PROCESS EVALUATION OF THE 2001 STATEWIDE LOW-INCOME ENERGY EFFICIENCY (LIEE) PROGRAM

Final Report

VOLUME 1

Prepared for

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Southern California Gas Company
San Diego Gas & Electric Company
Pacific Gas and Electric Company

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EXECUTIVE SUMMARY

This document presents the results of KEMA-XENERGY's process evaluation of the statewide Low Income Energy Efficiency (LIEE) program, covering program year (PY) 2001, as well as Rapid Deployment. The participating utilities are Southern California Edison Company (SCE), Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric Company (SDGE), and Southern California Gas Company (SCG). Southern California Edison Company (SCE) managed this project on behalf of all the California investor-owned utilities (IOUs).

The major evaluation activities associated with this effort were conducted in early to mid-2002, with the participant survey being fielded at the end of 2002. The major issues identified by this evaluation were presented in August 2002 at a public workshop, and accordingly, the utilities may have addressed some of the issues that this report documents. We have noted in the report such changes that have occurred only as they directly relate to recommendations.

E.1 OBJECTIVES AND APPROACH

The evaluation was designed to include both process and impact evaluation components. The process evaluation is intended to identify program design elements and/or processes that have changed in PY2001 and to assess the effectiveness of these changes in addressing the objectives of the program and Rapid Deployment in particular. The impact evaluation will provide first-year load impacts attributable to the PY2001 LIEE program. The results of this evaluation are reported in Volume II of this report.

KEMA-XENERGY's approach to the process evaluation included:

- In-depth interviews with utility program staff, implementation contractors, and subcontractors
- "Ride-alongs" and telephone interviews with program outreach workers and installation crews
- On-site visits to utility training facilities
- Review of program documents and tracking data
- Telephone survey with program participants.

E.2 OVERVIEW OF CONCLUSIONS AND RECOMMENDATIONS

This section provides an overview of the study findings and recommendations.

E.2.1 Rapid Deployment

Mid-year PY2001, the utilities were ordered by the California Public Utilities Commission (CPUC) to implement Rapid Deployment,[1] an effort intended to increase and expand the level of LIEE program services provided during 2001 in an attempt to help reduce the effects of the State's energy crisis on low-income residents. The State legislature authorized additional funding for the LIEE program, and with carryover funds from the previous LIEE program year, the utilities expanded their program offerings to low-income customers. Six new measures were added, and eligibility requirements were expanded for existing LIEE program measures.

The utilities successfully expanded their participation and met increased measure goals through ramping up their existing operations, expanding coordination with other low-income program providers and community groups, and returning to prior participants and providing them with new measures under the expanded eligibility requirements.

The utilities encountered some problems with some of the new measures. In particular, contractors struggled with the installation of whole-house fans due to the extensive carpentry requirements. Some utilities' contractors experienced difficulties with room air conditioners (code issues, sizing) and duct testing and sealing (lack of experience, inability to purchase testing equipment). The setback thermostats posed issues for some customers because of the complexity of its programmable feature.

Customers were satisfied with the expanded treatment they received with under Rapid Deployment. In particular, they appreciated the increased comfort and decreased energy costs associated with air conditioners (central and room) and setback thermostats. It was apparent that, although many customers appreciated the setback thermostat for its effects on comfort and energy costs, only one-quarter were knowledgeable about and using its programmable features.

E.2.2 Standardization of the Statewide LIEE Program

The utilities have formed several statewide teams with the intent of standardizing LIEE programs and utility reporting to the CPUC. The Utility Standardization Project, which includes the utilities, the CPUC's Energy Division and the Office of Ratepayer Advocates, has focused on standardizing policy and procedural elements of the LIEE Program. The major accomplishments of the Utility Standardization Project are the Statewide LIEE Policy and Procedures Manual and Statewide Weatherization Installations Standards.

Generally, contractors and program staff have incorporated the WIS and Policy and Procedures Manual into program implementation seamlessly. The new manuals mostly formalized the existing practices, and where new practices were introduced, contractors were able to "come up to speed" quickly. The only major issue with the new standards concerns the income documentation retention requirement that affected PG&E, SCE, and SDG&E contractors (SCG already implemented this policy). The new policy dramatically affected the eligibility process,

[1] Decision 01-05-033.

requiring multiple visits to participants to collect documents, causing dissatisfaction among customers with having to locate and provide many sensitive proof-of-income documents, and leading to refusals to participate among some customers, particularly the elderly, who were unwilling or unable to provide the required documents.

Recommendations concerning the standardization of program policies and procedures include:

- Allow program administrators some flexibility regarding program implementation to account for hardship situations and to help tailor programs to unique circumstances
- Continue to solicit installation contractor feedback and keep them contractors "in the loop" with regard to proposed changes to policies and procedures
- Carefully consider the income document retention policy due to the effect it is having on program implementation.

E.2.3 Providing Comprehensive and Coordinated Treatment to LIEE Program Participants

The concept of comprehensive treatment refers to the practice of assessing each eligible LIEE participant for all measures offered under the program, i.e., electric measures if the customer receives electricity from an IOU and gas measures if the customer has IOU gas service. At minimum, the utility whose agency initially enrolls a customer would assess the home for all measures that they offer under the program. In PY2001, all of the IOUs except SCE comprehensively assessed customers for the measures offered by their programs. SCE customers were required to initiate separate processes to receive comprehensive electric service due to SCE's program design.[2] That is, SCE customers were not automatically assessed for and provided with all electric measures for which they were eligible in one step. However, in light of a recent CPUC ruling that says that LIEE participants must receive comprehensive treatment, going into PY2002 SCE was revising its program in order to comprehensively assess for all eligible electric measures.

Coordinated treatment refers to providing customers residing in IOU overlap areas with comprehensive electric and gas treatment. Currently, where one IOU provides gas service and another IOU provides electric service, customers must initiate separate processes to receive both electric and gas measures through the program. The exception is where SCG weatherization contractors encounter a SCG customer with electric heat provided by SCE. Through the Inter-Utility Agreement, SCG contractors can provide weatherization to the home, and SCE reimburses SCG for the work. This does not happen often as only a small percentage of SCG

[2] The PY2000 Process Evaluation of the Statewide Low Income Energy Efficiency Program (KEMA-XENERGY) provides a detailed description of the steps a SCE low-income customer would have to take to receive comprehensive treatment. The report may be downloaded from www.calmac.org.

customers' homes are heated with electricity when gas service is available in the area.[3] Thus, treatment provided in IOU overlap areas is not extensively coordinated between the utilities.[4]

The benefits associated with comprehensive treatment are increased program consistency and efficiency. Program consistency would be increased, as SCE customers would be assessed for all the measures offered under SCE's program, consistent with how the other utilities implement their programs. Program efficiency would be increased because SCE would provide the full range of measures to each qualified customer, as opposed to identifying a unique set of customers for each measure. The outreach, assessment, and energy education costs associated with providing measures to separate groups of customers should be reduced because measure goals could be met by reaching fewer customers.

The benefits of providing overlap customers with coordinated treatment would also be increased consistency of service across the state and increased program efficiency. Program consistency would be improved because overlap customers would be served almost as if they had only one IOU. Customers would not be required to contact their utility to receive measures, and they would not have to go through the enrollment, education, and assessment processes twice. Their treatment would be consistent with dual-fuel utility customers. Program efficiency would be improved because the utilities would experience cost savings associated with reducing the outreach, assessment, and energy education components of the program because some percentage of their participants would be identified, enrolled, assessed, and provided with energy education by another utility's contractor. These costs could be shared between the two utilities providing measures to the customer.

An obvious drawback to comprehensive treatment is that fewer households can be treated overall (assuming fixed program budgets). There are also some potential drawbacks associated with providing coordinated treatment to customers in IOU overlap areas. As each utility begins to provide participants of the other utility's program with their measures more systematically and on a larger scale, the number of customers that each utility can reach will likely be decreased significantly, assuming that the program budgets remain the same. Additionally, unique targeting approaches that the two utilities have traditionally employed might be compromised to an extent as its measure goals are increasingly met through providing measures to customers the other utility's contractor has identified.

Recommendations regarding the provision of comprehensive and coordinated treatment to LIEE program participants are summarized below:

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[3] Although the exact percentage is unknown for SoCalGas, only 2% of PG&E homes that have gas service available use electricity for space heating. (PG&E 1994 Residential Energy Survey)

[4] The major IOU overlap area in California is the portion served by SCE and SoCalGas, comprising about 85 percent of low-income customers located in SCE's territory, and 50 percent of low-income customers located in SoCalGas's territory. (These figures are based on the Joint Utility Methodology for estimating CARE eligibility and penetration.

- To increase program efficiency and consistency of treatment, SCE should assess for and provide customers with all electric measures offered under their program. [5]
- SCE and SCG should examine the tradeoffs of increasing the extent of coordination in the shared portion of their territories so that customers are assessed for measures offered by both programs.[6]

E.2.4 Administration of Programs

The utilities have administered low-income programs for over two decades, and as such, the administrative and implementation models have been well tested. Many of the staff that currently administer or implement the programs have been involved with the programs for many years. The extensive program history, continuity of staff, and relatively static program design have helped the programs to run smoothly and efficiently.

The only significant issues with regard to program administration that were identified through this evaluation concerned the effects of PG&E's transitioning to an outside administrator. The effect on program implementation due to the administrative changes that occurred at PG&E in PY2001 was minimized in part due to the fact that RHA and its staff had been administering PG&E's program for many years prior to PY2000. Many of the implementation contractors and their staff had also worked for the program for many years, and relationships existed among RHA and the contractors and community-based organizations.

However, transitioning responsibilities from PG&E to RHA did cause some contractor dissatisfaction. The main complaint that contractors expressed with respect to the administrative flux was redundancy in administrative oversight. Contractors also were affected by a lengthy payment process.

Recommendations regarding PG&E program administration include:

- Consider reducing PG&E's administrative presence to help improve program efficiency and to maximize RHA's administrative effectiveness
- Clearly define and communicate administrative roles and responsibilities to all parties involved in implementation
- Consider paying contractors as they provide service instead of after the post-inspection.[7]

[5] SCE has modified its program so that in the future it may provide comprehensive treatment to all LIEE program participants.

[6] SCE and SoCalGas are currently negotiating to provide a comprehensive assessment to all customers who receive weatherization services under SoCalGas's program.

[7] PG&E has modified its program so that it currently pays contractors "as they go".

E.2.5 Program Outreach and Energy Education

The utilities employ a fairly standardized approach to program outreach. They utilize a mix of private contractors and nonprofit agencies to locate eligible participants. The outreach process also enrolls customers in the CARE program (if they are not already enrolled), refers them to other low-income programs, and provides them with energy education.

In PY2001, PG&E, SCE, and SCG were working to improve the education they provide to their customers through the program. PG&E replaced the energy survey with an interactive "energy wheel," and SCE and SCG coordinated on the development of a comprehensive resource guide that would cover both electric and gas measures.

Customers were generally satisfied with the outreach process, including energy education. CARE enrollment and energy education were regarded the highest by customers.

Recommendations concerning program outreach and energy education are summarized below:

- The utilities should continue to look for leveraging opportunities with the Low Income Home Energy Assistance Program to enhance the level of service provided through both programs. The utilities should capitalize on PY2001 efforts to expand outreach activities to hard-to-reach areas. In addition, customer referrals to other low-income programs is a good practice and should be continued.
- The usefulness of CARE participant lists as a way to identify LIEE program leads has been questioned. However, these lists may still be helpful in identifying LIEE program target areas.
- Efforts by SCE and SCG to develop formal and comprehensive energy education materials are well directed. They should continue with plans to train contractors on use of the materials and should formally incorporate use of the materials into the outreach process.
- PG&E's revised energy education has been well received by both customers and contractors, and PG&E should continue to offer its new on-site, customized energy education to customers. PG&E's contractors should be certain that customers understand how to locate their average rate so they are best able to utilize the information provided to them.

E.2.6 Contractor Training

Contractor training is fairly standardized across the utilities. Outreach workers are trained on program policies and procedures for determining income eligibility, performing basic measure assessment, and on special considerations of the low-income community. Installation crews are trained on installation standards in addition to program policies and procedures.

Contractors in general felt that the training they received through the program is valuable and prepares them for the more hands-on training they will receive in the field.

Only one recommendation concerning contractor training was developed through this evaluation:

- SCE and SCG should incorporate the new energy education component into their formalized contractor training.

E.2.7 Inspection Process

Each program uses inspections to monitor contractors and assess customer satisfaction with the program. A high percentage of installation jobs are inspected by the utilities or their contractors after the installation (post-inspection). PG&E additionally performs pre-inspections, verifying the measures assessed by the contractor. During the pre-inspection visit, PG&E also performs a combustion appliance safety (CAS) test if the customer has one or more natural gas appliances.

Prior to PY2001, each of the utilities performed some or all of the post-inspections. New to PY2001, SCE and SCG were required by the CPUC to outsource the inspection functions because the utilities administer programs in-house.

The CAS test and the pre-inspection, which are performed during the same visit, add an extra step between enrollment and measure installation to PG&E's program. Additionally, customers who fail the CAS test must go through a separate process in which PG&E (or the landlord for renters) attempts to repair the faulty equipment.

There is a high level of concern among all of the utilities' customers who have natural gas-fired appliances about the safety of those appliances. The program in general had an effect on the perceived safety of the home, where almost all participants with gas appliances (80 percent) felt safer as a result of participating in the program. The CAS test in particular did not seem to affect participants' perceptions of the safety of their home, in that PG&E participants who recalled receiving the CAS test did not feel any safer than participants of the other utilities' programs.

PG&E participants who recalled receiving the CAS test did not express dissatisfaction regarding the potential "hassle-factor" they experienced due to the extra visit and possible delays in receiving program measures. The only factor that did significantly affect the perceived length of service was the type of measures received, such as refrigerators.

It should be noted that the Standardization Team will be formally addressing the CAS test as part of its Phase IV efforts. In the meantime, based on the findings from this evaluation, it is recommended that:

- Where possible, PG&E should attempt to reduce the number of visits required to administer the CAS test to its LIEE participants to reduce the hassle and length of time required to receive program services.

E.2.8 Program Measures

The LIEE program offers customers a variety of measures, including weatherization measures and appliances. This evaluation gathered feedback on measures from contractors and customers, and also included a limited number of in-field observations. Recommendations regarding specific program measures include:

- The hours of usage of fixtures should be systematically considered by contractors when providing CFLs to customers. The utilities should consider adjusting the number of CFLs provided per household based on program cost-effectiveness.
- Appliance replacement eligibility requirements should be keyed to a specific year in which there is an applicable standard (e.g., the 1993 refrigerator efficiency standards).
- Due to its expense and permitting process, the utilities should consider offering refrigerator grounding only for hardship cases or where customers are very unlikely to be able to ground the outlet themselves.
- Utilities should consider assessing the cost-effectiveness of sunscreens as a program measure (for applicable climate zones).
- Utilities should increase the emphasis on training customers on the use and benefits of programmable thermostats in order to improve this measure's effectiveness.

