTITUDES: AGREEMENT WITH STATEMENTS

Regarding their attitudes, high users are more motivated by the cost of energy and less by the environment. They also admit being less knowledgeable about how they can save.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Attitudes About Energy (percent strongly agree) (AT6)									
Cost of energy makes me want to conserve	73%	78%	80%	79%	72%	77%	72%	71%	69%
I monitor my electricity bills very closely	71%	72%	71%	72%	71%	68%	70%	72%	71%
New technologies can help me use energy more efficiently	69%	72%	71%	71%	69%	68%	75%	67%	67%
I am very concerned about the environment	67%	62%	64%	63%	68%	69%	67%	65%	70%
Energy I use has an impact on future generations	66%	64%	65%	65%	67%	69%	72%	61%	65%
I am very knowledgeable about things I can do to save	61%	53%	60%	56%	61%	57%	61%	62%	63%
Saving on bill is worth sacrificing some comfort & convenience	57%	59%	57%	58%	57%	60%	56%	52%	59%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B14. ENERGY-RELATED ATTITUDES: AGREEMENT WITH STATEMENTS

High users (temperate and non-temperate) are less likely to think they have done all they can to save energy, and they are more likely to worry about being able to pay their energy bill.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Attitudes About Energy (percent strongly agree) (AT6)									
I've already done everything I can to save energy	55%	48%	45%	47%	56%	53%	53%	53%	63%
I sometimes worry if there is enough money to pay my energy bill	53%	58%	59%	59%	52%	62%	51%	50%	48%
I regularly try to convince others to use less energy	52%	57%	52%	55%	51%	54%	50%	49%	51%
I do more than most people to reduce my impact on the environment	45%	33%	38%	35%	48%	46%	45%	47%	51%
If I wanted to I could use less energy than I use now without sacrificing too much	41%	44%	34%	39%	41%	40%	43%	41%	41%
My actions have little effect on global warming	30%	28%	24%	26%	30%	31%	29%	26%	34%
Having the benefits of using energy is more important than saving energy	24%	22%	16%	19%	25%	21%	21%	29%	28%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B15. ENERGY-RELATED ATTITUDES: AGREEMENT WITH STATEMENTS

Among high users, their energy use does weigh on their minds, and they are more likely to agree that someone in the home is dependent on energy for health reasons.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Attitudes About Energy (percent strongly agree) (AT6)									
I don't often think about how much energy I use in my home	23%	15%	15%	15%	24%	23%	23%	20%	28%
Someone in my household is dependent on energy for health reasons	22%	26%	29%	27%	21%	21%	24%	18%	19%
I am often the first among family and friends to purchase new appliances	22%	27%	24%	26%	22%	24%	19%	20%	24%
I usually buy used rather than new appliances	15%	15%	12%	14%	15%	11%	16%	16%	15%
If I were to buy a new appliance I would buy a less expensive one even if it used more energy	10%	8%	7%	8%	10%	10%	10%	10%	11%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B16. ENERGY-RELATED BEHAVIORS

Suggesting that high usage is not just because of their environment, high users are less likely to follow energy efficient practices at home: turning off lights and TVs, etc.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
Energy Efficient Behaviors (percent "always" do this) (EB1)									
Turn off lights	78%	72%	75%	73%	79%	76%	76%	79%	83%
Power down computer	67%	60%	61%	61%	68%	72%	63%	69%	69%
Unplug chargers	58%	58%	50%	54%	59%	56%	60%	59%	60%
Turn off TV	75%	69%	69%	69%	76%	76%	73%	74%	80%
Run appliances full	74%	78%	77%	77%	74%	83%	76%	66%	72%
Use fans on hot days	45%	44%	36%	40%	45%	45%	48%	41%	47%
Raise/lower thermostat	32%	32%	35%	33%	32%	37%	32%	31%	29%
Clothing for warmth	59%	58%	60%	59%	59%	64%	56%	58%	60%
Close ducts	51%	53%	48%	51%	52%	48%	58%	50%	51%
Lower hot water temp	31%	25%	33%	29%	31%	33%	32%	33%	27%
Mean number of "always"	5.2	5.0	5.3	5.2	5.2	5.5	5.3	5.0	5.0

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B17. ENERGY-RELATED BEHAVIORS: HVAC SETTINGS

Thermostat settings are quite similar across usage groups – dependent upon climate zone rather than household energy usage.

		High Users				Lower Users			
	Population Total (n=1,536)	Top Quintile Temperate (n=245)	Top Quint. Non-Temperate (n=199)	Top Quintile Total (n=445)	Lower Quintiles Total (n=1277)	4 (n=267)	3 (n=322)	2 (n=320)	1 (n=368)
HVAC Temperature Settings (means) (EB2, EB3)									
Hot summer days	75.2	74.0	76.0	75.1	75.2	75.9	74.6	76.1	74.5
Cold winter days	71.5	71.7	71.9	71.8	71.4	71.4	71.2	71.2	71.9

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B18. CONNECTION WITH UTILITY PROGRAMS: OVERALL OPINIONS

High users (temperate and non-temperate) are less satisfied with SCE – in general, higher income customers tend to be less satisfied.

		High Users			*Lower Users*				
	Population Total *(n=1,536)*	***Top Quintile Temperate*** *(n=245)*	***Top Quint. Non-Temperate*** *(n=199)*	***Top Quintile Total*** *(n=445)*	***Lower Quintiles Total*** *(n=1277)*	***4*** *(n=267)*	***3*** *(n=322)*	***2*** *(n=320)*	***1*** *(n=368)*
Satisfaction with SCE *(1 to 10 scale) (CU1)*									
Satisfied (%8-10)	79%	72%	67%	70%	81%	75%	77%	85%	85%
Dissatisfied (%1-3)	4%	6%	7%	7%	4%	6%	3%	3%	4%
Mean	8.5	8.1	7.9	8.0	8.7	8.4	8.5	8.8	8.8
Opinions About EE Programs *(open ended) (CU2)*									
POSITIVE: Total	82%	82%	79%	80%	83%	78%	80%	83%	87%
NEUTRAL: Total	13%	11%	17%	14%	13%	14%	14%	13%	11%
Don't Know	11%	8%	15%	11%	11%	11%	12%	13%	9%
Don't Care	2%	4%	2%	3%	2%	3%	2%	1%	2%
NEGATIVE: Total	9%	11%	9%	10%	9%	11%	11%	8%	6%
Not enough info	4%	5%	5%	5%	4%	5%	5%	4%	1%
Hard to qualify	2%	2%	1%	2%	2%	2%	4%	1%	1%
Rebates too small	1%								
Don't trust SCE	1%								
Need money to part.	1%	**Small sample size not meaningful for subgroup comparisons**							
Too much effort	<1%								
Renter	<1%								
Other	3%	7%	10%	8%	3%	5%	4%	3%	1%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B19. CONNECTION WITH UTILITY PROGRAMS: PAST PARTICIPATION

Non-temperate high users are more likely than temperate high users to have participated in EE programs before – this difference is related to climate zone, not usage. High users (temperate and non-temperate) tend to have higher participation in the Summer Discount Plan, perhaps because they are more likely to have central AC. Non-temperate high users also have higher participation in ARP and EE Rebates – probably related to their higher ownership rates for appliances.

		High Users				*Lower Users*			
	Population Total *(n=1,536)*	***Top Quintile Temperate*** *(n=245)*	***Top Quint. Non-Temperate*** *(n=199)*	***Top Quintile Total*** *(n=445)*	***Lower Quintiles Total*** *(n=1277)*	***4*** *(n=267)*	***3*** *(n=322)*	***2*** *(n=320)*	***1*** *(n=368)*
Ever Participated in EE Programs Before *(CU3)*									
Yes	46%	41%	52%	46%	46%	52%	41%	45%	47%
No	51%	55%	47%	52%	51%	46%	56%	50%	51%
Don't know	3%	4%	<1%	2%	3%	2%	4%	6%	2%
Programs Participated In *(if ever participated)* *(CU4)*									
Appliance Recycling	39%	41%	48%	44%	37%	41%	40%	31%	36%
EMA	34%	33%	39%	36%	32%	33%	28%	30%	36%
EE Rebates	28%	34%	41%	38%	27%	38%	26%	20%	25%
Home Energy Surveys	28%	33%	35%	34%	27%	33%	30%	24%	24%
Summer Discount Plan	26%	24%	44%	34%	24%	28%	19%	26%	24%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B20. LIEE SOURCES OF AWARENESS AND PARTICIPATION

Among past EMA participants, sources of learning about EMA are similar across all usage groups, except that high users are more likely to have seen an ad and less likely to get direct mail.

		High Users				Lower Users			
	Population Total (n=239)	Top Quintile Temperate (n=33)	Top Quint. Non-Temperate (n=40)	Top Quintile Total (n=74)	Lower Quintiles Total (n=189)	4 (n=45)	3 (n=37)	2 (n=43)	1 (n=63)
Current or Previous Home (EMA participants) (LIEE3)									
Current	78%	73%	69%	71%	80%	82%	79%	82%	77%
Previous	19%	17%	29%	23%	19%	18%	18%	18%	21%
Don't know	2%	9%	25%	6%	1%	-	3%	-	2%
Source of Learning About EMA (EMA participants) (LIEE4)									
Friend/neighbor/family	32%	29%	30%	29%	33%	29%	34%	36%	32%
Saw/heard an ad	17%	18%	27%	23%	17%	23%	14%	16%	16%
Rep at my door	14%	21%	5%	12%	14%	13%	15%	13%	13%
Bill insert	8%	9%	5%	7%	8%	2%	12%	9%	8%
Direct Mail	7%	3%	4%	3%	8%	8%	10%	6%	8%
Phone call to utility	6%	6%	10%	9%	6%	8%	6%	4%	5%
Utility website	3%	4%	6%	5%	3%	3%	3%	3%	2%
Phone call from utility	3%	1%	1%	1%	3%	5%	4%	3%	1%
From another program	2%	2%	4%	3%	1%	1%	1%	3%	1%
County/City/Snr Center	2%	<1%	<1%	<1%	2%	<1%	2%	1%	4%
Landlord	2%	-	-	-	2%	<1%	-	2%	5%
Other	5%								
Don't know	6%	5%	9%	7%	6%	7%	6%	3%	7%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B21. LIEE PARTICIPANT CONCERNS

Concerns about EMA are shown here – there are no significant differences between usage groups.

		High Users				Lower Users			
	Population Total (n=239)	Top Quintile Temperate (n=33)	Top Quint. Non-Temperate (n=40)	Top Quintile Total (n=74)	Lower Quintiles Total (n=189)	4 (n=45)	3 (n=37)	2 (n=43)	1 (n=63)
Concerns About EMA (EMA participants) (LIEE6)									
Don't know of any	53%	57%	61%	59%	52%	49%	65%	47%	50%
None	30%	22%	29%	26%	30%	32%	19%	34%	33%
Did not believe was free	7%	13%	4%	8%	7%	7%	8%	9%	4%
Might be a scam / fine print	3%	1%	2%	2%	3%	3%	7%	3%	-
Had to document income	2%	-	-	-	2%	-	-	-	6%
Doubted quality	1%	-	-	-	2%	4%	1%	-	2%
Didn't think I'd qualify	1%	-	1%	1%	1%	3%	3%	-	-
Wanted more info	1%	3%	1%	2%	1%	-	-	4%	1%
Landlord's permission	1%	4%	3%	3%	-	-	-	-	-
Take too much time	1%	-	-	-	1%	5%	-	-	-
Other	2%	-	-	-	2%	-	-	3%	4%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B22. LIEE PARTICIPATION DIFFICULTIES

Also among EMA participants, higher users (in the top 3 quintiles) are more likely to report experiencing difficulties or disappointment regarding their participation.

		High Users				Lower Users			
	Population Total (n=239)	Top Quintile Temperate (n=33)	Top Quint. Non-Temperate (n=40)	Top Quintile Total (n=74)	Lower Quintiles Total (n=189)	4 (n=45)	3 (n=37)	2 (n=43)	1 (n=63)
Difficulties or Disappointments *(EMA participants)*				*(LIEE7)*					
Yes	15%	25%	20%	22%	14%	20%	21%	4%	12%
No	85%	75%	80%	78%	86%	80%	79%	96%	88%
Type of Difficulty *(EMA participants) (LIEE8)*									
Scheduling / wait	16%	-	42%	21%	14%	17%	5%	22%	17%
Contractor didn't finish	15%	32%	36%	34%	7%	15%	5%	-	-
Workers not professional	11%	14%	-	7%	11%	4%	17%	-	17%
Weather stripping problem	8%	12%	6%	9%	9%	22%	5%	-	-
AC problem	7%	-	-	-	10%	-	17%	-	17%
Record keeping problem	7%	-	-	-	10%	-	-	-	33%
Insulation problem	4%	-	-	-	6%	17%	-	-	-
Other	42%	42%	53%	47%	41%	30%	54%	78%	33%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B23. LIEE REASONS FOR PARTICIPATING

High users (temperate and non-temperate) are less likely to say they participated in EMA to get the free refrigerator – perhaps because they tend to have newer units already.

		High Users				Lower Users			
	Population Total (n=239)	Top Quintile Temperate (n=33)	Top Quint. Non-Temperate (n=40)	Top Quintile Total (n=74)	Lower Quintiles Total (n=189)	4 (n=45)	3 (n=37)	2 (n=43)	1 (n=63)
Main Reasons You Signed Up for EMA *(LIEE5)*						***Benefits*** *(EMA participants)*			
Save Money	25%	17%	23%	20%	27%	30%	23%	32%	23%
Save Energy	21%	24%	20%	22%	20%	26%	25%	21%	12%
Refrigerator	16%	12%	7%	10%	18%	15%	22%	19%	17%
Light bulbs	10%	13%	1%	7%	11%	8%	14%	15%	10%
Weather stripping	9%	10%	7%	8%	9%	13%	11%	9%	6%
Swamp cooler	3%	-	7%	4%	3%	6%	6%	-	2%
Limited income	3%	-	5%	3%	4%	7%	-	4%	4%
Help environment	3%	3%	2%	2%	3%	3%	3%	6%	2%
Discount on bill	3%	-	3%	2%	3%	-	3%	-	7%
Windows	3%	1%	5%	3%	3%	3%	-	6%	2%
Medical condition	3%	6%	5%	5%	2%	1%	3%	3%	2%
Other	25%								
Main Reasons You Signed Up for EMA *(LIEE5)*						***How Learned About It*** *(EMA participants)*			
Word of Mouth	9%	9%	8%	8%	9%	8%	9%	9%	11%
Rep came to door	5%	10%	-	4%	6%	8%	3%	9%	4%
Other									

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B24. LIEE AWARENESS AMONG NON-PARTICIPANTS

Among non-participants in EMA, awareness is higher in non-temperate climate zones, but also among the lowest usage groups.

		High Users				Lower Users			
	Population Total (n=1,149)	Top Quintile Temperate (n=155)	Top Quint. Non-Temperate (n=130)	Top Quintile Total (n=286)	Lower Quintiles Total (n=863)	4 (n=182)	3 (n=222)	2 (n=222)	1 (n=237)
Heard of EMA (not participated) (LIEE1)									
Yes	39%	28%	41%	34%	39%	31%	35%	46%	44%
No	59%	68%	57%	63%	58%	68%	62%	50%	54%
Don't know	2%	3%	2%	3%	2%	<1%	3%	2%	1%
Status with EMA (not participated but aware of EMA) (LIEE2)									
Know nothing about it	30%	32%	30%	31%	30%	23%	30%	31%	34%
Don't know enough	28%	26%	29%	28%	27%	27%	27%	28%	26%
Decided against it	10%	17%	11%	14%	9%	11%	10%	8%	9%
Attempted but unable	17%	16%	13%	14%	17%	15%	12%	21%	18%
Don't know	16%	10%	16%	13%	16%	24%	21%	12%	13%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B25. REASONS NOT TO PARTICIPATE IN LIEE

Reasons for not participating in EMA (among those aware of it) are shown here. Sample sizes are small, but it appears that higher users are more likely to think they don't need it.

		High Users				Lower Users			
	Population Total (n=150)	Top Quintile Temperate (n=18)	Top Quint. Non-Temperate (n=22)	Top Quintile Total (n=41)	Lower Quintiles Total (n=125)	4 (n=21)	3 (n=30)	2 (n=37)	1 (n=37)
Reasons Not Signed Up for EMA (know about EMA but have not participated) (LIEE9)									
Not sure how to sign up	44%	45%	38%	41%	45%	51%	54%	43%	37%
Don't think would qualify	38%	43%	34%	38%	39%	36%	42%	38%	38%
Don't think home needs it	35%	47%	44%	45%	32%	25%	34%	30%	38%
Someone else needs it more than you do	36%	31%	45%	39%	37%	40%	33%	39%	37%
Doubt the workmanship	17%	15%	14%	14%	17%	21%	9%	16%	21%
Doubt appliance quality	14%	9%	18%	14%	14%	10%	14%	8%	24%
Some other reason	19%	12%	26%	19%	19%	6%	34%	17%	17%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Table B26. LIEE INFORMATION SOURCE PREFERENCES

High users (temperate and non-temperate) are less likely to want information about EE programs from their SCE bill or bill inserts, and more likely to want it through the Internet and email.