E.2.9 Tracking of Customer Satisfaction

As part of ongoing quality assurance, the utilities track customer satisfaction through telephone and mail surveys. Customer satisfaction surveys administered shortly after delivery of service are a valuable way for utilities to identify potential problems as they occur. SDG&E and SCE use a mail survey, while PG&E relies on a telephone survey. Mid-year PY2001, SCG was planning on incorporating an ongoing telephone customer satisfaction survey, as in the past, they had relied upon periodic evaluations.

Recommendations regarding the tracking of customer satisfaction are listed below:

- Ongoing tracking of customer satisfaction is a valuable component of quality assurance and should be continued.
- SCG should follow through with its plans to add an ongoing customer telephone survey.

1 INTRODUCTION

This report presents the results of a process evaluation conducted for the California Low Income Energy Efficiency (LIEE) program, covering program year (PY) 2001, as well as Rapid Deployment. The major evaluation activities associated with this effort were conducted in early to mid-2002, with the participant survey being fielded at the end of 2002. The major issues identified by this evaluation were presented in August 2002 at a public workshop, and accordingly, the utilities may have addressed some of the issues that this report documents. We have noted in the report such changes that have occurred only as they directly relate to recommendations.

1.1 BACKGROUND

Each of the four California investor-owned utilities—Southern California Edison, Southern California Gas, San Diego Gas & Electric, and Pacific Gas & Electric—implemented the LIEE program during PY2001. In addition, the utilities were ordered by the California Public Utilities Commission to implement Rapid Deployment,[1] an effort intended to increase and expand the level of LIEE program services provided during 2001 in an attempt to help reduce the effects of the State's energy crisis on low-income residents. The State legislature authorized additional funding for the LIEE program, and also with carryover funds from the previous LIEE program year, the utilities expanded their program offerings to low-income customers. Six new measures were added, and eligibility requirements were expanded for existing LIEE program measures.

In addition to this process evaluation, KEMA-XENERGY has conducted an impact evaluation for the PY2001 LIEE program and Rapid Deployment. The results of this evaluation are reported as Volume II of this report.

KEMA-XENERGY also conducted a comprehensive process and impact evaluation of the LIEE program for PY2000.[2] The process evaluation component of this study focused on documenting each utility's program processes, highlighting similarities and differences across utilities and recommending "best practice" policies and procedures. This prior effort provided much of the foundation upon which the results of this current process evaluation have been developed.

1.2 OVERVIEW OF OBJECTIVES AND APPROACH

The objective of this process evaluation was to identify program design elements and/or processes that have changed in PY2001 and to assess the effectiveness of these changes in addressing the objectives of the program and Rapid Deployment in particular. The basic elements of the process evaluation approach included:

[1] Decision 01-05-033.

[2] This report may be downloaded from www.calmac.org.

- In-depth interviews with utility program staff, implementation contractors, and subcontractors
- "Ride-alongs" and telephone interviews with program outreach workers and installation crews
- On-site visits to utility training facilities
- Review of program documents and tracking data
- Telephone survey with program participants.

1.3 ORGANIZATION OF THE REPORT

This section has provided a brief background on the LIEE program in PY2001, including Rapid Deployment, along with an overview of the evaluation objectives and approach. Section 2 provides a more detailed description of the process evaluation data collection methods. Section 3 provides a brief history of the LIEE program, along with a description of each component of the LIEE program for each utility. Section 4 presents findings from the process evaluation and Section 5 contains recommendations for program improvements and best practices. Appendix A provides the program staff interview guide, and Appendix B provides the contractor interview guide. Attachment C includes the participant survey questionnaire with overall frequencies of each survey question. Cross-tabulations of survey questions by key variables for each utility are provided separately.

2 STUDY APPROACH

2.1 APPROACH

KEMA-XENERGY's approach to the process evaluation included the following:

- Detailed review of program documentation
- In-person interviews with key program staff for each utility (including administrators, where different from the utility)
- Customer "ride along" visits with one agency per utility (outreach and installation)
- Customer "ride along" visit with Pacific Gas and Electric (PG&E) Central Inspections (pre- and post-inspection)
- Telephone interviews with the majority of contractors (outreach, installation, inspection)
- On-site visits of the PG&E Stockton Training Center and the Southern California Gas Company (SoCalGas) Training Center
- Analysis of tracking databases
- Mapping of contractor territories
- Telephone interviews with a sample of program year (PY) 2001 Low Income Energy Efficiency (LIEE) program participants.

The following provides an overview of the project activities that have contributed to this process evaluation:

- **Project Initiation Meeting**. This evaluation began with a project initiation meeting to clarify the overall project objectives, identify available data sources and their limitations, and discuss pros and cons of different evaluation approaches presented in our initial proposal. This meeting also provided an opportunity to review and revise the evaluation schedule and to establish the project management and reporting protocols.

- **Data Request.** KEMA-XENERGY prepared a detailed data request, identifying the utility-specific program materials needed to carry out both the process and impact evaluation components. We requested extracts from program tracking databases, organizational charts, and contact information for key staff and contractors; program manuals and handbooks, service-delivery-related paperwork, budgetary documentation, and marketing plans and promotional materials; participation statistics, contractor territory assignments, low-income demographic information, and

relevant reports such as the Bill Savings Report and the reports and program manuals associated with the LIEE Standardization Project.

- **Program Materials Review.** KEMA-XENERGY reviewed program materials to gather basic program intelligence and gained insight that aided in the interviewing process. The information contained in the program materials, as well as the input obtained during the project initiation meeting, formed the basis for developing the program staff/vendor interview guides. The review of program-related materials included the following for each utility:
    - Program organizational and management structure
    - Service delivery mechanisms and disbursement of work
    - Customer complaint process
    - Internal administrative procedures and quality controls
    - Payment and disbursement of funds
    - Inventory/materials controls and safeguards
    - Contractor territories, by ZIP code and/or county
    - Program tracking database analysis
    - Data processing and record retention.

  The information gathered through this review was used first as an update on program changes that have occurred since the PY2000 evaluation, and, second, to characterize how the utilities implemented Rapid Deployment. These issues were discussed during the interviews with program staff and vendors to identify areas where improvements can be made and to identify areas that might be considered as best-practice benchmarks for the program.

- **Staff Interviews.** KEMA-XENERGY staff conducted in-person interviews with the appropriate staff at each of the utilities, including administration contractors where applicable. These interviews were designed to identify areas where the program has been modified to address Rapid Deployment in PY2001. The interviews were initiated with our understanding of the utility program operations, followed by a brief discussion of each program design and/or process change. The interviews were followed by an assessment of the degree to which these changes have been successful or are in need of further modification. Appendix A provides the program administrator/implementer interview guide.
- **Customer Outreach/Measure Installation Ride-Along Visits**. Customer ride-along visits were conducted with at least one major contractor in each utility's service territory where possible. In San Diego Gas & Electric's (SDG&E's) territory, ride-along visits were conducted with SDG&E's implementation contractor. We observed three outreach/customer eligibility verification visits, one weatherization installation job, and one HVAC assessment visit where a duct test was performed. In SoCalGas's

territory, ride-along visits were conducted with one of SoCalGas's community-based organizations. An in-depth interview was conducted initially with management and clerical staff, followed by three customer outreach/customer eligibility verification visits. For Southern California Edison (SCE), we conducted an on-site in-depth interview with the owner and primary outreach staff person of one of their private weatherization contractors. We did not conduct a ride-along visit in SCE's service territory. In PG&E's territory, we conducted outreach/customer eligibility verification visits with two of PG&E's community-based organizations in San Francisco and Stockton, for a total of four visits. Appendix B provides the contractor interview guide.

- **Customer Inspection Visits**. Six inspection visits were conducted in PG&E's territory with a staff person from PG&E's Central Inspection Program. During the pre-inspection visit, homes that have combustion appliances receive a Combustion Appliance Safety (CAS) test. The first three visits were pre-inspection/CAS test visits, and the last three visits were post-inspection visits.
- **Contractor Telephone Interviews**. After the customer ride-along visits were completed, telephone interviews were conducted with the majority of each utility's outreach, inspection, and installation contractors.
- **On-site Training Center Visits**. Both PG&E and SoCalGas have training centers that provide hands-on and classroom training for LIEE program outreach workers, installation crews, and inspectors. We conducted on-site visits at both training centers. The visits consisted of in-depth interviews with key training center management staff, followed by a tour of the facility with a detailed explanation of the services each center provides. Relevant training materials were also obtained.
- **Participant Survey.** A participant survey was administered as part of the process evaluation in late 2002. This survey included questions regarding overall satisfaction with the program, satisfaction with various program elements, and suggestions for program improvement. A total of 1,000 participants were interviewed, 250 per utility. Appendix C provides overall frequencies of each survey question, and cross-tabulations of survey questions by key variables for each utility are provided separately.

3 PROGRAM DESIGN

This section presents an overview of the Low Income Energy Efficiency (LIEE) program history, as well as a summary of program year (PY) 2001 accomplishments and plans for PY2002. The remaining sections describe each utility's LIEE program as it was designed going into PY2002.

3.1 LIEE PROGRAM HISTORY

Since the early 1980s, California's investor-owned natural gas and electricity utilities have offered programs designed to support energy services to the low-income community. These programs have taken a number of forms. At this time, all four utilities administer both California Alternate Rates for Energy (CARE) and LIEE programs. The LIEE programs consist of weatherization, appliance repair or replacement, and energy education components.

The LIEE program provides assistance to low-income customer groups throughout the state. The assistance includes installation of energy-efficiency measures, energy education, and repair and/or replacement of space heating and evaporative cooling equipment. The program serves an important equity objective in assisting customers who are highly unlikely or unable to participate in other residential conservation programs because of income constraints. This program allows income-eligible customers to receive the benefits of energy conservation without the hardship of making cash investments.

The utilities use a variety of community-based organizations (CBOs) and local private contractors for locating and recruiting households who qualify for program participation; i.e., households whose annual income is less than 175 percent of the Federal Poverty Guidelines (FPG) and 200 percent of the FPG for seniors and the disabled.[1] Staff from these entities are trained by each utility or utility representatives in the installation of ceiling insulation and other conservation measures.

Measures included in the standard LIEE program include:

- Evaporative cooler installation (permanent or portable)
- Relamping
- Weatherization
- Energy education
- Refrigerator replacement
- Porch lamp fixture replacement

[1] Low-Income Weatherization Income Limits established by the California Public Utilities Commission, Decision 01-06-010, dated June 7, 2001.

- Furnace repair and replacement.

New LIEE measures instituted for Rapid Deployment in PY2001 include:

- Replacement of inefficient air conditioners with high-efficiency models (central systems and window/wall units)
- Duct sealing and repair
- Whole-house fans
- Replacement of inefficient or inoperable water heaters with high-efficiency units
- Setback thermostats
- Evaporative cooler maintenance.

Also, renters are now eligible across all service territories to receive evaporative coolers, air conditioners, water heaters, refrigerators, and hard-wired lighting fixtures. (In the past, only home and/or appliance owners were eligible for these measures.)

3.2 PROGRAM GOALS AND ACHIEVEMENTS

Over 180,000 low-income homes in California received services through the LIEE program in PY2001. As shown in Table 3-1:

- Over 67,000 homes received weatherization
- Over 5,000 received gas furnace repair or replacement
- Over 22,500 received a new energy-efficient refrigerator
- Over 7,000 received an evaporative cooler to help offset central air conditioning use
- Over 1,100 received a new efficient air conditioner
- Almost 2,500 received a new efficient water heater
- Over 500 received a setback thermostat
- Over 4,000 received maintenance on their existing evaporative cooler
- Over 350,000 CFLs were distributed to homes in 2001.

Total program costs for PY2001 were just under $85 million, as shown in Table 3-1.

Table 3-1
PY2001 LIEE Costs and Unit Accomplishments

	PG&E		SDG&E		SCG		SCE		Total	
	Expenses ($000)	Dwellings Served	Expenses ($000)	Dwellings Served	Expenses ($000)	Dwellings Served	Expenses ($000)	Dwellings Served	Expenses ($000)	Dwellings Served
Furnaces										
Gas Repair	76	453	47	685	100	397	-	-	223	1,535
Gas Replacement	222	535	593	410	3,907	2,962	-	-	4,722	3,907
Electric Repair	0	0	0	0	-	-	0	0	0	0
Electric Replace	0	0	0	0	-	-	0	0	0	0
Total Furnaces	298	988	640	1,095	4,006	3,359	0	0	4,944	5,442
Infiltration & Space Conditioning										
Caulking	680	16,957	547	9,941	50	3,413	58	917	1,335	31,228
Door Weatherstripping	1,107	15,991	410	8,685	2,871	32,730	142	1,580	4,530	58,986
Cover Plate Gaskets	277	16,547	62	7,003	486	28,597	49	1,361	874	53,508
Evaporative Cooler Covers	130	2,187	14	439	54	1,197	0	3	198	3,826
Window Replacement	0	44	[1]	[1]	0	0	2	23	2	67
Glass Replacement	0	2,417	[1]	[1]	0	0	0	0	0	2,417
Wall Repair (Exterior)	0	2,640	[1]	[1]	0	0	12	273	12	2,913
Door Repair	[1]	[1]	[1]	[1]	[1]	[1]	64	807	64	807
Door Replacement	[1]	[1]	[1]	[1]	[1]	[1]	15	101	15	101
Threshold Installed	[1]	[1]	[1]	[1]	[1]	[1]	13	539	13	539
Attic Ventilation	81	596	[1]	[1]	0	0	10	277	91	873
Attic Insulation	1,077	2,026	128	276	794	1,856	4	13	2,003	4,171
Attic Access Weatherstripping	[1]	[1]	0	0	0	0	1	34	1	34
HVAC Air Filter Replacement	108	9,438	0	0	0	0	0	0	108	9,438
Total Infiltration & Space Conditioning	3,460	16,956	1,168	9,941	4,255	32,730	372	1,592	9,255	61,219
Water Heating Savings										
Water Heater Blanket	78	3,056	19	951	193	4,296	8	134	298	8,437
Low Flow Showerhead	383	15,918	198	7,315	952	29,934	42	1,297	1,575	54,464
Water Heater Pipe Wrap	8	952	16	908	32	2,371	3	113	59	4,344
Faucet Aerators	139	18,758	77	9,280	459	31,544	9	649	684	60,231
Total Water Heating Savings	608	18,758	310	9,280	1,637	31,544	62	1,376	2,617	60,958
New Measures										
Central Air Conditioner	114	35	437	195	-	-	1,426	538	1,977	768
Room Air Conditioner	0	0	120	184	-	-	200	188	320	372
Duct Sealing & Repair	0	63	14	62	-	-	2	50	16	175
Whole House Fan	0	0	1	1	-	-	0	0	1	1
Water Heater	410	396	257	423	1,305	1,549	40	114	2,012	2,482
Set-Back Thermostat	23	179	22	334	-	-	1	40	46	553
Evaporative Cooler Maintenance	0	0	0	0	-	-	310	4,500	310	4,500
Miscellaneous Measures	0	0	579	3,249	0	33,046	34	207	613	36,502
Minor Home Repair	1,128	15,054	453	3,399	4,436	33,046	13	276	6,030	51,775
Evaporative Coolers	1,071	3,424	2	2	-	-	2,744	3,962	3,817	7,388
Refrigerators	4,465	5,767	2,779	5,484	-	-	6,113	11,574	13,357	22,825
Refrigerator Recycle	[2]	[2]	[2]	[2]	[2]	[2]	964	8,829	964	8,829
Compact Fluorescents (includes porch lights)	3,822	35,199	606	13,519	-	-	4,460	73,003	8,888	121,721
Porchlights (fixture replacement or CFBs)	[3]	[3]	8	17	[3]	[3]	[3]	[3]	8	17
Energy Education										
Outreach & Assessment	1,267	32,740	200	4,476	2,898	33,046	577	10,242	4,942	80,504
In-Home Education	2,111	32,740	777	14,839	0	32,869	1,736	97,635	4,624	178,083
Education Workshops	74	18,340	261	36,577	731	17,096	-	-	1,066	72,013
Total Energy Education [5]	3,452	51,080	1,238	55,892	3,628	49,965	2,313	97,635	10,631	254,572
Other Costs[4]										
	10,784		2,881		3,330		1,863		18,858	
TOTAL	**29,635**	**37,935**	**11,515**	**19,315**	**22,597**	**33,046**	**20,917**	**91,065**	**84,664**	**181,361**

Notes:
[1] Included in either miscellaneous or minor building repair
[2] SCE reports refrigerator recycling separately from refrigerator replacement
[3] SDG&E reports fixture replacement separate from lamp replacement
[4] Other costs include pilots, training center, inpsectiojns, adv ertising, M&E studies, regulatory compliance, other administrati on, indirect costs, and oversight costs
[5] Total energy education is greater than the total number of dw ellings served because it includes the number of households that attended energy education workshops

Table 3-2 illustrates the effect of the Rapid Deployment funding contribution on the PY2001 budget and expenditures. Going into 2001, the utilities had planned to spend $63 million. With the authorization of additional funding and use of carryover funds[2] by the Commission, the PY2001 budget was more than doubled to $142 million. By the end of 2001, the utilities had managed to spend $85 million, treating almost 200,000 homes.