		High Users				*Lower Users*			
	Population Total *(n=1,494)*	***Top Quintile Temperate*** *(n=240)*	***Top Quint. Non-Temperate*** *(n=197)*	***Top Quintile Total*** *(n=437)*	***Lower Quintiles Total*** *(n=1,239)*	***4*** *(n=256)*	***3*** *(n=314)*	***2*** *(n=314)*	***1*** *(n=355)*
Information Sources ***(percent preferring) (IS1)***									
SCE Separate Mail	68%	69%	69%	69%	68%	69%	70%	68%	66%
SCE Bill or Inserts	40%	37%	37%	37%	42%	44%	38%	42%	43%
Phone	18%	18%	17%	17%	19%	18%	19%	14%	23%
Internet/Website	12%	13%	17%	15%	11%	13%	13%	11%	7%
News: TV/Radio	7%	6%	4%	5%	7%	5%	8%	7%	7%
Email	6%	12%	10%	11%	6%	7%	8%	4%	5%
SCE Employees / In-Person	4%	6%	4%	5%	5%	4%	5%	5%	4%
SCE Advertising: TV/Radio	4%	6%	2%	4%	4%	4%	5%	4%	2%
SCE Website	3%	3%	5%	4%	3%	5%	3%	3%	2%
Newspapers	2%	2%	1%	2%	2%	1%	3%	2%	4%
Word of Mouth	1%	1%	3%	2%	2%	1%	1%	2%	2%
Community/Assistance Org.	1%	<1%	<1%	<1%	1%	-	1%	-	2%
Contractors	<1%	-	1%	<1%	<1%	<1%	<1%	<1%	1%
Stores/Retailers	<1%	-	-	-	<1%	-	1%	-	-
Other	2%								
None	1%	1%	1%	1%	1%	<1%	1%	2%	1%

Significant differences between (1) temperate and non-temperate, and (2) top quintile and lower quintiles (combined and individually) are indicated by blue and red shading (90% confidence level).

Appendix C

Focus Group Discussion Guide: Initial Groups

Focus Group Discussion Guide

(Approximately 1:50 hours total time)

I. INTRODUCTION (15 minutes)

OBJECTIVE: Create an atmosphere for open discussion

- Moderator Introduction:
  - Introduce self
  - Leading the discussion today
  - I am an independent consultant and do not work directly for the company who hired us so you will not hurt our feelings or insult us if you disagree with, or do not like something is presented here today.
  - Only rules are (1) that everyone needs to participate although not all at once, so please take turns talking, and (2) if you have something to share please speak to the entire group, not just your neighbor (3) it is VERY important that you are honest. Do not just agree with others or say what you think WE or others in the group want to hear. Personal and HONEST opinions are important.
  - Room description, backroom observers, audio and video recording

- Objective/Topic of Discussion:
  We want to learn more about…
  - your attitudes and behavior related to the use of electricity (as well as those of your family)
  - your family's home and circumstances as they relate to energy use
  - how the recent economy may be affecting your energy use
  - your opinions of some programs the utilities offer to help their customers

- Introductions: Tell us about yourself:
  - Name
  - Where you live
  - What type of home is it (single family, townhouse, condo, apartment)
  - How long you've lived there
  - How many in your household
  - And share with us one current source of frustration that perhaps keeps you from doing more of the things that you would like to do?

II. OVERALL ENERGY HABITS AND USE (15 minutes)

OBJECTIVE: Understand energy efficient and inefficient habits and behaviors. Determine barriers to adopting more energy efficient behaviors.

1. I'd like to begin by asking you to tell me a little bit about your home – and in particular, how you and other members of your household use energy.
   - What are your main uses of energy in your home?
     - (MAKE LIST – WRITE ON BOARD)
   - What are the main benefits to you of using energy in your home?
     - (MAKE ANOTHER LIST – WRITE ON BOARD)(E.G.: Helps keep the routines of your household, physical comfort, safety, entertainment and enjoyment, income (if you work at home), getting more things done, taking care of your family, dong things with others, etc.
     - Which is most important?
   - Do you think your household uses more or less energy in relation to others in your community?
     - Show of hands, who thinks they use more?
     - Who thinks they use less?
     - If you think you use more, why is that? (PROBES IF NEEDED: number of people, what different household members do, the home itself, how you use appliances, what types or age your appliances are, etc.)
     - If you think you use less energy, why is that?

III. CHANGES IN ENERGY USE / ATTITUDES TOWARDS ENERGY (20 minutes)

OBJECTIVE: Understand possible reasons and motivations for increases AND decreases in energy use.

1. Have any of you noticed if you are using MORE energy now than you did a few years ago? Your bill may go up for other reasons – at the moment I am really interested in knowing if you have noticed if you are actually using more electricity now than you used to.
   - For those of you who have INCREASED your energy use over the past few years – can you talk a little about that?
     - What do you think is causing you to use more energy? (PROBE FOR USES AND REASONS: E.G.: NEW APPLIANCES ADDED, MORE ELECTRONICS IN THE HOME, MORE PEOPLE IN THE HOME, EQUIPMENT NOT WORKING AS WELL, WEATHER MORE EXTREME?)
   - Are there any others who <u>think</u> they are using MORE energy than they used to – even if you are not sure or haven't been paying attention to changes in your energy bill or not.
     - What do you think is causing you to use more energy now?

2. On the other side, how many of you are <u>confident</u> that you are using LESS energy than you used to?
   - What do you think is causing you or your household to use LESS energy than you used to? (PROBE FOR (1) USE CHANGES, (2) CIRCUMSTANCES, AND (3) REASONS: E.G., FEWER PEOPLE IN THE HOME, TURNING OFF LIGHTS MORE, ALTERING THERMOSTAT TEMP, TURNING OFF TV, NOT USING AC AS MUCH, ETC)
   - Any others who think they are using LESS energy than they used to?
     - What are some of the reasons that you or your household is using LESS energy than you used to?

3. To what extent do you and others in your household try to actively conserve or save energy?
   - Would you say that conserving energy in your home is more—or less—important to you than others?
     - Who do you compare yourselves to?
     - For those who say saving energy is more important to your household than to others – why is it important?

    - For the rest of you, why is it less important to your household?
- To the extent that you or your household tries to save energy, what is the main reason that you do this? (PROBE: MONEY, ENVIRONMENT, COMFORT, PRESSURE FROM OTHERS (WHO?), ETC.)
    - Have you been successful in saving energy?
    - What are the biggest barriers that YOU personally have in trying to save energy?
    - Do other members of your household share this opinion – or do you think they might see other reasons for NOT saving more energy?
    - What energy habits are hard to change?

4. If saving energy is not that important to you, why not? (PROBE: USE LITTLE TO BEGIN WITH, CAN AFFORD IT, COMFORT, ETC.)

IV. HIGH USAGE NEEDS ASSESSMENT QUESTIONS – BEHAVIORS, APPLIANCES, AND ATTITUDES IN RELATION TO OTHERS (25 minutes)

OBJECTIVE: Understand possible reasons for high use relative to neighbors

1. Earlier we talked briefly about how you see yourself and your household in relation to others – I'd like to discuss in a little more detail how you see your attitudes and electricity use in comparison to others in your community.
   - First off, relative to your neighbors, in your opinion, tell me what you think makes you and/or your household MORE or LESS "green"?

   (ASK THE FOLLOWING 2 QUESTIONS AS FOLLOW-UPS IF THEY HAVE NOT BEEN ANSWERED
   - Is there anything about your home or personal circumstances that you feel makes it "necessary" for you to use MORE electricity than your neighbors?
   - Is there anything about your home or your personal circumstances that perhaps allows you to use LESS energy than your neighbors?

2. We also made a list of things that use energy in your home. Which of these appliances, equipment, and electronics do you consider:
   - Most energy efficient?
   - Least energy efficient?
   - Unsure/neither?

3. What makes things more energy efficient? (E.G., NEWER, SMALLER, ETC.)
   - What makes things less energy efficient?
   - FOR APPLIANCES THAT APPEAR TO BE MISCLASSIFIED, PROBE WHY

4. Can you tell me some things that you feel you CANNOT control or change with regard to your energy use?

5. What sort of things do you feel you CAN control or change with regard to your energy consumption?
   - PROBE TO IDENTIFY CONTROLLABLE SITUATIONS (remembering to turn the thermostat down; TV off; close windows, fill laundry machine, VS need to keep warm; need to do laundry, etc.).

6. Is there anything that you can think of that would make you more likely to conserve or be more efficient with your energy?

7. Next I am going to ask you to use the pencil and paper in front of you to write three different things down for me:

   - FIRST, thinking about ads or public service announcements that talk about "the need to conserve energy", is there anything in information that you have seen or heard that **you find hard to believe?** (LET THEM WRITE – AND THEN GO ON TO #2)
   - SECOND, again thinking about ads or public service announcements, is there anything that you hear or read **that you feel does not apply to you?** (LET THEM WRITE – AND THEN GO ON TO #3)
   - THIRD, is there anything that you see or hear about "saving energy" that **makes you angry?**

   - ONCE WRITING IS FINISHED:
     - What did you write down as "hard to believe"?
     - What does not apply to you?
     - What makes you angry?

   COLLECT THE PAPERS.

IV. FINANCIAL CHALLENGES & PAYING THE UTILITY BILL (10 minutes)

OBJECTIVE: Gain insights into relative customer hardship & strategies for dealing with bills.

1. In a minute I am going to ask your opinion about a specific energy efficiency program offered by your utility, but before I do that, I'd like to get a sense from you about how the current economic situation has impacted your ability to pay your bills.
   - When it comes time to pay the bills each month, how do you decide which bills to pay first? And which ones go to the bottom of the pile – in terms of importance?
   - Roughly where does your electric bill fit in – in terms of a priority?
   - How many of you have had difficulty paying your electric bill this past year?
     - Because of this, who has had a late payment, missed a payment, or received a disconnect notice? Has anyone actually had their service shut off because they did not pay a bill? *VERIFY TO SEE IF IT IS AN OVERSIGHT OR BECAUSE THEY DID NOT HAVE THE MONEY.*

2. Since your energy bills may go up and down based on the outside temperature, are there things that you, and members of your household, try to do to minimize the higher energy bills?

3. How many of you are currently receiving a discounted rate through your utility? (*IT SHOULD BE ALL – IF THEY KNOW)*
   - How did you learn about this program?
   - Have you ever told others you know about this program?

V. AWARENESS AND INTEREST IN THE LIEE PROGRAM (20 minutes)

OBJECTIVE: Gain insights into customer awareness and perceptions of the program, as well s barriers to participation.

1. Are any of you familiar with any other programs that your utility offers to help customers reduce their energy consumption?
   - Can you tell me the names and/or a description of any of the programs that you are familiar with? *(HOW MANY SPECIFIC PROGRAMS COME TO MIND)*
   - Can I see a show of hands if any of you have participated in any of these programs?
     - Which program? What prompted you to participate?

2. How many of you are familiar with a program called "EMA" or the Energy Management Assistance Program? *(GET A SHOW OF HANDS).*
   - What do you know about the program? *(PROBE IF NECESSARY:*
     - *What does it include?*
     - *How does it work?*
     - *How can someone participate?)*

MODERATOR READ:

The "EMA" program is a program that offers energy efficiency products and services to some customers at no cost. A qualifying household can receive a mix of different services, depending on its needs. Some of the things provided by the program include: informational materials and tips on saving energy, compact florescent bulbs, attic insulation, energy efficient refrigerators, evaporative coolers, caulking, and in some cases air conditioning units. The program also offers maintenance services for some appliances to insure that they are working properly and not "wasting" energy.

3. Have any of you participated in this program, or one like it?
   - What do you know about the EMA program, other than what I just told you?
   - Has anyone participated in a program like this one, but with a different name?
     - Is that program different from this EMA program? How so?
   - For those of you who have participated in this or a program like it, what enticed you to participate?
     - What was the most important reason that you participated?
   - Were you very, somewhat, or not at all satisfied with the program?

    - Why “very” satisfied?
    - Why ‘somewhat” satisfied?
    - Why “not at all” satisfied?
- What would you tell friends who were qualified for the program were the strengths and weaknesses of it?

4. Now, for the rest of the group, does this program sound like something that would be helpful to you or your household? Why? Why Not?
    - For people who think it could be helpful, what is it about the program that you find appealing?
    - For folks who do not think it would be helpful, why is this something that does not sound like it would be helpful for you?
    - Assuming that you are eligible, based on what you have heard so far, how many of you would consider participating in a program like this?
    - What is the main reason that you WOULD participate? *PROBE FOR SPECIFIC ASPECTS OF THE PROGRAM THAT SOUND APPEALING – INFORMATION, GETTING A NEW FRIDGE, ETC?*
    - What, if anything, might keep you from participating in the program?

5. Now that you know a little bit about the program, I would like to get your reaction to the process that customers go through in order to participate in the program. The steps to participate in this program include … <<INSERT brief description of targeting efforts, initial knock, leave behind, initial visit, call, documentation verification, etc.>>
    - Now I want to ask you again, assuming that you are eligible, how many of you would consider participating in this program?
    - What, if anything, might keep you from participating in the program?

V. CONCLUSION (5 minutes)

OBJECTIVES: Summary and final comments.

1. I am going to go into the back room now to see if they have any final questions for me to ask you. (LEAVE AND RETURN. ASK FINAL QUESTIONS)
2. Do *you* any final comments?

THANK YOU VERY MUCH!

Appendix D

Telephone Survey Research Instrument

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 <u>all</u> 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

Appendix E

In-Home Research Instrument

HUNA Site Visit Interviews **HINER & PARTNERS, INC**
SCE LIEE HUNA Project 11/23/10
n=30 Residential Customers

Interviewer's Name: _____ Participant Name _____ M F

a.m. p.m.
Date of Visit/Time _____ _____ Street Address _____

Weather Zone: _____ City: _____

Participant's Telephone: (____) _____

Applied Toward (Quota) for: [] Anaheim (8) [] Lancaster/Palmdale (4) [] Long Beach (8)

[] Oxnard/Ventura (8) [] San Bernardino (4)

ENTER INFORMATION FROM RECORD PRIOR TO VISIT

1. Unique identifier _____
2. Years at residence _____
3. Number in Household Total: _____ Under 18: _____ Over 65: _____
4. HC1: Type of home: []1 Single Family Detached home
   []2 Duplex
   []3 Townhouse or Row House with shared walls
   []4 Condominium (sharing floor/ceiling w/ unit above or below)
   []5 Apartment
   []6 Mobile Home
   []7 Something else (SPECIFY) _____
5. Owner type: [] Own [] Rent
6. Quarter with highest usage (amount): [] Q1 [] Q2 []Q3 []Q4 (Kw) _____
7. Programs participated in (Ref CU4a,b): []Appliance Recycle [] Appliance Rebate
   [] Neither
8. Medical baseline participant: [] Yes [] No [] Unknown
9. Language indicator: [] English [] Spanish [] Asian [] Other [] Missing
10. Disabled indicator in record: Yes No Unknown
11. Senior indicator in record: Yes No Unknown
12. Median year homes in area were built: _____
13. Home's average quarterly electric use: _____

INTRODUCTION & EXPLANATION TO CUSTOMER

EVALUATOR:

Introduce yourself to the Southern California Edison customer:

- State your name.
- Explain that you are there to complete the "home energy assessment" that was scheduled…Ask to speak to [name of person agreeing to the visit]…Repeat introduction, if necessary.
- If necessary, the resident may call Carol Edwards at Edison, at (626) 633-7105 to re-confirm the legitimacy of the visit.
- Explain that you first have some initial questions about the household's energy use. They will take about 25 minutes for the resident to answer. Then you would like to walk with the resident to look at the household's appliances and major uses of energy. This can be completed in about 45 minutes. Afterwards, you'll discuss what you've found and will probably have some follow-up questions. The whole process will be completed within two hours.
- Ask if the resident has any initial questions for you to answer.
- Begin the "Initial Interview."

I. INITITAL INTERVIEW (attitudes, knowledge, behavior) 25 MINUTES

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

Info from Record (3.)

_____ ____
(Refused = 99)

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

_____ ____
(Refused = 99)

S6. How many, if any, are 65 or older?

_____ ____
(Refused = 99)

As I mentioned, I'd like your help showing me the energy uses in this home. Before that, I have some general questions about your thoughts about energy, and some specific questions about energy you personally use and that others in your household use.