Table 3-2
Effect of Rapid Deployment on PY2001 LIEE Program Budget and Expenditures

	Initial Budget	Budget including Rapid Deployment	Actual Expenditures
PG&E	$29m	$60m	$29m
SCE	$7m	$31m	$21m
SCG	$18m	$38m	$23m
SDG&E	$9m	$13m	$12m
Total	$63m	$142m	$85m

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Table 3-3 presents PY2002 goals and overall budget. Rapid Deployment was continued through PY2002, and unspent funds from PY2001 were carried over. As shown, the total budget for the program is $122 million. The utilities plan to treat over 120,000 homes.

Table 3-3
PY2002 LIEE Program Unit Goals and Total Budget

	PG&E	SDG&E	SCG	SCE	Total
Total Number of Dwellings Served	46,000	11,000	32,700	33,500	123,200
Total Budget	$57m	$12m	$35m	$18m	$122m

The remainder of this section describes each utility's LIEE program. These descriptions were initially developed as part of the evaluation of the utilities' 2000 LIEE program (KEMA-XENERGY 2001).[3] Below, we provide updated program descriptions as of the end of PY2001 going into PY2002.

As noted in the evaluation report resulting from the 2000 study, readers should use caution in making comparisons across individual programs. It should be kept in mind that the context within which each utility has designed and organized its service delivery is different. For

[2] Decision 01-05-033.

[3] This report can be downloaded from www.calmac.org.

example, whether the utility provides one or both fuels and the geographic size and diversity of their territory contributed to each utility's initial program design.

3.3 PACIFIC GAS & ELECTRIC COMPANY (PG&E)

Context

PG&E is a combination-fuel utility, providing comprehensive LIEE program services to low-income customers within its large and diverse service territory.

Administration

PG&E retains the services of a contractor to provide administration support. RHA, the current implementation contractor, hires and manages contractors, ensures that program goals are being met, and monitors contractors for quality assurance. PG&E program staff provide contractors with target market data through the contractor database, which PG&E manages and maintains.

Implementation

A mix of private contractors and community-based organizations implement PG&E's LIEE program.

Training

The content of training provided to individuals who provide outreach and installation measures for the LIEE program is fairly standardized across the utilities. In general, outreach workers are trained on special considerations of the low-income community, home assessment, and determining income eligibility. Weatherization contractors are trained on installation standards.

PG&E provides training to outreach workers (known as energy specialists) and weatherization contractors through its Stockton Training Center. Energy specialists receive 10 days of training, covering energy education, customer contact, home assessment, other low-income programs, and rates.

Bulk Purchasing

PG&E's appliance installation contractor purchases refrigerators and portable evaporative coolers in bulk, resulting in reduced prices. CFLs are not purchased in bulk because contractors bid the prices of measures in their proposals.

Customer Outreach

Customer outreach consists of canvassing neighborhoods for potentially income-eligible participants and assessing income eligibility of interested individuals.

A mix of CBOs and private contractors provide outreach and assess income eligibility for PG&E. Currently, PG&E retains the services of 9 CBOs and 10 for-profit outreach/weatherization contractors, with about 31 percent of participants being served by the 9 CBOs. RHA manages the CBOs and contractors.

In response to the CPUC's directive to target hard-to-reach segments, PG&E expanded its coordination efforts with rural, senior, ethnic, Native American and disabled groups and communities. (See Rapid Deployment for specific leveraging activities conducted in response to Rapid Deployment.)

Energy Education

Income-eligible customers in PG&E territory receive energy education from the outreach worker during the initial visit. Included in the energy usage analysis is a customized energy education component. The energy specialist analyzes the customer's bills and appliance usage and prepares a usage profile during the visit. Customers also participate in a goal-setting session, discussing behavioral changes they can make in an effort to further decrease their utility bill. The energy specialist also enrolls the customer in CARE if they are not already enrolled. Customers are also informed about other low-income programs, such as those offered through local CBOs and programs funded by the state and the federal government.

PG&E also provides energy education seminars to its low-income residents.

CFL Installation

In PG&E territory, income-eligible customers identified by contractors and CBOs receive CFLs during the initial visit.

Weatherization

PG&E Central Inspections staff performs a pre-inspection for every customer who may be eligible to receive weatherization or appliances under the LIEE program. After the initial visit by the CBO or private weatherization contractor, PG&E schedules a pre-inspection. The pre-inspection serves two purposes: homes with combustible appliances (approximately 91 percent of homes) receive a combustion appliance safety (CAS) test, and eligibility and feasibility of the measures that the contractor specified for the home are verified. PG&E inspection staff then informs the CBO or contractor who initially visited the home of the pre-inspection results, and the CBO/contractor installs the specified measures. PG&E inspection staff then inspects every home that received attic insulation and inspects a random sample of 20 percent of all other homes receiving weatherization without attic insulation.

Furnace Repair/ Replacement

During the pre-inspection performed by PG&E inspection staff, a CAS test is performed to determine the safety of customers' combustion appliances. If the results of the test indicate that the furnace requires repair or replacement, a PG&E gas technician first visits and attempts to service the furnace. If the furnace is still malfunctioning or does not pass the CAS test, PG&E can provide repair and replacement services for homeowners through the LIEE program. The inspection staff specifies the furnace work to be performed, notifying an HVAC contractor. The HVAC contractor then performs the work, followed by an inspection performed by PG&E inspectors.

Refrigerator Replacement

Following the initial visit during the pre-inspection performed by PG&E staff, eligibility for refrigerator replacement is assessed. PG&E program staff notifies the appliance installation contractor (McPhails Appliances) of customer eligibility for refrigerator replacement. The contractor then installs the new refrigerator based on the specifications designated by PG&E's inspectors. The contractor removes the old unit, and a second contractor, ARCA, recycles the customer's old unit. Old units are recycled in bulk by ARCA.

Evaporative Cooler Replacement

During the PG&E pre-inspection, PG&E staff assesses the customer's eligibility for a portable evaporative cooler. If eligible, PG&E program staff refers the lead to an HVAC contractor, who then installs the unit, which is followed by an inspection by PG&E staff.

Quality Assurance

PG&E performs quality assurance through pre-inspection, a telephone survey of participating customers, and post-inspection. Pre-inspection confirms eligibility and feasibility for measures.

Rapid Deployment

PG&E incorporated the new Rapid Deployment measures and expanded eligibility requirements into its program mid-year in 2001. PG&E Central Inspections assess for air conditioners and hot water heaters and inform the HVAC contractors of customer eligibility. (PG&E is not providing room air conditioners.) PG&E outreach contractors assess for and install the remaining measures: whole house fans, duct testing/sealing, evaporative cooler maintenance, and setback thermostats.

Mid-year 2001, when the utilities were ordered to rapidly deploy the LIEE program with expanded budgets and measure offerings, PG&E was outsourcing its administration to a contractor, RHA. Accordingly, PG&E had a longer ramp-up period for Rapid Deployment. Many of the new measures were installed in the fourth quarter of PY2001.

PG&E leveraged LIEE program funds and provided Low-Income Home Energy Assistance program (LIHEAP) customers with refrigerators through coordination with two LIHEAP providers, La Cooperativa and Kern EOC. PG&E also provided prior LIEE participants with additional measures, based on the expanded eligibility requirements associated with Rapid Deployment.

3.4 SAN DIEGO GAS & ELECTRIC COMPANY (SDG&E)

Context

SDG&E is a combination-fuel utility, providing comprehensive LIEE program services to low-income customers within its relatively small and geographically compact service territory, encompassing all of San Diego county and the southern tip of Orange County.

Administration

SDG&E's administration contractor also performs implementation tasks. RHA performs outreach, measure assessment (including HVAC), and refrigerator recycling. RHA also performs bulk purchasing for the program.

SDG&E retains the services of a contractor to provide administration support. RHA, the current implementation contractor, hires and manages contractors, ensures that program goals are being met, and monitors contractors for quality assurance. SDG&E provides RHA with target market data, supplementing RHA's own database of past participants.

Implementation

SDG&E retains the services of a contractor to provide implementation support. RHA is the current implementation contractor and has performed this role for much of the program history. Like the functions performed by RHA in PG&E territory, in the SDG&E territory RHA hires and manages contractors, ensures that program goals are being met, and monitors contractors for quality assurance before sending to SDG&E for payment and inspection.

Training

The content of training provided to individuals who provide outreach and install measures for the LIEE program is fairly standardized across the utilities. In general, outreach workers are trained on special considerations of the low-income community, home assessment, and determining income eligibility. Weatherization contractors are trained on installation standards.

In SDG&E's territory, RHA provides in-house training to its outreach workers (i.e., energy specialists) and to the weatherization crews. RHA trains outreach workers using adult learning principles. The staff is trained to deal with the special needs of the low-income segment, including elderly and disabled residents and non-English-speaking residents. Many outreach staff live in the same neighborhoods they target, allowing for an in-depth knowledge of each community's special needs.

Contractors and CBOs installing measures are trained by RHA, on and off the job. Many of the same contractors and RHA staff have been working with the program since inception, reducing the need for training.

Bulk Purchasing

In SDG&E's territory, RHA is a Maytag-licensed distributor of appliances, allowing discount prices on refrigerators, evaporative coolers, and room air conditioners. RHA purchases CFLs in bulk each month and warehouses them off site.

Customer Outreach

Customer outreach consists of canvassing neighborhoods for potential income-eligible participants and assessing income eligibility of interested individuals.

In SDG&E's territory, RHA-employed energy specialists perform outreach and income-eligibility assessment.

In response to the CPUC's directive to target hard-to-reach segments, SDG&E expanded its coordination efforts with rural, senior, ethnic, and Native American groups and communities. (See Rapid Deployment for specific leveraging activities conducted in response to Rapid Deployment.)

Energy Education

Every customer who requests a home assessment for applicable measures under the LIEE program in the SDG&E territory receives basic energy education. This consists of a discussion of the customer's energy usage and behavior and a detailed discussion of the bill, followed by a goal-setting session for energy-reducing actions the customer pledges to take. Additionally, the customer is enrolled in CARE (if eligible) and is informed about other low-income programs. Income-eligible customers receive a more in-depth discussion about energy usage and conservation during the home assessment.

SDG&E also offers energy education seminars to its low-income residents. Over 25,000 low-income residents participate per year.

CFL Installation

In the SDG&E territory, CFLs are distributed to all homes assessed.

Weatherization

SDG&E's customers receive an assessment of their home for weatherization measures after they have proven that they are income-qualified. RHA energy specialists conduct an assessment of the inside and outside of the home, determining what applicable weatherization measures are needed. RHA then forwards the measure specification information to the appropriate weatherization contractor, who then assesses measure feasibility and installs all feasible specified measures. SDG&E inspects all homes receiving weatherization. SDG&E may also perform a work-in-progress inspection on multi-family sites and mobile home parks, assisting contractors and verifying installation work-in-progress.

SDG&E employs two CBOs and three private weatherization contractors,

with 33 percent of the households receiving service from a CBO.

Furnace Repair/ Replacement

In the SDG&E territory, RHA energy specialists record information about the participant's furnace during the initial visit. RHA completes an inspection of the furnace and makes minor repairs. If more extensive repairs or a replacement is needed in an owner-occupied home, RHA notifies a HVAC contractor of the work to be performed. SDG&E verifies all furnace replacement orders. The HVAC contractor then performs the work, followed by an inspection by RHA.

Refrigerator Replacement

For SDG&E, RHA reviews the information collected by the energy specialist from the initial visit with the customer to determine eligibility for refrigerator replacement. For eligible customers, RHA delivers a new refrigerator and recycles the customer's old unit. SDG&E inspects the replacement of all refrigerators.

Evaporative Cooler Replacement

SDG&E's climate is such that only a limited number of evaporative coolers are provided to its customers through the LIEE program. RHA energy specialists determine initial eligibility and suitability for evaporative cooler installation during the initial customer visit. A licensed HVAC RHA staff member installs the unit. SDG&E performs inspection on up to 100 percent of installations.

Quality Assurance

RHA ensures that its contractors and outreach providers provide quality service through various methods. An RHA marketing supervisor or monitor regularly accompanies each energy specialist to observe his or her performance during house calls. This ensures that outreach is being performed in an effective and appropriate manner. Additionally, RHA quality assurance staff conducts telephone interviews with a sample of households serviced by each energy specialist. RHA also reviews and maintains in a database the results of the bilingual (English/Spanish) customer satisfaction surveys that are provided to customers during the initial visit to assess effectiveness of energy education and energy specialists.

Additionally, both RHA and SDG&E inspect jobs to ensure that measures have been installed appropriately and customers are satisfied.

Rapid Deployment

SDG&E incorporated the new Rapid Deployment measures and expanded eligibility requirements into its program mid-year in 2001. SDG&E provided RHA with significant lead time, so RHA proactively researched code issues, bulk purchasing options, and mechanical considerations associated with the new measures. SDG&E was able to install a significant number of new Rapid Deployment measures throughout the second half of PY2001 and also was able to return to prior participants who rent their homes and provide them

with room air conditioners and refrigerators.

RHA outreach staff initially assess for water heaters, while the RHA HVAC inspectors perform a secondary assessment for water heaters and also assess for air conditioning, thermostats, whole-house fans, and duct sealing/repair. SDG&E's weatherization contractor performs evaporative cooler maintenance.