1. How do you think about energy use? How/why is it relevant to you?
   _____
   _____

2. Do you pay much attention to energy use? (Probe:) Are you trying to conserve? How?
   _____
   _____

3. Is saving energy important to you? Why? Why not?
   _____
   _____

4. What would you say is the biggest **energy-related** issue facing you personally?
   _____
   _____

5. What would you say is the biggest **energy-related** issue facing the nation or the world?
   _____
   _____

6. How much attention do you pay to your energy bills? How closely do you look at them? What is your review routine? Are your energy bills low or high? (Probe: "low"?? "high"??)
   _____
   _____

7. Do your energy bills affect your behavior? If so, how?

   _____

   _____

8. How, if at all, do energy costs and savings affect your decisions to buy appliances or products that save energy?

   _____

   _____

9. Overall, how does **the physical structure** of your home affect your energy use? (Probe: Help? Hurt? Why?)

   _____

   _____

10. Overall, how do **the habits of household members** affect energy use? (Probe: Help? Hurt? How and why?)

    _____

    _____

11. What percent of the time is someone in the house? ____ **%**

12. Compared to the last couple of years is one or more household members spending more time in the house? [] Yes [] No Why? _____

13. Is anyone in the household concerned about the health of a household member, such as an elderly spouse or relative or a child with a chronic condition that requires more consistent winter heating or summer cooling? [] Yes [] No
    (If "yes," condition) _____

14. How difficult is it to keep the temperature of the house at a comfortable level? What are the likely causes of any difficulties?

    _____

    _____

15. Beyond adjusting your primary heating or cooling system, what are some of the OTHER ways you try to keep the home more comfortable? *(If needed, probe about use of space heaters, window AC units, fans and non-visible heating and cooling units that may use a lot of electricity).*

    _____

    _____

16. Is the particular amount of energy used in your home within your control or beyond it? (Probe beyond answers given in "Initial Interview:" Why?) **[] Within []Beyond**

    _____

    _____

17. Is energy efficiency a worthy goal for the community? **[] Yes [] No**

Why/why not? _____
_____

18. Is energy efficiency worth some personal sacrifice from everyone, including yourself? **[] Yes [] No**

Why/why not? _____
_____

19. Does your home seem to use above, below or average amounts of energy compared to others the same age and size in this neighborhood? **[] Above [] Average [] Below**

20. **Why/why not?** _____
_____

21. Actually, records indicate that your home consumes significantly high amounts of energy than others like it? Is that information believable? **[] Yes [] No**

Why/why not? _____
_____

22. [**IF UNAWARE OF HIGH USAGE IN 20, ASK**] Will that information affect your home's energy use over the next year? **[] Yes [] No**

Why/why not? _____
_____

II. WALK AROUND / OBSERVATIONS 45 MINUTES

Now I'd very much appreciate you giving me a tour of the energy uses in your home. I'd like to see how energy is used in the various rooms of your house. By 'energy', I mean anything that would end up costing you money on your gas or electric bill. ….Can we start in the kitchen?

1. KITCHEN – Observations & Discussion

A. Kitchen Appliances - Observations

	Size	Style	Age	Energy *
Main Fridge		**1 2 3 ; 4 5 6**		**Y N**
Other Fridge		**1 2 3 ; 4 5 6**		**Y N**
Oven		**Electric Gas**		**Y N**
Stove		**Electric Gas**		**Y N**
Microwave				**Y N**
Dishwasher				**Y N**
Other (trash compactor etc)				**Y N**

Refrigerator/Freezer Sizes	Fridge Styles;
1. Mini (less than 2 cubic feet)(incl. wine coolers) 2. Very Small (2 to 10 cubic feet) (incl wine coolers) 3. Small (11 – 16 cubic feet) 4. Medium (17 – 20 cubic feet) 5. Large (21 to 27 cubic feet) 6. Extra large (more than 27 cubic feet)	1. Top /Bottom 2. Side by side 3. 3+ door 4. Basic (no auto icemaker, etc) 5. Moderate (has exterior ice dispenser) 6. All the bells and whistles

DISCUSSION OF THE USE OF **APPLIANCES:** (How much used? When on?
Is fridge left open when cooking, etc? Are things "left on"? How often, Why left? (e.g., forgot…)

B. Kitchen Lighting - Observations

		Notes
Number of CFLs		
Number of incandescents		

DISCUSSION OF THE USE OF KITCHEN LIGHTING:
(How much used? When on? Who uses it? Are **LIGHTS** "left on"? How often? Why? (e.g., forgot, security reasons, etc.)

C. Kitchen OTHER (e.g., Electronics) – Observations / notes

	Size	Style	Energy star
TV: Hrs/Day on: __	**<20 21-25 26+**	**Tube Plasma LED LCD**	**Y N**

Other (SPECIFY e.g., stereo, laptop, etc.)
Other (SPECIFY)

USE OF ANY OTHER ELECTRONICS? ARE ENERGY INEFFICENT PRACTICES USED?
(How much used? When on? Who uses it? Are things "left on"? How often,?)

D. Kitchen – Additional Discussion on EE activities and appliances

Possible Questions/Probes to ask customer about Appliance Use in the Kitchen:

1. What in this kitchen uses energy? Which **APPLIANCE** uses the **MOST** energy? Why?

2. **HOW** are the appliances/electronics used in this kitchen? **WHO** uses them?

3. What, if anything, in this kitchen might be wasting energy? Why?

ADDITIONAL NOTES FOR OBSERVER:

Energy Usage in Kitchen appears to be: **[] Major [] Contributing**

What appears to be the most significant energy inefficient practice(s) / appliances here?

2. LIVING ROOM AND DINING ROOMS – Observations & Discussion

A. Living Room Lighting - Observations

		Notes
Number of CFLs		
Number of incandescents		

DISCUSSION OF THE USE OF **LIVING ROOM LIGHTING:**
(How much used? When on? Who uses it? Are things "left on"? How often, Why are lights left on? (e.g., forgot, security reasons, etc?)

B. Living Room - Electronics – Observations / notes

	Size	Style	Energy star
TV: Hrs/Day on: __	**<20 21-25 26+**	**Tube Plasma LED LCD**	**Y N**

	Present	Count
Computer	**Y N**	
DVR / TIVO Boxes	**Y N**	
Cable Box	**Y N**	
VCR/DVD Player	**Y N**	
Stereo / Surround Sound	**Y N**	
Video game consoles like Xbox, PlayStation or Wii	**Y N**	
Other (SPECIFY) e.g., portable heaters, fish tank, etc.	**Y N**	
Other (SPECIFY)	**Y N**	
Other (SPECIFY)	**Y N**	
Fireplace:	**Y N**	
If fireplace exists, is it covered (e.g., by glass; draft preventer)?	**Y N**	

B-2. Dining Room Lighting - Observations

		Notes
Number of CFLs		
Number of incandescents		

DISCUSSION OF THE USE OF **DINING ROOM LIGHTING:**
(How much used? When on? Who uses it? Are things "left on"? How often? Why?)

C. Living & Dining Rooms – Add'l Discussion on EE activities and electronics

Possible Questions/Probes to ask customer about Appliance Use in the Living Room:

1. What, in these rooms, uses energy? What do you think uses the MOST energy? Why?

2. **HOW** the appliances/electronics are used in these rooms? **WHO** uses them?

3. What, if anything, in here might be wasting energy? Why?

DISCUSS USE OF ALL ELECTRONICS AND ENERGY (INEFFICENT) PRACTICES:
(How much used? When on? Who uses it? Are things left on? How often?)

ADDITIONAL NOTES FOR OBSERVER:
Energy Usage in Living Room appears to be **[] Major [] Contributing**

What appears to be the most significant energy inefficient practice(s) / electronics here?

3. BEDROOMS (all combined) – Observations & Discussion

A. Bedroom (all combined) Lighting – Observations

	#CFLs	# Incandescents	Notes
Bedroom 1	_____	_____	_____
Bedroom 2	_____	_____	_____
Bedroom 3	_____	_____	_____
Bedroom 4+	_____	_____	_____

DISCUSSION OF THE USE OF BEDROOM LIGHTING: (How much used? When on? Who uses it? Are things "left on"? How often, Why are lights left on? (e.g., forgot, security reasons, etc?)