SDG&E leveraged LIEE funds through several initiatives. SDG&E bulk purchased refrigerators on behalf of the Orange County Community Development Council and provided their bill assistance/weatherization program and LIHEAP participants with refrigerators. SDG&E also bulk purchased and installed refrigerators for Campesinos Unidos. SDG&E, in particular, addressed Native American community needs through coordination with Native American agencies. SDG&E coordinated with the Rincon Indian Tribal Counsel to offer Rapid Deployment measures and appliance replacement to those living on the reservation. Rincon will work with SDG&E to offer the same services to other tribes in the region.

3.5 SOUTHERN CALIFORNIA EDISON (SCE)

Context SCE is a single-fuel electric utility, providing LIEE program services to low-income customers within its service territory. SCE's goal is to reach as many low-income households as possible, enroll them in CARE, and provide them with an energy-saving device (CFL, refrigerator, etc.) and basic energy education. Because there are few low-income electric space-heated dwellings that can be weatherized, SCE has focused efforts in the past years on CFL and evaporative cooler installation and, more recently, on energy-efficient refrigerators.

Administration SCE program staff administers the LIEE program.

Implementation SCE utilizes a mix of contractors to implement the LIEE program; a mix of CBOs and private contractors provide services under SCE's relamping, weatherization, refrigerator, and evaporative cooler programs.

SCE provides outreach workers with target market data.

Training

The content of training provided to individuals who provide outreach and install measures for the LIEE program is fairly standardized across the utilities. In general, outreach workers are trained on special considerations of the low-income community, home assessment, and determining income eligibility. Weatherization contractors are trained on installation standards.

SCE staff trains its contractors on outreach and program implementation details. Usually this training is provided at the beginning of each program year.[4]

Bulk Purchasing

SCE bulk purchases CFLs, evaporative coolers, window/wall and central HVAC systems and has these devices delivered to contractors at their warehouse facility or directly to the job site.

Customer Outreach

Customer outreach consists of canvassing neighborhoods for potential income-eligible participants, assessing eligibility for SCE LIEE program services, and enrolling customers in CARE. In SCE's program, the bulk of customers receive outreach services from CBOs through the relamping program. A total of 13 CBOs provide services to 97 percent of relamping participants, while 7 private contractors serve the remaining 3 percent. In addition, two private contractors provide outreach through SCE's weatherization program. In areas covered by the Inter-Utility Agreement, SCG utilizes a mix of private and nonprofit weatherization contractors to provide outreach.

In response to the CPUC's directive to target hard-to-reach segments, SCE expanded its coordination efforts with rural, senior, ethnic, and Native American groups and communities. (See Rapid Deployment for specific leveraging activities conducted in response to Rapid Deployment.)

Energy Education

For PY2001 and PY2002, SCE's income-eligible customers received energy education through the provision of a packet of brochures. The brochures describe SCE and community programs assisting low-income customers and provide some helpful energy conservation hints. CBO outreach staff explain the contents of the packet and answer any questions regarding the program and energy usage. They also assist the customer in filling out a CARE application if they are not already enrolled.

For PY2003, SCE is considering offering an enhanced in-home energy education component and resource guide to its LIEE participants. SCE and SCG are currently coordinating on the development of the resource guide

[4] Weatherization contractors installing measures for SCE customers under the Inter-Utility Agreement are trained at the SCG Training Center.

and training for outreach workers so that their customers will be able to receive formalized, comprehensive energy education.

CFL Installation

In SCE's territory, only income-eligible customers receive CFLs. Relamping CBOs provide the bulbs during the initial visit.

Weatherization

SCE does provide a limited quantity of electrically heated homes with weatherization. Weatherization contractors locate SCE customers with electric-heated homes and assess their homes for weatherization measures during the initial visit. The contractor confirms that the customer's home has not already been weatherized under LIEE and determines measure eligibility and feasibility. The contractor then installs the weatherization measures. SCE's inspection contractor inspects every home receiving weatherization under the program. SCE also reviews inspection results.

Furnace Repair/ Replacement

Electric furnace repair and replacement is offered through SCE's program. However, to date, no household has been identified as eligible for this measure. Gas furnace repair and replacement measures for SCE's customers with SCG natural gas service are addressed through SCG's LIEE program.

Refrigerator Replacement

SCE uses a mix of outreach and service delivery mechanisms for the installation of refrigerators. As part of the delivery service mechanism, each contractor completes an application that provides refrigerator information (i.e., age and ownership of unit) during the initial visit. For a short period of time, SCG's CBOs and weatherization contractors also collected refrigerator data and provided it to SCE. SCE program staff reviews the data and sends potentially eligible customers (those with a refrigerator over 10 years old) a letter explaining that they may be eligible to receive a new refrigerator through the LIEE program. Customers are advised to mail back a card provided by SCE if they are interested. SCE program staff refers interested customers to their refrigerator contractor. The contractor then pre-inspects each site to verify that the customer is eligible and, if so, the contractor installs the new refrigerator and recycles the existing unit. SCE's inspection contractor randomly inspects (up to 15 percent) homes receiving a refrigerator under the LIEE program. SCE inspects inspection results.

For PY2002, SCE is creating a reservation system whereby eligible, interested customers are put on a formalized waiting list for refrigerator replacement. SCE is also mailing the refrigerator mailer to all previous relamping customers with refrigerators older than 10 years. With the CPUC emphasis on comprehensive treatment, SCE will begin providing refrigerators to all its LIEE program participants.

Evaporative

SCE customers learn about the evaporative cooler component of SCE's LIEE

Cooler Replacement

program by participating in other LIEE program components (e.g., relamping or weatherization) and by word of mouth. Customers can call a dedicated SCE phone line if they are interested and are pre-screened for eligibility based on their climate zone, current air conditioning situation, home ownership, and income level. SCE program staff personnel then refer eligible customers to an HVAC contractor, who installs the evaporative cooler. SCE's inspection contractor inspects all evaporative cooler installations.

Quality Assurance

To ensure customer satisfaction and further monitor contractor performance, SCE administers customer satisfaction surveys through each of its LIEE program components. Contractor performance, as indicated through these customer satisfaction surveys, is monitored by SCE. Customer satisfaction survey information is shared with contractors to assist in maintaining a high level of customer service. Contractors receiving repeated negative performance scores may be put on probation or terminated from the program.

SCE also monitors quality assurance through routine post-inspections.

Rapid Deployment

SCE incorporated the new Rapid Deployment measures into its program via pilot programs. Electric water heaters were targeted at a senior housing complex, while air conditioning, duct testing/sealing, and setback thermostats were targeted in desert regions. SCE contracted with one or two community-based organizations for each of the pilot programs.

SCE coordinated extensively with LIHEAP providers through its Rapid Deployment initiatives. LIHEAP providers were awarded contracts for providing Rapid Deployment measures to low-income residents. Additionally, SCE engaged in leveraging of LIEE funds through refrigerator bulk purchasing on behalf of LIHEAP. SCE's program delivered 4,500 refrigerators to LIHEAP, 3,000 of which it paid for, and the remainder was paid for by LIHEAP. LIHEAP installed the refrigerators.

3.6 SOUTHERN CALIFORNIA GAS COMPANY (SCG)

Context

SCG is a single-fuel natural gas utility, providing LIEE program services to low-income customers within its service territory. The bulk of SCG's program consists of providing customer outreach and weatherization services.

Administration

SCG program staff administers the LIEE program. SCG program staff hires and manages contractors, are responsible for meeting program goals, and monitor contractors for quality assurance. SCG does not provide its outreach and installation contractors with target market data.

Implementation

A mix of CBOs and private contractors implement the program by providing outreach and weatherization installation.

Training

The content of training provided to individuals who provide outreach and install measures for the LIEE program is fairly standardized across the utilities. In general, outreach workers are trained on special considerations of the low-income community, home assessment, and determining income eligibility. Weatherization contractors are trained on installation standards.

SCG outreach workers and weatherization contractors receive training at the SCG Training Center. Training is provided over 5 days, covering energy education, outreach, home assessment, and installation standards.

Bulk Purchasing

SCG bulk purchases water heaters.

Customer Outreach

A mix of private contractors and CBOs perform outreach and income-eligibility assessments for weatherization in the SCG territory. A total of 14 CBOs provide weatherization services to 70 percent of weatherization program participants, while 8 private contractors provide weatherization services to the remaining 30 percent.

In response to the CPUC's directive to target hard-to-reach segments, SCG expanded its coordination efforts with rural, senior, ethnic, and Native American groups and communities. (See Rapid Deployment for specific leveraging activities conducted in response to Rapid Deployment.)

Energy Education

For PY2001, income-eligible customers in SCG territory received a packet of energy education materials. Outreach workers for CBOs and private weatherization contractors explain the contents of the packet, which includes information on SCG and community programs assisting low-income residents, energy conservation tips, and SCE programs and electricity safety. LIEE participants are enrolled in CARE during the outreach visit.

Mid-year PY2002, SCG plans to offer an enhanced in-home energy education component and resource guide to its LIEE participants. SCE and SCG are currently coordinating the development of the resource guide and training for outreach workers so that their customers will be able to receive formalized, comprehensive energy education.

SCG also offers energy education seminars to its low-income residents. Over 10,000 low-income residents per year participate in these events.

CFL Installation

Some of SCG customers receive bulbs through SCE's LIEE program.

Weatherization

SCG contractors and CBOs assess the home during the initial visit to determine the weatherization measures for which the customer may be eligible. The contractor confirms that the customer's home has not already been weatherized under LIEE within the past 10 years and determines measure eligibility and feasibility. The contractor then installs the weatherization measures. SCG's inspection contractor inspects every home receiving attic insulation and inspects a random sample of 20 percent of all others receiving weatherization without attic insulation.

Furnace Repair/ Replacement

SCG customers generally are informed about furnace repair and replacement services available through the LIEE program during a routine inspection that they request. An HVAC contractor performs a pre-inspection and verifies income eligibility. After the repair work or new furnace installation, SCG's inspection contractor inspects the work.

Refrigerator Replacement

SCG does not provide refrigerators to customers under its LIEE program. However, SCG customers with SCE service may be eligible to receive a new refrigerator under SCE's LIEE program. SCG weatherization contractors provide SCE customers with information about SCE's programs as part of the energy education packet.

Evaporative Cooler Replacement

SCG does not provide evaporative coolers to customers under their LIEE program. However, SCG customers with SCE service may be eligible to receive one under SCE's LIEE program. SCG weatherization contractors provide SCE customers with information about SCE's programs as part of the energy education packet.

Quality Assurance

SCG receives customer inquiries and comments on its dedicated program phone line, which aids program staff in monitoring customer satisfaction with LIEE services. SCG's furnace technicians monitor the effectiveness and satisfaction with the furnace component of its LIEE program. SCG also monitors quality assurance through routine post-inspection. The utility also administers a periodic customer satisfaction survey. Late summer of PY002, SCG plans to implement an ongoing telephone customer satisfaction survey to LIEE program participants.

Rapid Deployment

SCG added gas water heaters and duct sealing/repair to its program as a result of Rapid Deployment. SCG had installed water heaters through the program in the past, and was able to readily adapt the program for this new measure. SCG allowed those CBOs that were licensed to install water heaters. SCG provided LIHEAP providers who were not contracting with SCG with water heaters through LIEE to install through LIHEAP.

For PY2002, all weatherization customers were assessed for efficient water heaters.

SCG contractors were initially resistant to performing duct testing/sealing. Many did not own the equipment and had some difficulty purchasing the equipment and becoming adequately trained. SCG assisted its contractors by providing training and in some cases lending the duct equipment.

4 FINDINGS

This section presents findings developed as a result of data collection activities associated with this evaluation. As noted previously, the major issues identified by this evaluation were presented in August 2002 at a public workshop, and accordingly, the utilities may have addressed some of the issues that this report documents. We have noted in the report such changes that have occurred only as they directly relate to recommendations.

This section is organized by the following topics:

- Rapid Deployment
- Standardization of the Statewide Low Income Energy Efficiency (LIEE) Program
- Providing Comprehensive and Coordinated Treatment to LIEE Program Participants
- Program Administration
- Program Outreach and Energy Education
- Contractor Training
- Inspection Process
- Program Measures
- Tracking of Customer Satisfaction.

4.1 RAPID DEPLOYMENT

As described in Section 1, Rapid Deployment refers to an expansion of the Statewide LIEE program in response to the California energy crisis. Each utility program was provided with additional funding and expanded measure offerings and eligibility requirements. The total budget for the statewide program went from an initial amount of $63 million to a total of $137 million in program year (PY) 2001. By the end of PY2001, the utilities spent a total of $85 million. The California Public Utilities Commission (CPUC) directed the utilities to continue their Rapid Deployment programs through PY2002, utilizing the unspent Rapid Deployment funds left over from PY2001. Going into PY2002, the utilities had a total budget of $122 million, almost twice as much as their most recent annual budgets.

The utilities and their contractors were presented with the challenge of rapidly expanding their programs in terms of participation and program offerings. Recall that Rapid Deployment added the following measures:

- Replacement of inefficient air conditioners with high-efficiency models (central systems and window/wall units)

- Duct sealing and repair
- Whole-house fans
- Replacement of inefficient or inoperable water heaters with high-efficiency units
- Setback thermostats
- Evaporative cooler maintenance.

Also, renters are now eligible across all service territories to receive evaporative coolers, air conditioners, water heaters, refrigerators, and hard-wired lighting fixtures. (In the past, only home and/or appliance owners were eligible for these measures.)

Program administrators and implementers had to get up to speed on the technical issues of the new measures, such as feasibility of installations, code issues, and product specification. Process-related issues also arose, requiring the utilities to modify forms, expand or create new program databases, and respond to additional CPUC reporting requirements. One of the biggest challenges that the utilities faced was significantly expanding participation. More aggressive and targeted outreach strategies were incorporated into the programs, including expanding on existing coordination efforts with low-income community groups and service providers, leveraging program funds with other low-income program providers, and intensive "go-back" efforts to serve previous LIEE program participants with additional Rapid Deployment measures.

As a result of the utilities' efforts, the program reached almost twice as many customers in 2001 as compared to 2000, and program participants were provided with additional energy-saving measures that were not available in 2000. LIEE program participants were also protected from electricity rate increases through automatic enrollment in the utilities' low-income energy rate program, California Alternative Rates for Energy (CARE).

4.1.1 Utilities' Response to Rapid Deployment

Depending on the context under which each program operates, the utilities responded somewhat differently to Rapid Deployment. For example, Southern California Edison (SCE) and Southern California Gas (SCG) did not add all six new measures because they are each single-fuel utilities. San Diego Gas & Electric (SDG&E) and Pacific Gas and Electric (PG&E) incorporated the new measures into their programs in a comprehensive manner, similar to how they have offered traditional LIEE measures in the past. However, it should be noted that many of the approaches utilized by the utilities to expand their participation and meet increased measure goals were similar, such as expanded coordination with low-income program providers and community groups and returning to prior participants and providing them with new Rapid Deployment measures. The following discusses these topics in detail.

PG&E

PG&E was transitioning to an outside administrator when Rapid Deployment legislation was passed. For the first half of 2001, PG&E administered the program in house. This was a temporary approach necessitated by the termination of the PY2000 administration contract.

Thus, mid-year 2001, Richard Heath and Associates (RHA), which had administered the program on behalf of PG&E in the past, began taking over the administrative functions of PG&E's program.

As a result of this administrative flux, PG&E was somewhat slow to ramp up its program to meet Rapid Deployment objectives. However, during the last quarter of PY2001, the new Rapid Deployment measures were incorporated into the program, and contractors were presented with expanded unit goals.

PG&E, being a dual-fuel utility, incorporated all six new measures into its program. Its outreach and weatherization contractors assessed for and installed four of the measures: whole-house fans, duct sealing/testing, setback thermostats, and evaporative cooler maintenance. PG&E Central Inspections assessed for air conditioning and water heaters during the pre-inspection, referring leads to contractors.

SDG&E

SDG&E directed its administration contractor, RHA, to begin planning for Rapid Deployment before the legislation was passed. SDG&E's program is unique in that its territory is very compact (encompassing two counties) and that program outreach and measure assessment have been consistently implemented by one contractor, RHA, for many years. Nonetheless, RHA was very proactive in investigating the program implications of incorporating new measures, increasing staff, and developing aggressive outreach strategies to quickly ramp up participation.

Similarly to PG&E, SDG&E, as a dual-fuel utility, incorporated all six new measures into its LIEE program.[1] RHA assessed income-qualified households for all measures, including Rapid Deployment measures, offered through the program. The RHA energy specialist would record information about the water heater, while their HVAC inspector assessed for the water heater and the other five Rapid Deployment measures.

SCG

It was relatively easy for SCG to incorporate the new Rapid Deployment measures into its program since only two of the six measures were applicable, duct sealing/testing and gas water heaters. SCG has offered water heaters in the past, and program processes required only minor modifications to incorporate this new measure. SCG had also offered duct repair in the past as well. However, SCG's program database did require an extensive upgrade to be able to track and report on Rapid Deployment program efforts.

SCG retains the services of 14 weatherization contractors to canvass and sign up LIEE program participants. The utility began formal communications with contractors early on in response to

[1] In PY2001, SDG&E was somewhat limited in installations of new electric measures due to a set electric-gas split (90/10). For PY2002, the split was changed to 60/40, allowing for increased installations of the new electric measures.

Rapid Deployment. SCG asked for feedback from contractors as to how much they could ramp up their outreach and installation efforts and, as a result, developed unit goals for contractors. This was somewhat difficult for some of SCG's contractors because they were also providing services under the state's Low Income Home Energy Assistance Program (LIHEAP) program, which at the same time was experiencing dramatic funding increases. As a result, these contractors were faced with pressure from both LIEE and LIHEAP to expand their efforts. These contractors had struggled in the third quarter of PY2001 to meet both programs' expanded goals, but in the final quarter of PY2001, LIHEAP funding was cut by the state, and contractors were able to shift their focus to meeting LIEE program goals.

SCE

SCE has historically operated differently than the other utilities in that its LIEE program consists of separate relamping, refrigerator, evaporative cooler, and weatherization programs. The main thrust of SCE's program has traditionally been reaching a large number of customers and providing them with CARE enrollment and CFLs. Due to fixed program budgets, unit goals for its other LIEE programs have been very low in comparison to the relamping program goals.

SCE took the approach of incorporating the Rapid Deployment measures into its program via pilot programs. For example, SCE worked with one or two community-based organization(s) (CBOs) for each pilot initiative, targeting a senior housing complex with electric water heaters (and weatherization) and targeting a desert region within its territory with air conditioning, duct testing/sealing, and setback thermostats.

4.1.2 Utility Coordination with the LIHEAP Program

The utilities successfully expanded their historic coordination efforts with LIHEAP providers in PY2001. Enhanced coordination allowed LIEE and LIHEAP program participants to receive more services and facilitated extensive program fund leveraging between the two programs. Leveraging activities significantly impacted the utilities' ability to meet higher unit goals and to spend dramatically increased budgets.

Each of the utilities initiated formalized communication with the Department of Community Services and Development, the state agency that administers LIHEAP, in PY2001. Where possible, utilities expanded their usage of LIHEAP providers, particularly SCE and SCG where the two utilities utilized LIHEAP providers to install the new Rapid Deployment measures. The utilities also leveraged their bulk purchasing abilities and provided LIHEAP agencies with refrigerators and water heaters; LIHEAP would either reimburse LIEE for the unit and installation or just installation. Contractors that were not LIHEAP providers that provided services under the LIEE program benefited from increased coordination through the two programs by becoming more informed about the program and its measure offering and learning which LIHEAP providers were assigned to their territories. Contractors could then refer LIEE customers to the LIHEAP program so they could obtain additional services not offered under LIEE.

Coordinating with LIHEAP agencies fulfilled other objectives as well. LIHEAP providers benefited from the enhanced coordination by being able to address their funding lapses. LIHEAP funding is provided on a quarterly basis, whereas LIEE funding is provided on an annual basis. The LIEE program also benefited by gaining access to hard-to-reach communities through LIHEAP contacts, such as Native American communities. (Outreach activities associated with meeting hard-to-reach objectives are discussed in Section 4.5, Program Outreach.)

4.1.3 "Going back" to Previous LIEE Participants

Another key to the success of the LIEE program in responding to the expanded budgets, measure offerings, and measure eligibility was the ability to serve prior LIEE program participants with the new measures offered under Rapid Deployment. This approach relied upon the maintenance of accurate and detailed program records so that administrators could efficiently assess prior participants' eligibility for new measures. Renters who had previously participated were now eligible for refrigerators, evaporative coolers, and air conditioners. The new Rapid Deployment measures were also available to all prior participants. In particular, SCG mined its furnace program participant database to locate customers with gas water heaters who might be eligible for replacement.

4.1.4 Rapid Deployment Measure Issues

A summary of contractor and program staff feedback regarding the Rapid Deployment measures follows:

- **Whole-house Fans**. Contractors struggled with this measure because it tends to require extensive carpentry. There are aesthetic, feasibility, and bracing issues associated with it as well. Many weatherization contractors do not have the expertise to install this measure correctly. In SCE's and PG&E's program, a few qualified contractors are installing the measure exclusively. SDG&E did not install whole-house fans in PY2001 and PY2002 due to the issues mentioned above.
- **Setback Thermostats**. This measure can pose issues for the operator due to its programmable feature. Some contractors do not install the thermostats in all homes, where elderly residents in particular would have trouble operating the equipment, even with training.
- **Evaporative Cooler Maintenance**. Many contractors have had experience with this measure in the past and it has not posed any significant challenges.
- **Room Air Conditioners**. PG&E has had problems with offering room air conditioners and as such did not install any in PY2001. PG&E has experienced construction and code issues and has found it to be cost-prohibitive to install in many cases. SCE and SDG&E do offer the room air conditioning measure. SCE initially experienced difficulty due to bulk purchasing of units. The size of the units constrained their applicability, and as such, SCE changed its room air conditioning purchasing practice.

- **Duct testing/sealing**. Some contractors were initially resistant to providing this measure to customers. Utilities provided contractors who had no prior experience performing duct testing and sealing with training. Due to the expense of the equipment, some organizations were also provided with loaned equipment. By mid-2002, most contractors were trained and had their own equipment and were installing this measure at an increased rate from PY2001.

4.1.5 Customer Satisfaction with New Measures Offered Under Rapid Deployment

Rapid Deployment created an opportunity for low-income residents in California to receive expanded treatment. Additionally, prior participants were eligible to receive new measures through the program, particularly renters, who could now receive appliances, air conditioners, evaporative coolers, and lighting fixtures.

The participant survey that was conducted in support of this process evaluation included several batteries of questions that were intended to assess customer satisfaction with the measures they received through the program. For example, participants were asked about their overall satisfaction with the measures they received. Those not satisfied were asked to provide the reason(s) for their dissatisfaction. Customers were also asked whether they experienced any changes in their comfort levels as a result of participating in the program and were asked which program element(s), if any, contributed to the change. Finally, the survey included a series of questions to determine whether participants experienced a change in their utility bill as a result of participating, and again, customers were asked which program components they believed contributed to the change.

The survey results showed that overall, participants were satisfied with all of the measures they received through the program, including the Rapid Deployment measures. Moreover, customers experienced positive effects on their general comfort in their home and on their utility bill from participating in the program. In particular, measures that affect space conditioning usage, such as air conditioners and programmable thermostats, were most likely to be regarded as improving comfort and decreasing utility bills. Measures that are less apparent to customers, such as duct testing/sealing, water heater replacement, and evaporative cooler maintenance, were less likely to be mentioned as improving comfort and decreasing energy costs.

When comparing participants' experiences with the new rapid deployment measures against the standard measures, participants seem to regard furnaces and weatherization as the most beneficial, followed by air conditioning and programmable thermostats. All other measures were regarded similarly as far as affecting comfort and energy costs.

While recipients of programmable thermostats did not express dissatisfaction with the measure and some attributed increased comfort and decreased utility bills to the installation of this measure, the survey results suggest that only one-quarter of all recipients are knowledgeable about how to program the thermostat and are actually using its programmable features. This Rapid Deployment measure has only been marginally effective in helping participants better

manage and control their energy usage and costs. More in-depth training on its features and education on the benefits associated with its use may be required.

4.2 STANDARDIZATION OF THE STATEWIDE LIEE PROGRAM

The utilities have formed several statewide teams to standardize LIEE programs and utility reporting to the CPUC. The Utility Standardization Project, which includes the utilities, the CPUC's Energy Division and the Office of Ratepayer Advocates, have focused on standardizing policy and procedural elements of the LIEE Program. The Reporting Requirements Manual Working Group has focused on standardizing LIEE monthly and annual reports.

Utility standardization efforts have resulted in changes to each of the utility's programs so that the major elements of the program are standard across the state. The utilities are currently engaged in Phase IV of the Utility Standardization Project, which will focus on carbon monoxide testing and refrigerator grounding. The major accomplishments of the Utility Standardization Project are the Statewide LIEE Policy and Procedures Manual and Statewide Weatherization Installations Standards (WIS).

4.2.1 Public Input Process

The standardization team process for creating the WIS and Policy and Procedures manuals was open to public input, and public workshops were held at various points in the process. Many contractors did not participate in the process because they felt that the time required to participate was too great and would not be worthwhile for them. Those contractors that did participate were able to provide comments on the standards. However, at least one contractor felt that their opinions were solicited too late in the process and that the issues they raised could not be addressed.

It should be noted that public meetings are not the only, and certainly not the primary, method for program contractors to provide input to the utilities regarding program implementation. Each program has established communication protocols between contractors and program administrators and implementers. These protocols have been refined over the many years the programs have been implemented. Contractors often provide feedback regarding implementation to the utilities and their implementers through regular meetings and phone calls. The utilities in turn attempt to keep their contractors informed regarding upcoming changes in policies and procedures.

Regarding standardization activities, as noted above, very few contractors provided input to the standardization team via public meetings. While these meetings are intended for all interested parties, in practice, the meetings are more suitable for external stakeholders. Participating contractors have a more direct link to the utilities through existing communications protocols that exist in support of program implementation. The utilities attempt to inform participating contractors of standardization activities and decisions that will affect them, soliciting input informally via regular communications. While ideally it would be desirable to have contractors attend public workshops to provide input, in practice it is likely that the existing communication

structure is a more suitable method for keeping contractors "in the loop" with regard to standardization activities. The utilities and their implementers can then act as a funnel to provide their contractors with information and to solicit input on only the most relevant matters that will directly affect them.

4.2.2 Statewide Weatherization Installation Standards

The development of Statewide WIS includes two manuals:

- California Conventional Home Weatherization Installation Standards
- California Mobile Home Weatherization Installation Standards.

The standardization team created the manuals with the intent of providing them to installation crews, inspectors, and any other interested party. The manuals provide written standards for the installation and post-inspection of measures installed under the LIEE program.

The installation standards covered in the manuals went into effect for PY2002. The majority of contractors were not significantly affected by the new standards. In many cases, contractors were already using the standards, and the manuals did not change practices. Where the manuals did introduce a new standard, in general, contractors were able to adapt quickly and incorporate the new standard.

Only a few standards created problems for contractors. In particular, contractors raised issue with the duct sealing standard. The standard states, "duct sealing and repair must lower leakage to no more than 15 percent of total system air flow." According to contractors, this standard discourages treatment of the oldest, and most leaky ducts. If contractors seal and repair very leaky ducts, but leakage remains above 15 percent, they do not get paid under the program. The end result, according to contractors, is that only the "easy" ducts are repaired, where contractors are certain that they can reduce leakiness to 15 percent or better.

4.2.3 Statewide LIEE Program Policy and Procedures Manual

Most contractors and utility program staff agree that standardization efforts have led to more equitable and consistent program implementation across the state. Contractors who work for more than one utility, in particular, appreciate the increased consistency in policies and procedures. However, the potential downside to standardized programs is that program staff and contractors may lose the flexibility that has allowed them to innovate and improve their programs over the years and to tailor their programs to their unique conditions.

The following are some specific examples where contractors and/or program staff would like to retain flexibility:

- **Income eligibility.** In one utility service area, the program manager was able to allow for medical expenditure deduction on a case-by-case basis. This policy allowed low-income households with medical expenditures equal to a large portion of their net income to participate in the program.

- **Appliance specification**. A maximum size for refrigerator replacement is specified in the Policy and Procedures manual. Some contractors would like the program manager to retain the option of specifying a larger refrigerator on a case-by-case basis, for example, where an elderly resident requires additional space for storing medicine.
- **Household** eligibility. To participate, homes must not have received weatherization through the program within the past 10 years. Some contractors feel that this rule is too strict, as many weatherization measures deteriorate over just a few years.
- **Multi-unit dwelling (MUD) treatment**. At least 80 percent of a MUD complex must be income-qualified for a contractor to be able to treat all of the units. A few contractors felt that this new rule was too strict, particularly those contractors who were canvassing areas that have been saturated by the program. Contractors serving very large territories, particularly in Northern California, felt that the rule was too lenient.
- **Income document retention**. Contractors must retain copies of specific documents from customers verifying their income. While this policy had been implemented in SCG's territory in the past, it is new for PG&E, SCE, and SDG&E.

  SCE was minimally affected because contractors had to retain documents only if customers received refrigerators, evaporative coolers, or weatherization. Relamping contractors, where the majority of SCE's program activity has traditionally occurred, were not required to retain documents. Relamping participants are allowed to self-certify their income.

  SDG&E was significantly affected, as they had to retain documents for every participant. While in the past they had required customers to show them proof of their income, they were able to use their discretion as to which documents they could accept. The new policy had a dramatic effect on SDG&E's sign-up rate due to the hassle of retaining copies, customer concern over providing copies, and customer hassle in locating specific documents such as proof of home ownership. SDG&E's energy specialists initially had their completion rate cut in half due to the new policy. SDG&E began using digital cameras to reduce the hassle of photocopying documents. Once staff were trained sufficiently on the use of the cameras, completion rates increased somewhat.

  PG&E was also significantly affected by this policy. Customers were often hesitant to provide documents to contractors for copying, and some were unable to locate all the required documents. However, on a case-by-case basis, PG&E contractors were able to get an affidavit from customers who did not have their income documents available, reducing the effect of the new policy on contractors.