B. Bedrooms / Bathrooms - Electronics – Observations / notes

	Size	Style	Energy star	Notes
TV1	**<20 21-25 26+**	**Tube Plasma LED LCD**	**Y N**	**Hrs/Day on: ___**
TV2	**<20 21-25 26+**	**Tube Plasma LED LCD**	**Y N**	**Hrs/Day on: ___**
TV3	**<20 21-25 26+**	**Tube Plasma LED LCD**	**Y N**	**Hrs/Day on: ___**
TV4	**<20 21-25 26+**	**Tube Plasma LED LCD**	**Y N**	**Hrs/Day on: ___**

	Present	Count
Computer (laptop)	**Y N**	
Computer (desktop)	**Y N**	
DVR / TIVO Boxes / Cable Box	**Y N**	
VCR/DVD Player	**Y N**	
Stereo / Surround Sound	**Y N**	
Video game consoles like Xbox, PlayStation or Wii	**Y N**	
Hairdryer, curling irons etc.	**Y N**	
Portable fan(s)	**Y N**	
Other (SPECIFY) e.g., fish tank, etc.	**Y N**	
Other (SPECIFY)	**Y N**	
Other (SPECIFY)	**Y N**	
Fireplace: *If fireplace, iIs it covered (e.g., by glass; draft preventer)?*	**Y N** Y N	

DISCUSSION OF THE USE OF ANY OTHER ELECTRONICS OR ENERGY INEFFICENT PRACTICES: (How much used? When on? Who uses it? Are things "left on"? How often,?)

C. Bedrooms – Additional Discussion on EE activities and electronics

Possible Questions/Probes

- What, in this room uses energy? What do you think uses the MOST energy? Why?
- **HOW** are electronics and/or appliances used in these rooms? **WHO** uses them?
- What, if anything, in these rooms do you see as something that might be wasting energy? Why?

ADDITIONAL NOTES FOR OBSERVER:

Energy Usage in Bedrooms & Bathrooms appears to be **[] Major [] Contributing**

What appears to be the most significant energy inefficient practice(s) / electronics here?

4. Other common rooms (all combined) – Observations & Discussion

5. **[Ask to walk around the outside of the home. Ask to see garage to note energy using equipment]**

   Items Observed:

   [] 1. Power tools/ Type(s): _____

   [] 2. TV(s) **[] Tube [] Plasma [] LED [] LCD**

   [] 3. Other consumer electronics/ Type(s) _____

(continued)
[] 4. Other Outdoor/Garage/Other Items with (potentially) high energy use

A. _____

B. _____

C. _____

How often is [Item A] used? _____ [] N/A

Does this item consume a lot of electricity? [] Yes [] No
Why/why not?

_____

_____

How often is [Item B] used? _____ [] N/A

Does this item consume a lot of electricity? [] Yes [] No
Why/why not?

_____

_____

How often is [Item C] used? _____ [] N/A

Does this item consume a lot of electricity? [] Yes [] No
Why/why not?

_____

_____

III. SURVEY 25 MINUTES

I. HOME CHARACTERISTICS (5 minutes)

HC2a. Approximately how many square feet is your home? Your best guess is okay. _____
(Don't Know / Refused = 9999)

HC2b. How many bedrooms do you have? _____
(Don't Know / Refused = 9999)

HC3. Do you own or rent your home? []1 Own []2 Rent/lease []99 Refused

HC4. How many years have you lived at your current residence? _____
(Less than 1 year = 0; Refused = 99)

HC4a. [If lived @ residence < 5 yrs] How many times have you moved in the past 5 years?
(None = 0; Refused = 99) _____

HC5. In what year was this home was built? …Your best guess is okay. _____
(IF GUESSING TRY FOR NEAREST DECADE LIKE "1960")
(Don't Know / Refused = 99)

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

	Yes	No	Unsure	Refused	HC7 Code If HC6=Yes	Interviewer Observed
	1	2	8	9		
8. Ceiling fan	[]	[]	[]	[]	_____	_____
9. Double or triple paned windows	[]	[]	[]	[]	_____	_____
10. Intact weather stripping at all windows and doors that seals air leaks … If any windows or doors leak air when they are closed, than answer "no"	[]	[]	[]	[]	_____	_____
11. A programmable thermostat for heating and cooling	[]	[]	[]	[]	_____	_____
12. Motorized attic vents or fans (that remove hot air from the attic)	[]	[]	[]	[]	_____	_____
13. Attic insulation that would meet current standards	[]	[]	[]	[]	_____	_____
14. Whole house fan (that pulls air from inside the house 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 what percent of your light bulbs are compact fluorescent or CFL bulbs? (READ)

	Respondent	Interviewer Obs.
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)

	Respondent	Interviewer Obs.
a. Central AC	1	1
b. Heat Pump	2	2
c. Evaporative or swamp cooler	3	3
d. Window or wall mounted air conditioner(s)	4	4
e. Portable air conditioner	5	5
f. Fans	6	6
g. None	7	7
h. Don't Know / Refused (DO NOT READ)	9	xx

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 (Yes)] What else has been done?

Respondent: Interviewer Observations:

_____ _____

_____ _____

HOME INVENTORY AND EFFICIENCY –

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.

NOTE: Don't know/Refused 99

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

		Respondent	Interviewer
15.	TV's	_____	_____
16.	Desktop computers	_____	_____
17.	Laptop computers	_____	_____
18.	Cable, satellite, DVR or TIVO boxes	_____	_____
19.	Video game consoles like Xbox, PlayStation or Wii	_____	_____

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

		Respondent	Interviewer
20.	Refrigerators	_____	_____
21.	Stand alone freezers	_____	_____
22.	Dishwasher	_____	_____
23.	Clothes washer	_____	_____
24.	Clothes dryer	_____	_____
25.	Pool or spa	_____	_____
~~26.~~	~~Microwaves~~	N/A	
27.	Window AC units (ask ONLY if HC9 = 4)	_____	_____
28.	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.)

	Respondent	Interviewer
Fish tank.....	[]1	[]1
Power tools (table saw, power tools, welding, etc.).....	[]2	[]2
Air Compressor	[]3	[]3
Car charger (for electric car)	[]4	[]4
Medical Equipment.....	[]5	[]5
Other (SPECIFY:)_____)	[]6	[]6 _____
Don't know/Refused	[]99	N/A

Notes: _____

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 your/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

	RATING
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.~~ N/A	
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.~~ N/A	

PRICE & COST SENSITIVITY

8. Saving even a few dollars on my electric bill is worth sacrificing some comfort or convenience	____
~~9.~~ N/A	
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.~~ N/A

EMPOWERMENT & PERSONAL CONTROL

~~14.~~ N/A

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] **RATING**

LIGHTS

1. Turn off lights in rooms when not in use ____

~~2.~~ N/A

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 HAVE BOTH CENTRAL A/C & SWAMP:]** Do you 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 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.)

	[] N/A
_____(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.)

	[] N/A
_____(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 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 Southern California Edison 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

[]1. Good / great / helpful / like them

NEUTRAL

[]2. Don't know much about it / no opinion

[]3. Don't care / don't pay attention to this

NEGATIVES

[]4. Need money to participate / don't have the money

[]5. Rent / need landlord's permission

[]6. Don't qualify / hard to qualify

[]7. Not enough information about them / Don't know what is offered

[]8. Don't trust the utility or their motives, etc.

[]9. Too much work or effort (e.g., too much paperwork for rebates)

[]10. Rebates are too small / not worth it

[]11. Other (SPECIFY: _____)

[]99. Refused (DO NOT READ)

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. [**ASK ALL**] Which of the following programs have you participated in? (READ)(Yes, No, DK for each)(RANDOMIZE.)

	Yes	No	DK
	1	2	9
a) Rebates for energy efficient appliances or improvements or electronics **PULL INFO IN RECORD: Y N**	[]	[]	[]
b) Refrigerator or freezer recycling **PULL INFO IN RECORD: Y N**	[]	[]	[]
c) Home energy surveys or audits	[]	[]	[]
d) Summer Discount Plan, the air conditioning cycling program	[]	[]	[]
e) **EMA** (Emma)**,** 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 RE EMA PARTICIPATION:]** Have **you heard** of this EMA 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. **[IF LIEE1=1 (HEARD OF EMA)]** 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 (Participated in EMA)]** 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 (Heard of/Participated in EMA]** How did you learn about this program? (DON'T 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 **(Participated in EMA)**] What were the main reasons that you signed up for or participated in this program? **What details do you remember about how you learned about the program? About program offers that prompted you to sign up?**

_____

_____

_____

LIEE6. **[CU4f=YES (Participated in EMA)]** 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. **[CU4f=YES (Participated in EMA)]** 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 (Had EMA problems)]** Can you describe that problem or disappointment?