  The participant survey included a series of questions to determine satisfaction with the enrollment process, allowing customers to express any dissatisfaction with the income verification process. While few customers were dissatisfied with the eligibility process, many stated that they had some trouble locating and gathering the

required documents. However, the survey did not address the issue of non-participants who actually qualify but were either unable or unwilling to provide their income documents.

With respect to the income document retention requirement, it is unclear whether the expense of strict interpretation of the policy is justified, given that the old policy may have been sufficient in limiting ineligible customer participation.[2] Overwhelmingly, contractors reported that the new policy did not screen out a significant number of unqualified households compared to the old policy. And overwhelmingly, contractors reported that the new policy resulted in a significant impact on the amount of time and number of visits required to enroll a customer in the program.

4.3 PROVIDING COMPREHENSIVE AND COORDINATED TREATMENT TO LIEE PROGRAM PARTICIPANTS

The concept of comprehensive treatment refers to the practice of assessing each eligible LIEE participant for all measures offered under the program, i.e., electric measures if the customer receives electricity from an investor-owned utility (IOU) and gas measures if the customer has IOU gas service. At minimum, the utility whose agency initially enrolls a customer would assess the home for all measures that they offer under the program.

In PY2001, all of the IOUs except SCE comprehensively assessed customers for the measures offered by their programs. SCE customers were required to initiate separate processes to receive comprehensive electric service due to SCE's program design.[3] That is, SCE customers were not automatically assessed for and provided with all electric measures for which they were eligible in one step. However, in light of a recent CPUC ruling that says that LIEE participants must receive comprehensive treatment, going into PY2002 SCE was revising its program in order to comprehensively assess for all eligible electric measures.

In addition, in areas where one IOU provides gas service and another IOU provides electric service, customers must initiate separate processes to receive both electric and gas measures through the program. The exception is where SCG weatherization contractors encounter a SCG customer with electric heat provided by SCE. Through the Inter-Utility Agreement, SCG contractors can provide weatherization to the home, and SCE reimburses SCG for the work. This does not happen often as only a small percentage of SCG customers' homes are heated with

[2] It must be noted that these findings are based on contractor and program staff interviews, and as such, interviewees may be biased towards or against a particular policy, and that bias may affect their responses. However, such bias was considered when developing the contractor interview scope and questionnaire, and the interviewer attempted to frame the question in a way to discourage bias.

[3] The PY2000 Process Evaluation of the Statewide Low Income Energy Efficiency Program (KEMA-XENERGY) provides a detailed description of the steps a SCE low-income customer would have to take to receive comprehensive treatment. The report may be downloaded from www.calmac.org.

electricity when gas service is available in the area.[4] Thus, treatment provided in IOU overlap areas is not extensively coordinated between the utilities.

The remainder of this subsection discusses the pros and cons of providing comprehensive treatment and increasing coordination in overlap areas. Section 5 presents detailed recommendations for increasing program consistency and efficiency through comprehensive treatment and enhanced utility coordination.

4.3.1 Benefits of Comprehensive and Coordinated Treatment

This section discusses the benefits of providing comprehensive treatment, where the utilities assess their customers for all measures offered under their program, followed by the benefits of providing coordinated treatment for overlap customers.

Comprehensive Treatment

As stated above, all the utilities except SCE provide comprehensive treatment to their LIEE participants. In PY2002, SCE modified its program in response to a CPUC directive so that its customers would receive comprehensive treatment in future programs.

One benefit of the comprehensive treatment ruling was increased program consistency. SCE customers would be assessed for all the measures offered under SCE's program, consistent with how the other utilities implement their programs.

Another benefit associated with the ruling is likely to be increased efficiency associated with SCE's program. SCE would provide the full range of measures to each qualified customer, as opposed to identifying a unique set of customers for each measure. The outreach, assessment, and energy education costs associated with providing measures to separate groups of customers should be reduced because measure goals could be met by reaching fewer customers.

Coordinated Treatment for Overlap Customers

As stated previously, with the exception of the small number of SCE electrically heated homes provided with weatherization by SCG via the Inter-Utility Agreement, treatment provided in IOU overlap areas is not extensively coordinated between the utilities. Currently, when a contractor enrolls customers in the program who are in the overlap area, they are informed by the contractor that they may receive additional measures through the other utility's program. They are usually provided with a brochure listing the other services that are available, and the customer may then contact the other utility to initiate the process of receiving additional measures.

[4] Although the exact percentage is unknown for SCG, only 2 percent of PG&E homes that have gas service available use electricity for space heating. (PG&E 1994 Residential Energy Survey)

The benefits of providing overlap customers with coordinated treatment would be increased consistency of service across the state and increased program efficiency. Essentially, the utilities who provide service in overlap areas would need to coordinate and allow each others' contractors to identify, assess, and provide energy education to customers, and then both utilities would follow up by providing any electric and gas measures for which they are eligible.

Program consistency would be improved because overlap customers would be served almost as if they had only one IOU. Customers would not be required to contact their utility to receive measures, and they would not have to go through the enrollment, education, and assessment processes twice. Their treatment would be consistent with dual-fuel utility customers.

Program efficiency would be improved because the utilities would experience cost savings associated with reducing the outreach, assessment, and energy education components of the program because some percentage of their participants would be identified, enrolled, assessed, and provided with energy education by another utility's contractor. These costs could be shared between the two utilities providing measures to the customer.

We note that the major IOU overlap area in California is the portion served by SCE and SCG, comprising about 85 percent of low-income customers located in SCE's territory and 50 percent of low-income customers located in SCG's territory. The other IOU overlap areas are very small, comprising 8 percent of low-income customers located in PG&E's territory and less than 1 percent of low-income customers located in SDG&E's territory. [5]

Clearly, in the major IOU overlap area, there are benefits to be realized from increasing the level of coordination between the two utilities. SCE's and SCG's program funds could be utilized more effectively and their overlap customers could benefit by receiving service consistent with dual-fuel utility customers through enhanced coordination. Both SCE and SCG have developed successful working relationships for handling CARE referrals and other coordinated efforts to serve their shared customer base, and there exists the potential to expand the existing relationship to increase the efficiency and consistency of service to SCE/SCG customers.

4.3.2 Potential Drawbacks

An obvious drawback to providing every customer with all the measures for which they are eligible is that fewer households can be treated overall (assuming fixed program budgets). Historically, SCE designed and implemented its program to maximize the total number of households reached. Instead of providing each eligible home with all eligible electric measures, SCE's focus was on reaching large numbers of customers and providing them with an energy-saving device and enrolling them in CARE. Participants were informed about the other electric measures available through the program, and those who were interested could then call the utility to receive other electric measures such as refrigerators and evaporative coolers.

[5] These figures were based on the Joint Utility Methodology for estimating CARE eligibility and penetration.

Under a comprehensive treatment approach, SCE would no longer treat the large volume of customers it has in the past. (In 2001, SCE treated over 100,000 customers, in 2002, due to comprehensive treatment, SCE treated slightly over 26,000 customers.) Because a significant percentage of participants will be eligible for refrigerators, a relatively expensive measure, SCE must reduce the total number of customers it provides with CFLs. Furthermore, with increasing SCE/SCG coordination, in an extreme case, SCE could potentially exhaust their entire program budget by providing SCG program participants with CFLs and refrigerators, effectively reducing the number of customers SCE contractors are able to reach in other areas to zero. Consequently, increased coordination should be pursued while balancing the need to reach customers in all parts of the SCE service area.

However, SCE should be able to somewhat offset the reduced number of customers it can now serve under comprehensive treatment due to savings with outreach costs. SCE should be able to capture significant cost savings associated with reducing the number of customers its contractors must reach to meet measure goals, since customers will be provided with multiple measures. Additionally, SCE and SCG could both benefit through reduced outreach costs associated with enhanced coordination.

There are also some potential drawbacks associated with expanding coordination between SCE and SCG. As each utility begins to provide participants of the other utility's program with their measures more systematically and on a larger scale, the number of customers that each utility can reach will likely be decreased significantly, assuming that the program budgets remain the same. Additionally, unique targeting approaches that the two utilities have traditionally employed might be compromised to an extent as measure goals are increasingly met through providing measures to customers the other utility's contractor has identified. Thus, we recommend that the two utilities carefully examine both the potential benefits and drawbacks associated with expanded coordination.

4.4 PROGRAM ADMINISTRATION

The utilities have administered low-income programs for over two decades, and as such, the administrative and implementation models have been well tested. Many of the staff and contractors that currently administer or implement the programs have been involved with the programs for many years. The extensive program history, continuity of staff, and relatively static program design have helped the programs to run smoothly and efficiently.

Historically, the utilities have employed two distinct models for administering the LIEE programs. PG&E and SDG&E have relied upon an administration contractor to perform such duties as hiring contractors, monitoring program goals, and monitoring quality assurance. While SDG&E's administration contractor also performs implementation duties such as assessing measure and program eligibility and installing measures, PG&E relies upon a network of private contractors and community-based organizations to implement the program. Both SDG&E and PG&E perform inspections in house, utilizing their company's existing inspection infrastructure.

SCE and SCG use in-house staff to administer the programs. Both utilities, like PG&E, rely upon contractors and CBOs to implement the program. SCE and SCG outsource the inspection role to private contractors. Prior to PY2000, SCE and SCG had performed inspections in house. The utilities outsourced inspections in response to a CPUC ruling that utilities can either administer their programs or retain the inspection role.

The remainder of this subsection discusses administrative issues that were identified during the evaluation effort. It should be noted that the PY2000 evaluation[6] thoroughly examined the effectiveness of the administration of the LIEE program. The PY2001 evaluation found that the utilities were administering their programs effectively, with the exception of some issues that occurred in PG&E's territory due to its administrative transitioning.

4.4.1 PG&E Administrative Transitioning

Over the past few years, PG&E has undergone major changes in its administrative operations. Prior to PY2000, RHA administered the LIEE program on behalf of PG&E. In PY2000, PG&E awarded the administration contract to a different company. The contract was terminated before the 2001 program began, and during the first half of PY2001, PG&E administered its program itself. Mid-year 2001, PG&E again awarded the administration contract to RHA, and a transition period ensued during the second half of 2001.

The effect on program implementation due to the administrative changes that occurred at PG&E in PY2001 was minimized in part because RHA and its staff had been administering PG&E's program for many years prior to PY2000. Many of the implementation contractors and their staff had also worked for the program for many years, and relationships existed between RHA and the contractors and CBOs.

However, transitioning responsibilities from PG&E to RHA did cause some contractor dissatisfaction. The contractors' main complaint with respect to the administrative flux was redundancy in administrative oversight. The perception was that as RHA transitioned into administrator, PG&E did not completely relinquish control, and as a result there was a duplication of roles. Certainly, it is to be expected that PG&E should continue to maintain administrative oversight during the transition period to monitor the new contractor's activities and effectiveness. However, given that RHA and their staff had fulfilled this role successfully for many years, PG&E might have been able to remove redundancies associated with the transition period in a timely manner.

Contractors continued to have issues with administrative redundancy well into PY2002 regarding invoice processing, customer complaint resolution, and communication related to program decision-making. Contractors specifically mentioned that they experienced unusual delays in getting paid for work due to duplicative invoice payment roles between RHA and PG&E. They also felt in general that communication and coordination regarding program issues involved too many decision-makers, which tended to cause confusion and delay in resolution of problems.

[6] This report may be downloaded from www.calmac.org.

We report these findings keeping in mind that contractors may tend to overstate inefficiencies and administrative layers because administrative oversight directly affects their bottom line in terms of the amount of time they can devote to implementation and the amount of freedom they retain in determining implementation methods. However, as stated previously, most of PG&E's contractors have been working for the program for many years, and many of those contractors expressed concern that administrative redundancies between PG&E and its administrator were (1) significantly greater in PY2001 compared to prior years, and (2) had not diminished as expected since the transition. Some of PG&E's contractors also implement the LIEE program for other utilities, and in particular, these contractors felt that PG&E's administration was much more burdensome. The general feeling was that in the past, PG&E was much more hands off and allowed its administrator to effectively make program decisions. And in PY2001, PG&E was behaving more cautiously and was retaining a level of involvement in administrative decision-making that was not seen in the past.

4.4.2 Contractor Payment Process

As stated above, some of PG&E's contractors complained about delays in receiving payment. Contractors said that in PY2001 they waited from 120 to 180 days to receive payment, and at the start of PY2002, were waiting on average 90 days. Some smaller contractors were particularly burdened by PG&E's lengthy payment cycle. These smaller contractors reportedly were forced to increase lines of credit and delay paying their own vendors, while subsequently experiencing a decline in their credit rating. A few contractors said they were seriously considering leaving the program due to the problems with receiving timely payment.

PG&E employed a unique contractor payment approach, compared to the other utilities, in that it paid contractors after the post-inspection was completed and passed. The other utilities pay contractors as the work is done, i.e., contractors submit invoices after the work is completed and they are paid upon receipt of invoice. The other utilities, similar to PG&E, monitor inspection results and address failures so that contractors are strongly encouraged to abide by program policies and procedures. (Inspection is discussed in Section 4.8.)

Contractors cited PG&E's policy of payment after inspection, along with having both RHA and PG&E involved in approving and paying invoices, as causing the lengthy payment process. Again, while it may be expected that contractors would have an incentive to provide feedback that might reduce administrative layers that would result in receiving payment sooner, none of the other utilities' contractors complained about slow payment. Contractors who work for PG&E and one or more of the other utilities, in particular, reported that the other utilities' payment policies and procedures resulted in timely payment.

4.5 PROGRAM OUTREACH AND ENERGY EDUCATION

The utilities employ a fairly standardized approach to program outreach. The outreach process includes locating potentially eligible households, assessing income eligibility, enrolling in CARE, referring participants to other energy and non-energy low-income programs offered by

other utilities and the local, state, and federal government, and providing energy education. Process-related issues associated with each of these elements are discussed below, followed by relevant results from the participant survey.

4.5.1 Locating Potential LIEE Program Participants

Contractors locate eligible participants by canvassing low-income neighborhoods, coordinating with local agencies, utilizing target market information provided by the utilities, and through utility referrals. The network of private contractors and CBOs that perform outreach for the LIEE program rely on their tried-and-true approaches for most cost-effectively locating new program participants, which is primarily door-to-door canvassing. Many of the contractors that currently perform outreach for the LIEE program have done so for many years and have developed extensive connections with local community groups. Many of the contractors employ outreach workers from the communities in which they canvass, enhancing the abilities of outreach workers to elicit trust and interest from residents.

Mix of Contractors

PG&E, SCE, and SCG use a mix of private contractors and CBOs to implement their program, while SDG&E uses its administration contractor, RHA, to implement the program in its relatively compact service territory. PG&E, SCE, and SCG have traditionally encouraged the participation of CBOs to capitalize on their existing outreach infrastructure. CBOs often implement a variety of programs targeted to specific communities and are very knowledgeable about their target audience. Additionally, with the recent focus on serving hard-to-reach communities, CBOs are an especially effective network for reaching specific, target communities. (Section 4.5.5 discusses specific utility hard-to-reach and Rapid Deployment outreach initiatives.) Rapid Deployment efforts also focused on coordination with LIHEAP agencies, which are exclusively nonprofits. Many of the CBOs that the utilities contract with are also LIHEAP contractors, and as such, coordination of services is streamlined and customers receive more comprehensive treatment through both programs.