_____

_____

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

		Yes 1	No 2	DK 9
h.	You are not sure how to sign up	[]	[]	[]
i.	You do not think you would qualify based on your income	[]	[]	[]
j.	You do not think your home needs the improvements that the program offers	[]	[]	[]
k.	Someone else needs the improvements more than you do	[]	[]	[]
l.	You have doubts that the work would be of high quality	[]	[]	[]
m.	You have doubts that the appliances would be of high quality	[]	[]	[]
	ANCHOR LAST			
n.	Are there any other reasons I have not mentioned?	[]	[]	[]

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

_____

_____

LIEE11.**[IF LIEE2=4 (Ineligible to participate in EMA**)] What reason were you were given for not being able to participate in EMA? (Don't read. Mult. Response = OK) Any others?

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 Southern California Edison 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
SCE employees / in-person	5
SCE advertising: TV, radio, Internet	6
SCE bill or inserts in the bill	7
SCE separate mail	8
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

DEMOGRAPHICS – 2 MINUTES

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

D1. In what year were you born? _____
(Refused = 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

IF RESPONDENT HAS QUESTIONS ABOUT SURVEY LEGITIMACY, HE/SHE MAY CONTACT Carol Edwards 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

IV. FINAL/EXIT INTERVIEW 5 MINUTES

1. Now that we have gone through this, in thinking again about ***your home and its structure***, what would you now say contributes most to your energy bill? Why?

_____

_____

2. In thinking again about ***how you and other household members' use energy***, is there anything else you can think of that you now say might contribute to your energy bill? Why?

_____

_____

[REVIEW HC9 (A/C Types) AND HIN1 (Appliances/electronics reported) FOR DISCREPANCIES BETWEEN REPORTED AND ACTUAL.]
Earlier you mentioned [NOTE DIFFERENCES BETWEEN REPORTED AND ACTUAL A/C, APPLIANCES AND ELECTRONICS].
Why aren't these other items more "top of mind?"
[RECORD DISCREPANCIES, [RECORD RESPONSE]

_____

_____

4. Is reducing energy use in your home important? []1 Yes []2 No

   Why/why not? _____

   _____

5. What is the single most important thing that Southern California Edison could do to help you reduce your household's energy use? Please explain.

   _____

   _____

6. If Edison did as you described, how would your home's energy use change?
   []1 Reduce a lot []2 Reduce a little []3 No change

   Why do you say that?_____

   _____

7. How willing would you be to accept free energy efficiency materials and services, such as weatherizing, from Edison, if improvements could be made to your home's efficiency and it required a separate visit from an Edison-approved contractor?

   []1 Very willing []2 Somewhat willing []3 Neither willing nor unwilling []4 Somewhat unwilling []5 Very unwilling

   Why do you say that?_____

   _____

8. What concerns or hesitancies would you have, if any?
   [PROBE: QUALITY OF WORK/MATERIALS? INTRUSIVENESS? NOT A CREDIBLE OFFER? BELIEF IT WON'T HELP? OTHER?]

   _____

   _____

9. HC10b: If Southern California Edison offered a free A/C tune up, would you be…?

[]1 Very interested	[]2 Somewhat interested	[]3 Neither interested nor uninterested	[]4 Somewhat uninterested	[]5 Very uninterested

   Why? _____

10. HC10c: If Southern California Edison thought you would benefit from more knowledge about how A/C consumes energy and how you might save money, how interested would you be in that?

[]1 Very interested	[]2 Somewhat interested	[]3 Neither interested nor uninterested	[]4 Somewhat uninterested	[]5 Very uninterested

    Why? _____

11. What other comments do you have about Southern California Edison's energy conservation efforts?

    _____

    _____

    Thank you for your time!

    [EVALUATOR: REVIEW ALL RESPONSES AND OBSERVATIONS. RECORD ADDITIONAL INSIGHTS AND ASSESSMENTS.]

Site Evaluator:
All of the homes you are visiting use relatively high amounts of energy compared to others like them. The residents may not know that their homes are high-energy users.

Your overarching objective is to understand why the household has high energy use. The reasons might be related to the mix of appliances and consumer electronics (e.g., energy inefficient appliances/electronics), to attitudes, habits and behaviors, to physical features of the home—or something else.

There are 5 main components to the visit:

	Completion Time
1. Previsit	
• Enter record information about the property prior to the start of the scheduled visit	2 minutes
2. Introduction & Initial Interview	
• Introduction to customer; explanation of visit	3 minutes
• Initial Semi-Structured Interview on behaviors, attitudes, etc related to household's energy efficiency	25 minutes
3. Walk around, audit & observations	
• Site Audit of major appliances, electronics, home structure and observation of (apparent) energy	45 minutes
• Including discussion and clarification from customer as needed in walk-through	
4. Survey	25 minutes
• Fill out paper survey w/ customer. Some of this will have been covered with the initial two discussions w/ customer, but fill in additional information as needed w/ customer – as this tool was used w/ larger sample.	
5. Final Interview / Observational Review and Follow up	
• Follow up / final questions	5 minutes
• Record additional notes as needed	5 minutes
• As follow-up questions – as needed for clarification or follow up on something discussed earlier	

In all phases, Probe as needed and record the resident's explanations, perceptions/misperceptions and attitudes about high energy use – anything that might shed light on WHY this household has such High Usage?

Appendix F

Focus Group Discussion Guide: Final Groups

LIEE Segmentation "Post"

Focus Group Discussion Guide
(Approximately 1:50 hours total time)

II. INTRODUCTION (10 minutes)

OBJECTIVE: Create an atmosphere for open discussion

- Moderator Introduction:
  - Introduce self
  - Leading the discussion today
  - I am an independent consultant and do not work directly for the company who hired us so you will not hurt our feelings or insult us if you disagree with, or do not like something is presented here today.
  - Only rules are (1) that everyone needs to participate although not all at once, so please take turns talking, and (2) if you have something to share please speak to the entire group, not just your neighbor (3) it is VERY important that you are honest. Do not just agree with others or say what you think WE or others in the group want to hear. Personal and HONEST opinions are important.
  - Room description, backroom observers, audio and video recording

- Objective/Topic of Discussion:
  We want to learn more about…
  - your attitudes and behavior related to the use of electricity (as well as those of your family)
  - your family's home and circumstances as they relate to energy use
  - your opinions of some programs the utilities offer to help their customers

- Introductions: Tell us about yourself:
  - Name
  - Where you live
  - What type of home is it (single family, townhouse, condo, apartment)
  - How long you've lived there
  - How many in your household
  - And share with us one current source of frustration that perhaps keeps you from doing more of the things that you would like to do?

II. OVERALL ENERGY HABITS AND USE (15 minutes)

OBJECTIVE: Understand energy efficient and inefficient habits and behaviors. Determine barriers to adopting more energy efficient behaviors.

1. I'd like to begin by asking you to tell me a little bit about your home – and in particular, how you and other members of your household use energy.
   - What do YOU think are the biggest contributors/causes to the energy that is used in your home?
     - Probe for:
     - Behaviors
     - Family Members (attitudes, behaviors)
     - Appliances and electronics (number, age, etc.)
     - Attitudes (interest in saving energy)
   - What are the main benefits to you of using energy in your home? PROBES: How does it affect your life at home?
     - E.G.: Helps keep the routines of your household, physical comfort, safety, entertainment and enjoyment, income (if you work at home), getting more things done, taking care of your family, dong things with others, etc.
     - Which is most important?
   - Would you say that your household is using more or less energy than it has in the past? Why? Why not?
     - Are you actively trying to? Why? Why not?
     - If so, what are you doing to try to? And, do you think these efforts have helped you? Why or Why not?
   - Do you think your household uses more or less energy in relation to others in your community?
     - Show of hands, who thinks they use more?
     - Who thinks they use less?
     - If you think you use more, why is that?
       - PROBES:
         - Number of people
         - What different household members do in your home
         - The condition of home itself
         - The age and condition of appliances
         - The number of appliances or electronics in your home

        - How you use your appliances
- If you think you use less energy, why is that?
    - SIMILAR PROBES

III. CONSERVING ENERGY (25 minutes)

OBJECTIVE: Understand awareness, knowledge, and beliefs about their own capabilities to reduce energy use.

1. When you hear messages or people telling you about the need to conserve or use less energy, or about things you can do to use less energy, what do you think about these types of messages?
   - Do you pay attention or tune out?
     - Why? What motivates you to pay attention or tune out?
       - E.g., pay attention because you want to save money, already doing all you can so you ignore it
   - Who are you most likely to listen to or pay attention to regarding messages to use less energy? Is it a company, a friend …Who is it?
     - PROBES:
       - Southern California Edison?
       - Appliance manufacturers?
       - Government?
       - Friends or neighbors?
     - FOR EACH: Why are you most likely to listen to this source?