The utilities have also utilized private contractors in addition to nonprofit agencies. The benefits that for-profit companies offer may include more in-depth experience with a broad range of energy-efficiency technologies and the ability to cover large territories and meet high unit goals.

CARE Referrals

PG&E, SCE, and SDG&E provide target market data to their implementation contractors to assist them in locating potentially eligible participants. The main source of target market data consists of lists of customers currently enrolled in CARE. Since CARE participants must meet the same income eligibility requirement as for the LIEE program, CARE participants are a logical source for recruiting for LIEE. However, CARE participants self-certify their income. According to LIEE outreach staff, often CARE participants are not found to be eligible for LIEE because their income cannot be verified or is too high. As a result, most contractors rely on their

tried-and-true approaches (canvassing) of locating eligible participants and rely less on CARE lists from the utilities.

PG&E program staff have requested that contractors inform them when CARE participants do not qualify for the LIEE program based on household income. PG&E then investigated such cases and considered removing the customer from the CARE rate. Not all of PG&E's contractors complied with the policy of informing PG&E of ineligible CARE participants. Often, this was because the contractor believed that the household would be eligible later in the year due to variable/seasonal income.

4.5.2 Income Eligibility Assessment

As discussed previously, the utilities are now required to retain copies of income documents from eligible households as a requirement for participation. The exception is for SCE program participants receiving CFLs only, where residents are permitted to self-certify their income. This new policy affected PG&E, SCG, and SCE (for appliances and Rapid Deployment measures only). SCG had instituted the income document retention policy for the past several years and was not affected by the new policy.

The new policy dramatically affected the operations of PG&E, SDG&E, and SCE, as discussed previously in Section 4.2.3.

4.5.3 CARE Enrollment

All utilities automatically enroll eligible households in the CARE program. Weekly, SCE and SCG automatically shared data for CARE participants, so overlap customers were cross-enrolled. This process leads to a high percentage of exact matches of customer information; customers were then automatically enrolled in the other utility's CARE rate. Where matches are not exact, the customer is mailed an application for the other utility's CARE program.

4.5.4 Referrals to Other Low-Income Programs

An important component of program outreach is referring customers to other low-income programs. Outreach staff inform participants of other low-income programs offered by the utilities and the local, state, and federal government. Some major programs that participants were made aware of included:

- Low Income Home Energy Assistance Program (LIHEAP)—a federal low-income energy-efficiency weatherization and appliance replacement program
- Home Energy Assistance Program (HEAP)—a State program that offers a one-time, lump-sum payment per year towards the resident's gas and electric bill
- Utility LIEE programs, if the customer is an IOU overlap customer
- Utility non-energy programs, such as the medical baseline allowance, level-pay plan
- Other non-energy programs offered by community groups or government.

4.5.5 Expanded Outreach Activities Associated with Rapid Deployment

In 2001, the utilities were directed by the Commission to increase publicity and marketing efforts of their programs to better reach underserved markets.[7] In response, the utilities implemented plans to target hard-to-reach market segments within the LIEE program. Each of the utilities expanded coordination efforts with rural, senior, ethnic, and Native American groups and communities.

The utilities continued to utilize local implementers such as CBOs, faith-based organizations, local government agencies, and other community or ethnic groups that have important connections with target communities. Some highlights of the utilities' hard-to-reach initiatives include the following:

- SDG&E's administrator lobbied successfully to obtain a Memorandum of Understanding between SDG&E and Native American Tribal Associations
- SCE and SCG received assistance and advice from the Southern California Indian Center in the development of outreach methods and communication channels appropriate for targeting Indian tribes with low-income program information and services
- PG&E focused on targeting Spanish-speaking farm workers located in the Central Valley and provided them with refrigerators, CFLs, and energy education.

4.5.6 Energy Education

The utilities rely on their network of implementation contractors to provide eligible program participants with energy education. The outreach worker who determines customer eligibility also educates the customer on their energy usage, and provides the household with a packet of materials containing energy tips and conservation messages.

Historically, PG&E and SDG&E have provided formalized, comprehensive (i.e., all applicable electric and gas measures) energy education to customers. PG&E's energy education component included an energy survey, which was filled out by the outreach worker, and a summary report was subsequently mailed to customers following the outreach visit. SCE and SCG, while providing a limited amount of education to customers, have not historically focused on formalized, comprehensive energy education.

Enhancements to Energy Education

In PY2002, SCE and SCG collaborated on the development of an enhanced in-home energy education component and resource guide that would provide their customers with comprehensive energy education. SCE and SCG were planning to train their implementation contractors on the new materials. SCE and SCG customers will likely benefit from the enhancements.

[7] The Commission sought to target residential markets that are hard-to-reach based on the following: (1) language, (2) income, (3) housing type, and (4) homeownership status.

PG&E also modified its energy education component in PY2002 by replacing the energy survey with on-site education, providing customers with a customized profile of their energy usage. PG&E determined that the bill disaggregation service that was provided by the energy survey did not add significant value to the process, and that customers would benefit from receiving customized information during the initial visit. Contractors were initially pleased with the change, as they felt that the energy survey required a significant amount of time, considering its limited benefit to customers. Additionally, contractors found the new materials to be informative and relatively easy to use. The only significant complaint identified by the evaluation was confusion over the "energy wheel," an interactive energy calculator that allows customers to determine appliance energy usage based on their energy rate. Some customers had problems using the rate portion of the wheel because the font is very small and the columns somewhat confusing. However, overall PG&E's new approach to energy education was well received by both customers and contractors.

SDG&E continues to offer customers comprehensive and formalized education. SDG&E's administration contractor provides customers with a discussion of their energy usage and behavior, followed by a detailed explanation of their bill. Then, the outreach worker enlists the customer in a goal-setting session, which helps the customer focus on specific ways to control energy usage.

Energy Education in Overlap Areas

Energy education has not historically been integrated by the utilities for customers living in IOU-overlap areas. As a result, customers would either receive electric- or gas-only information or sometimes duplicative and/or different energy education packets from the two utilities.

As stated above, SCE and SCG have coordinated on a joint energy education component; SCE and SCG customers will receive consistent, comprehensive energy education on electric and gas measures. The remaining IOU-overlap areas are fairly small and as such it may not be worthwhile for the utilities to coordinate on energy education materials and delivery methods for the small amount of customers that are affected.

4.5.7 Customer Satisfaction with Outreach and Energy Education

The participant survey included batteries of questions to characterize the customer experience with outreach and energy education. First, customers were asked how they learned about the program. Word-of-mouth (via a neighbor, friends, or family) and contractor canvassing are the most likely methods for enrolling customers (24 and 20 percent, respectively). Utility bill inserts and building managers/landlords also are responsible for a significant percentage of participation (11 and 6 percent, respectively).

The participant survey also included questions regarding satisfaction with various outreach and education elements, such as the outreach workers, measure installers, length of time it takes to receive measures, and the measures themselves. As shown in Table 4-2, customer satisfaction

with the outreach process is generally high. About 3 percent of participants were unsatisfied with contractors leaving an incomplete job, were still waiting for a repair to be completed, or were unhappy with the size of their new refrigerator. About 2 percent had problems with weatherstripping around windows and doors.

Table 4-1
Customer Satisfaction with Program Implementation

Program Element	Percentage of Participants[1]	
	Satisfied[2]	Not satisfied[3]
Outreach workers	96%	4%
Measure installers	95%	5%
The time it took to get all measures installed	94%	6%
Measures installed	96%	4%

[1]"Do not know" and "Refused" responses excluded
[2]Defined as "completely" or "somewhat satisfied
[3]Defined as "not very" or "not at all" satisfied

The survey also addressed participants' perceptions regarding the length of time required to receive all the measures for which they qualified. For customers receiving weatherization (and CFLs) only, most received all of their measures within 2 weeks. For appliances and furnace repair/replacement, service took longer, particularly for PG&E customers. PG&E has a very large territory, and it would be expected that for appliances, on average, it would take longer to serve customers because the average distance required to deliver appliances is greater. Often appliances are "batched," so that the contractor can deliver more than one unit in an area, and in a larger service territory, this process would lead to longer wait times, especially for outlying areas.

For SCE and SDG&E customers receiving water heaters, furnace repair/replacement, and air conditioners, half received their measures within 2 weeks and very few waited more than 3 months. PG&E customers receiving those same measures were more likely to wait up to 2 months, and up to one-third waited more than 3 months. Customers receiving refrigerators waited the longest. For PG&E, one-half waited 1 to 2 months, and one-third more than 3 months. For SCE, a full two-thirds received their refrigerator within 2 weeks, but the remainder waited more than 3 months. And for SDG&E, half had to wait 1 to 2 months, while one-third received theirs within 2 weeks.

The participant survey also included questions on the perceived value of various components of the program. Respondents were asked to rate the value of the service and were given the option of reporting that they either did not receive the service or did not recall receiving the service. Across all utilities, for each component a significant portion of respondents could not remember receiving the service. The least-remembered activities were the explanation of the utility bill and the receipt of information about other low-income programs. Most participants remembered receiving brochures on how to save energy, the combustion appliance safety (CAS) test (PG&E only), and receiving measures. These results probably reflect that outreach workers provide a

number of services to the participants in a limited amount of time, and only a few components really stand out in the participant's mind.

Table 4-3 provides a comparison of the value ratings (ranging 1 to 5, with 5 meaning very high value) of each of the program components, showing high value (4-5), medium/low value (1-3), and do not recall receiving service. Of those that recall receiving the program component, satisfaction was high, where upwards of 75 percent of respondents placed high value on all components. CARE enrollment and the CAS test (PG&E only) were rated the highest, with 94 percent and 90 percent rating their respective values highly. The interactive energy education components (discussing how to save energy, the energy wheel for PG&E, and explaining the utility bill) and measure installations were the next highest, with around 75 percent rating the values of these program components highly, followed by general information about low-income programs and energy education brochures, with around 70 percent of customers reporting high value for these components.

Table 4-2
Perceived Value of Program Elements to Customers

Program Element	Percentage of Participants[1]		
	High Value	Medium/Low Value	Do not recall receiving service
Information/brochures about other low-income programs	43%	19%	37%
CARE enrollment	62%	4%	34%
Brochures on ways to save energy	71%	24%	5%
Discussion with outreach worker on ways to save energy	62%	17%	21%
Energy wheel (PG&E only)	49%	15%	36%
Discussion with outreach worker about how to read energy bill	37%	15%	47%
Combustion Appliance Safety Test (PG&E only)	88%	10%	2%
Measures installed	73%	15%	12%

[1]"Do not know" and "Refused" responses excluded

4.6 CONTRACTOR TRAINING

Training is fairly standardized across the utilities. Outreach workers are trained on program policies and procedures for determining income eligibility, performing basic measure assessment, and on special considerations of the low-income community. Installation crews received training on installation standards in addition to program policies and procedures.

PG&E

PG&E's Stockton Training Center provides installation crews with comprehensive classroom instruction coupled with hands-on demonstration of installation standards. PG&E energy specialists go through an extensive energy-education training course where they learned about individual appliances and their energy usage.

PG&E contractors felt that the installation training they received was valuable and appropriate, providing them adequate preparation for entering the field, where they could obtain on-the-job experience under a more experienced installer. Energy education training was also perceived to be valuable, although a few contractors felt that the length of training was too long.

SDG&E

Training for SDG&E's program staff and contractors is provided by its administrator, RHA. RHA trains its own energy specialists and HVAC inspectors as well as installation contractors on program policies and procedures. Energy specialists receive specialized training on energy education, while installation crews receive training on installation standards.

SCG

SCG's Training Center also provides classroom and hands-on instruction to installation crews. Weatherization installers receive a detailed introduction to fieldwork, followed by being placed in an apprentice-type position under an experienced installer. SCG's outreach workers receive comprehensive training on program policies and procedures, including a brief treatment of the energy education materials provided to customers. The training does not provide a formalized explanation of home appliance energy usage. SCG contractors reported being satisfied with the training they received from the SCG Training Center.

SCE

SCE does not provide their contractors with formalized training on energy education and installation standards. They do provide training on new policies and procedures each year, so that contractors are up to date on program changes. Many of SCE's relamping contractors currently or in the past have contracted with SCG, and as such have received outreach training through the SCG training center. The small number of weatherization installers contracting with SCE have been with the program for many years and as such have not required installation training. As the volume of weatherization jobs performed under SCE's program is limited, new installers are infrequently hired by contractors, and the small number of new installers receive on-the-job training. SCE's weatherization contractors felt that this type of training of new installers is adequate and they do not feel they need separate training on installation standards from SCE.

4.7 INSPECTION PROCESS

Each program utilizes inspections to monitor contractors and assess customer satisfaction with the program. A high percentage of installation jobs is inspected by the utilities or their contractors after the installation (post-inspection). In particular, households that receive appliances and/or ceiling insulation, plus a random sampling of households that received weatherization without ceiling insulation, receive a post-inspection. PG&E additionally performs pre-inspections, verifying the measures assessed by the contractor. During the pre-inspection visit, PG&E also performs a CAS test if the customer has one or more natural gas appliances.

Prior to PY2001, each of the utilities performed some or all of the post-inspections. New to PY2001, SCE and SCG were required by the CPUC to outsource the inspection functions because the utilities administer programs in house. As a result, contractors perform all of the inspection functions on behalf of SCE and SCG, although the utilities can re-inspect jobs for additional quality control and assurance. Both utilities feel that the transition to outsourcing inspection has gone smoothly. Installation contractors were not significantly affected by the transition to inspection contractors, and they reported that they were working well with the new inspectors.

PG&E and SDG&E continue to perform post-inspections. Contractors and program staff continued to be satisfied with the inspection process and most contractors worked effectively with the inspectors. The minor exception is in PG&E territory where contractors have large territories where more than one inspector is assigned. Some of the contractors who are located in the remote areas of PG&E's territory have voiced concern over inconsistent inspection results. They contend that they receive significantly different inspection results for the same installation by the same installer due to inconsistent inspection practices by PG&E staff.

4.7.1 Combustion Appliance Safety (CAS) Test

As stated above, PG&E performs a CAS test on participating households with one or more natural gas appliances during the pre-inspection visit. The function of the test is to determine ambient and equipment carbon monoxide (CO) levels caused by the combustion process of natural-gas-fired appliances. The rationale for performing the test is that weatherization measures will cause the house to become "tighter," and the affect of CO in the home will be more pronounced due to the reduction in incoming air. PG&E sets predetermined levels of CO that are allowable in the home before weatherizing. If the test results indicate CO levels higher than allowed, the house fails the CAS test. Failures are forwarded to PG&E gas service representatives (GSRs), who attempt to correct the problem. Failures that cannot be fixed by PG&E are then forwarded either to the landlord if the resident is a renter or to the program for furnace/water heater repair or replacement.

The remainder of this subsection discusses contractor feedback and field observations regarding the effect of the CAS test on program processes and presents customer satisfaction results from

the participant survey. It should be noted that the Standardization Team is addressing this topic formally as part of their Phase IV efforts.

Effect on Program Process

The CAS test affects the program process primarily by adding an extra step between enrollment and measure installation. Additionally, customers whose houses fail the CAS test must go through a separate process in which PG&E (or the landlord for renters) attempts to repair the faulty equipment.