2. To what extent do you and others in your household try to <u>actively</u> conserve or save energy … Do you and your household try hard to save energy, or not so hard?
   - IF TRY HARD: Why do you say that you try hard?
     - What are some examples of what you do?
   - IF DON'T TRY HARD: Why do you say that you don't try hard?
     - What don't you do that you think you should?
   - To the extent that you or your household tries to save energy, what is the main reason that you do this? What prompts you to actively conserve energy? (PROBE: MONEY, ENVIRONMENT, COMFORT, PRESSURE FROM OTHERS (WHO?), ANYTHING YOU'VE SEEN OR READ, ETC.)
   - Have you been successful in saving energy?
     - What are the biggest barriers that hold you back or keep you from using less energy than you currently do?
     - Do other members of your household share this opinion – or do you think they might see other reasons for NOT saving more energy?

3. Tell me the things that you feel you CANNOT control or change with regard to your energy use?
    - PROBES:
        - Condition of home or appliances
        - The number of appliances and electronics
        - Habits: turning off lights and TVs, turning off the heat or AC when you leave your home, etc.
        - Knowledge: not knowing how much energy is actually used for different appliances, etc.
        - Need for energy for: comfort (heating and cooling), work (computers), entertainment (TV), saving time (dishwasher), etc.
        - Habits or behavior of others

4. What sort of things do you feel you CAN control or change with regard to your energy consumption?
    - SAME PROBES

5. Now that we've had this discussion, what do you think are the top 2 or 3 things that would help your household use less energy?
    - Why do you think these will help?

IV. FINANCIAL CHALLENGES & PAYING THE UTILITY BILL (10 minutes)

OBJECTIVE: Gain insights into knowledge about resources and strategies for dealing with a high electric bill.

1. In a minute I am going to ask your opinion about a specific energy efficiency program offered by your utility, but before I do that, I'd like to get a sense from you about how the current economic situation has impacted your ability to pay your bills.
    - How many of you have had difficulty paying your electric bill this past year?
        - Is the electric bill harder or easier to pay than some of your other bills?
            i. Why is that?
    - How do you try to deal with your electric bill when you are in a situation where you know it's going to be a difficult bill to pay?
    - Do you think about getting outside assistance?
    - Where would you think to turn for assistance with high energy bills, keeping in mind that there are many different ways that you might deal with this?
        - What kinds of help would get your attention and make the most sense to you?
            i. <u>Financial</u> help like a discount or help with a payment?
            ii. <u>Physical</u> help like fixing old appliances or insulating your home?
            iii. <u>Advice or educational assistance</u>, informing you what you can do to change your energy use?
        - What do you think about these types of assistance?
            i. Benefits to you?
            ii. Negatives? (e.g., too time consuming to help, hurts self-respect, doesn't really help, etc.

2. [IF TIME PERMITS] How many of you are currently receiving a discounted rate through your utility? (*IT SHOULD BE ALL – IF THEY KNOW)*
    - How did you learn about this program?
    - Have you ever told others you know about this program?

V. AWARENESS AND INTEREST IN THE LIEE PROGRAM (40 minutes)

OBJECTIVE: Gain insights into customer awareness and perceptions of the program, as well as barriers to participation.

1. Are any of you familiar with any other programs that your utility offers to help customers reduce their energy consumption?
   - Tell me the names or a description of the programs you are familiar with?
   - Can I see a show of hands if you have participated in any of these programs?
     - Which programs?
     - What prompted you to participate?

MODERATOR READ:

Southern California Edison offers a program that provides energy efficiency products and services to some customers at no cost. A qualifying household can receive a mix of different services, depending on its needs. Some of the things provided by the program include: informational materials and tips on saving energy, compact florescent bulbs, attic insulation, energy efficient refrigerators, evaporative coolers, caulking, and in some areas air conditioning units. The program also offers maintenance services for some appliances to insure that they are working properly and not "wasting" energy.

2. How many of you have heard of this program?
3. Beyond what I just described… what else do you know about this program?
   a. What does it include?
   b. How can someone participate?
   c. How do I qualify?

4. Have any of you participated in this program, or one like it?
   - What do you know about the program, other than what I just told you?
   - Has anyone participated in a program like this one,? – either offered by your utility or by another entity?
     - The Federal government also offers a similar program called "LIHEAP". Are any of you familiar with this?
     - Are you aware of any ways that the Edison program is different than the Federal Program?
   - For those of you who have participated in this or a program like it, what enticed you to participate?

- What was the most important reason that you participated?

- What would you tell friends who were qualified for the program were the strengths and weaknesses of it?

5. Now, for the rest of the group, does this program sound like something that would be helpful to you or your household?
   - [SHOW OFF HANDS YES] Why?
   - [SHOW OF HANDS NO] Why not?
   - What is it about the program that you find appealing?
   - What are the negatives of the program, or reasons you might hesitate signing up for it?
   - Assuming that you are eligible, based on what you have heard so far, how many of you would consider participating in a program like this?
   - What is the main reason that you WOULD participate? PROBE FOR SPECIFIC ASPECTS OF THE PROGRAM THAT SOUND APPEALING – INFORMATION, GETTING A NEW FRIDGE, ETC?
   - What, if anything, might keep you from participating in the program?

6. Now that you know a little bit about the program, I would like to get your reaction to the process that customers go through in order to participate in the program.

   First, customers have to find out about the program, and tell Edison that they want to participate.

   - How should Edison inform customers like yourselves about this program? PROBE EACH OF THE FOLLOWING FOR POSITIVES AND NEGATIVES:
     - Mail
       - In with you bill, or separate from your bill
     - Email messages
       - If you knew about an option where you could sign up with Edison to receive information about their programs, would you be willing to give them your email address or your mailing address for this purpose?
       - Why? Why not?
     - An automated phone call that would allow you to enroll in the program immediately, by answering a few questions using the keypad of your phone

        - Positives or negatives?
        - Should the auto message tell you how long it takes to go through the questions?
        - What would the introduction need to keep you from hanging up?
        - Should it include an option to speak to a live person?
    - Radio ads
    - Inserts in coupon packs (e.g., Valpak)
    - Door-to-door – a representative knocks on your door and explains the program to you
    - Flyer left at your door
    - At community events like local fairs
    - Through local assistance programs, organizations, and non-profits … these are places you might hear about in your community where you could meet someone and fill out an application
- Can you think of any other ways that you'd like Edison to use to inform you about a program like this one?

Second, the customer has to complete an application with your name, address, and household income (including all members of the home).

- Is completing an application much of a barrier? Would any of you hesitate at this point? Why?
- You will also be asked to provide a verification of your household income such as pay check stubs or tax returns. Do you foresee any issues or problems with this step of the process?

Third, Edison schedules an evaluation visit, where a trained energy evaluator goes through the home to identify what improvements might be needed or that you are qualified for. For example, if you have an old refrigerator you might qualify for a new one, but if you already have a newer refrigerator, you would not qualify.

- Would this step cause anyone to hesitate? Would this be a problem for anyone here – to have an Edison rep walk through your home to conduct an inspection?

Fourth, another appointment is scheduled where the improvements are completed. Some people also get a follow-on appointment where an inspector reviews the completed work.

- Now I want to ask you again, assuming that you are eligible, how many of you would consider participating in this program?
    - IF NO: Why not?
- What, if anything, might keep you from participating in the program? (e.g., worried that it is too good to be true, never home for the appointments, etc.)

7. One part of this program includes talking with customers and giving them a packet of information that offers tips and information on how to be more energy efficient.
    - Would this be helpful to you?
    - Would you open and read the information that is left for you?
    - What type of information would you want it to include?
        - E.g., how much energy different appliances or electronics use, checklists, directions on how to buy more efficient appliances or electronics, helpful hints, etc.
    - Instead of a package of information to read, would some other method of teaching you work better? (e.g., DVD or online video like on YouTube, a DVD or online training class where you would learn some things and then answer some questions and receive a certificate of completion (like online traffic school), a class you would attend in person, etc.)
    - How about monthly feedback or reminders from Edison?

8. To promote this program, Edison will use short messages – I'd like your reaction to some of these:
    - 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.
    - The program is FREE to participants / The program is NO COST to participants.
        - Probe: "free" vs. "no cost."
    - Helps your household use energy more efficiently / Helps your household use less energy.
        - Probe: "use less" vs. "use more efficiently."
    - The program helps ensure resources for future generations.

V. CONCLUSION (5 minutes)

OBJECTIVES: Summary and final comments.

1. I am going to go into the back room now to see if they have any final questions for me to ask you. (LEAVE AND RETURN. ASK FINAL QUESTIONS)
2. Do *you* any final comments?

THANK YOU VERY MUCH!