During the enrollment visit, the contractor explains the program processes that will follow the first visit, including the pre-inspection visit and the CAS test. The contractor briefly explains the value and purpose of the CAS test. Then, the contractor records which days are convenient for the customer to receive the pre-inspection.

Next, PG&E Central Inspections staff arrives at the customer's home for the pre-inspection and CAS test visit. The inspector performs the CAS test on all natural gas appliances, followed by a brief assessment of measures. The CAS test takes about 45 minutes, while the measure assessment takes about 15 minutes.

About 25 percent of customers fail the initial CAS test. Those that pass continue through the program process, receiving all of the measures for which they are eligible. Customers who fail the CAS test are not eligible to receive infiltration measures until the faulty equipment is repaired and the home passes the CAS test.

Upon the initial CAS test failure, the PG&E inspector contacts PG&E and arranges to have a PG&E GSR examine and attempt to correct the problem. If successful, the customer is able to receive measures. If the GSR cannot fix the problem, the customer is either referred to their landlord if they are a renter or the program can replace or repair the furnace or water heater if they own their home. On average, about 12 percent of customers have their appliances adjusted, repaired, or replaced and are able to continue through the program. Customers who are not able to fix the problem appliance, about 13 percent, are eligible to receive non-infiltration measures only.

Customer Satisfaction with the CAS Test Procedure

The participant survey addressed the perceived value of and satisfaction with the CAS test. First, all utilities' customers were asked about their concern about the safety of their natural gas appliances. Among those who have gas service, there was a very high level of concern about gas appliance safety (71 percent were somewhat or very concerned). The program in general had an effect on the perceived safety of the home, where almost all participants with gas appliances (80 percent) felt safer as a result of participating in the program.

PG&E participants who recalled receiving the CAS test (over half) in particular did not feel any safer than participants of the other utilities' programs, but it should be noted that the overall perceived program effect on safety was very high to begin with.

PG&E customers exhibited a high degree of knowledge about the purpose of the CAS test, reflecting the education that PG&E inspectors and outreach workers provide. Most were able to explain what service the test provided in their own words, such as "checked the safety of my appliances," "fixed problems," and "measured carbon monoxide levels."

The survey indirectly assessed the "hassle factor" associated with the test through open-ended follow-ups to reported general dissatisfaction and reported length of time of service. The results show that when customers were asked about overall satisfaction, the effect of the CAS test did not contribute to reported dissatisfaction in any substantial way, and those receiving CAS tests did not wait any longer than PG&E customers who did not receive a CAS test (as reported previously). The only significant factor affecting length of service was the type of measures received by the customer.

4.8 PROGRAM MEASURES

The LIEE program offers customers a variety of measures, including weatherization measures and appliances. This section discusses contractor and customer feedback and field observations regarding program measures. Rapid Deployment measures were discussed in Section 4.1.4.

- **CFLs**. Across the utilities, outreach workers have strong incentives to provide the maximum number of CFLs to participating customers because they are paid by the bulb. The hours of usage of fixtures is not systematically considered by many contractors when providing CFLs to customers. In fact, on one ride-along we observed a CFL installation in a fixture that was unplugged. However, some outreach workers do attempt to at least locate fixtures that the customer uses frequently. The utilities are aware that contractors routinely give out the maximum number of CFLs allowed, regardless of the hours of usage of the fixtures. As a result, SCE was considering lowering the number of CFLs they give out. SDG&E and PG&E plan to continue to allow up to five CFLs per home. However, PG&E was planning on examining hours of usage assumptions for PY2003.
- **Appliance replacement eligibility requirements.** Currently, refrigerators are replaced if they are 10 years or older so that the cut-off date for eligibility changes (i.e., increases) every year. An approach that set eligibility based on a particular energy-efficiency standard (e.g., 1993) would likely make more sense than increasing the cut-off date each year. That is, the program would replace refrigerators that were manufactured before the 1993 standards went into effect, since the incremental difference in efficiency between a new refrigerator and one built before the 1993 standards would be significant. Whereas under the current eligibility requirements, in PY2004 the program would be replacing refrigerators manufactured according to the

1993 standards, and the incremental energy savings associated with this scenario would be relatively small.

Additionally, program managers may be able to optimize their program funds and direct them towards the most needy by replacing the oldest and most inefficient appliances. Currently, a 10-year old refrigerator would be just as likely to be replaced as a 30-year old refrigerator. This issue might be explored by using the results of the cost-effectiveness study that the Standardization team has recently conducted.

- **Refrigerator grounding.** This new pilot measure is very expensive and time-consuming, due to county permit procedures and costs. However, for those households who do not have a grounded outlet, the service is obviously very valuable to them. This measure is being discussed as part of Phase IV of the Standardization Project.
- **Sunscreens.** This measure was not offered consistently statewide for PY2001 or PY2002. Some contractors who do not currently install sunscreens feel that they are a valuable measure and would like to be able to offer them to customers. One contractor who does currently install sunscreens under the program would like to be able to install them on south-facing windows in addition to the west-facing windows for which they are currently specified.

4.9 TRACKING OF CUSTOMER SATISFACTION

As part of ongoing quality assurance, the utilities track customer satisfaction through telephone and mail surveys. Customer satisfaction surveys administered shortly after delivery of service are a valuable way for utilities to identify potential problems as they occur. SDG&E and SCE use a mail survey, while PG&E relies on a telephone survey. SCG was planning on incorporating an ongoing telephone customer satisfaction survey into the program for 2002, as in the past, they had relied upon periodic evaluations.

5 RECOMMENDATIONS

This section discusses recommendations to improve LIEE program efficiency, consistency and effectiveness statewide. Recommendations have been organized by the following topics:

- Ensuring the Effectiveness of Standardized Program Policies and Procedures
- Increasing Consistency of Treatment Across the State
- Improving the Effectiveness of Program Administration
- Improving the Processes Related to Program Implementation
- Improving the Consistency of Program Quality Assurance.

In summary, we find that the process by which each utility implements the LIEE program has been fairly well tested. The utilities have been administering the low-income energy-efficiency program for over 20 years, and the programs have benefited tremendously from this experience. The utilities have retained many of the same contractors over the years, and much of the core staff has been involved since the program inception. The recent standardization efforts have benefited the programs by increasing consistency and highlighting best-practice policies and procedures that can be implemented statewide.

5.1 ENSURING EFFECTIVE STANDARDIZED PROGRAM POLICIES AND PROCEDURES

- **As the utilities move toward greater standardization of policies and procedures, care should be taken to ensure that program administrators maintain the flexibility necessary to be innovative and to tailor their programs to their unique circumstances.**

Recent standardization efforts have improved the LIEE programs from a consistency perspective and have helped to identify best-practice policies and procedures across the utilities. However, program administrators should be able to retain an appropriate amount of flexibility in the implementation of the programs. For example, program managers should be allowed to make exceptions on a case-by-case basis to assist customers facing hardship situations. Additionally, policymakers should keep in mind that the utilities each face unique circumstances and many of the differences in program implementation are a result of program administrators successfully adapting to their environment.

- **The utilities and their administrative and implementation contractors should continue to solicit contractor feedback and to keep contractors "in the loop" with regard to proposed changes to policies and procedures.**

The contractors who install LIEE program measures on behalf of the utilities have extensive "nuts-and-bolts" experience interpreting and implementing the program policies and procedures in the field. Contractors are in the unique position to understand the environment in which new policies and procedures will be put into practice, and they often can anticipate what will and will not be effective. Accordingly, it is critical that installation contractors provide feedback when new policies and procedures are being determined.

As discussed in Section 4.2.1., the utilities maintain effective communications with their contractors through protocols established in support of program implementation. These existing channels are likely the most suitable method for funneling information to and soliciting input from contractors regarding changes in policies and procedures.

- **The installation standard for duct treatment should be examined because as it currently stands it discourages treatment of ducts that are the most leaky and most in need of treatment.**

Currently, contractors are only paid for duct repair if leaks have been brought up to a certain threshold. If contractors treat very leaky ducts and reduce leakage by a significant amount, but are not able to bring the ducts up to the specified threshold, they do not get paid for the treatment. As a result, contractors are likely to ignore the most leaky ducts and treat only those ducts where they are certain they can meet the threshold. The utilities should revisit this installation standard to ensure that it does not discourage adequate treatment of leaky ducts.

- **The income document retention policy should be carefully considered due to the effect it is having on program implementation.**

The new income document retention policy has had a significant negative effect on program outreach and arguably has not significantly increased the effectiveness of the eligibility screening process. Outreach workers are often finding themselves returning to households several times to obtain all the required documents. Many customers, particularly elderly residents, are unwilling to allow contractors to retain copies of their personal documents, and consequently cannot allowed to participate in the program. Some customers are unable to locate certain documents and are kept from participating.

The positive effects of the new policy may not be significant enough to warrant its effects on customer enrollment. While contractors admit that the policy does keep out a small number of customers who might have qualified under the prior policy,[1] the amount of hassle to contractors and customers may not be justified.

The utilities should consider formally examining the effects of the new policy on customer hassle (locating documents), loss of participation by those customers unwilling to allow copies of their

[1] The old policy required contractors to view proof of income. However, copies of documents were not required, and contractors were allowed some discretion in which documents they could accept.

documents, contractor inefficiencies (extra visits, difficulties with photocopying documents, etc.), and the number of customers deemed ineligible as a result of the new policy.

The ultimate objective of any income verification policy is to ensure that program resources are effectively directed at qualifying households. Not only should the number of ineligible customers be minimized, but also the resources directed at assessing eligibility. The most effective policy will strike a balance between conducting a due diligence enrollment process and minimizing the number of ineligible households participating. Ultimately, a policy that is effective at absolutely ensuring no ineligible households participate, but significantly weighs down the enrollment process, may not be the most effective policy for maximizing resources directed at eligible households.

- **The practice of utilizing digital cameras to obtain copies of income documents should be considered.**

SDG&E's administrator and implementer, RHA, has successfully integrated the use of digital cameras into its income document retention process. Initially, its outreach workers used portable copiers. These machines, usually fax machines that allow for copies, are difficult to transport and do not provide reliable copies. As a result, the document copying process was driving up outreach costs. The introduction of digital cameras allowed RHA staff to obtain copies while at the customer's home, and after some iteration on the use of the cameras, has resulted in a low-cost, low-hassle practice for obtaining document copies.[2]

5.2 INCREASING CONSISTENCY OF TREATMENT ACROSS THE STATE

- **SCE should offer comprehensive treatment to its customers[3].**

In PY2001, SCE program participants would not necessarily be assessed for all electric measures offered under the program. Customers were informed about all of the measures offered by the program, but in some cases would be required to contact SCE to receive additional measures.

To increase program efficiency and consistency of treatment SCE should assess for and provide customers with all electric measures offered under their program. Program efficiencies would be gained because SCE would be able to provide multiple measures to a qualified customer, reducing outreach costs.

Consistency would be improved because SCE customers would be receiving the same type of comprehensive treatment with which the other utilities provide their customers.

[2] It should be noted that one should consider the cost implication of this recommendation when considering applying this practice to the other utilities.

[3] SCE has modified its program so that in the future it may provide comprehensive treatment to all LIEE program participants.

- **SCE and SCG should examine the tradeoffs of increasing the extent of coordination in the shared portion of their territories so that customers are assessed for measures offered by both programs[4].**

In PY2001, customers located in the SCE/SCG combined territory who were contacted by SCG weatherization contractors were not assessed for and provided with electric measures offered under SCE's program, with the exception of the small number of electrically heated homes that are located in SCG's territory that are covered by the Inter-Utility agreement. Instead, customers were notified by SCG contractors that SCE could provide them with CFLs and assess them for other electric appliances such as refrigerators, and were provided with a phone number to contact SCE.

Program efficiency and consistency will be increased if SCE and SCG were to increase the level of coordination that exists between the two programs. We recommend that both SCE and SCG contractors who are canvassing in the SCE/SCG combined territory enroll customers in both utilities' programs. Subsequently, customers should be assessed for measures offered under both programs. This level of coordination would lead to cost efficiencies due to the sharing of enrollment, outreach, energy education, and assessment costs across the two utilities.

Program consistency would also improved by the recommended scenario such that SCE/SCG customers would receive the same level of service as that is received by dual-fuel investor-owned utility (IOU) customers.

We do note, however, that there are some drawbacks associated with expanding coordination between SCE and SCG. As each utility begins to provide participants of the other utility's program with their measures more systematically and on a larger scale, the number of customers that each utility can reach will likely be decreased significantly, assuming that the program budgets remain the same. Additionally, unique targeting approaches that the two utilities have traditionally employed might be compromised to an extent as its measure goals are increasingly met through providing measures to customers the other utility's contractor has identified. Thus, we recommend that the two utilities carefully examine both the potential benefits and drawbacks associated with expanded coordination.

5.3 IMPROVING THE EFFECTIVENESS OF PROGRAM ADMINISTRATION

The utilities have administered low-income programs for over two decades, and as such, the administrative and implementation models have been well tested. Many of the staff and contractors that currently administer or implement the programs have been involved with the programs for many years. The extensive program history, continuity of staff, and relatively static program design have helped the programs to run smoothly and efficiently.

[4] SCE and SCG are currently negotiating to provide a comprehensive assessment to all customers who receive weatherization services under SCG's program.

It should be noted that the PY2000 evaluation[5] thoroughly examined the effectiveness of the administration of the LIEE program. This evaluation reexamined program administration for PY2001, and found that the utilities were administering their programs effectively, with the exception of some issues that occurred in PG&E's territory due to its administrative transitioning.

- **PG&E should consider reducing its administrative presence to help improve program efficiency and to maximize RHA's administrative effectiveness.**

In PY2001, PG&E transitioned from temporary in-house administration to an outside administrator, RHA. However, PG&E has retained a level of administrative oversight that many contractors feel is burdensome and redundant. While it was reasonable to expect some amount of PG&E administrative oversight during the transition period, RHA has clearly come up to speed on its roles and responsibilities. PG&E should consider reducing its role in administrative functions, allowing RHA to efficiently and effectively administer the program.

- **PG&E and RHA should consider developing a document or better emphasizing existing documents that clearly define roles and responsibility of all staff involved in implementing the program.**

Given that many contractors felt that administrative redundancy was the most significant problem regarding administration, it might be helpful to better identify roles and decision-making authority. PG&E and RHA should clearly define the roles and responsibilities for program decision making and communicate this to all involved parties in order to eliminate any lingering doubt as to who has authority and responsibility for administrative roles.

- **PG&E should consider paying its contractors "as they go" like the other utilities since "failures" still could be effectively remedied.[6]**

PG&E contractors have experienced significant delays in receiving payment for services. This is in part because PG&E does not pay contractors until they pass the post-inspection. This policy is intended to directly link the quality of service with payment. The other utilities pay contractors "as they go." Under this alternative policy, contractors receive payment after providing service, but post-inspection results are monitored and remedied through a separate process. Arguably, the end result of both policies is to encourage contractors to perform quality work and to only invoice for work that was performed. However, PG&E's policy may place undue burden on contractors by increasing the length of time they must wait for payment.

Given that some PG&E contractors have said they are re-examining their participation in PG&E's program due to the financial burden under which they have been placed, PG&E should consider changing its policy.

[5] This report may be downloaded from www.calmac.org.

[6] PG&E has modified its program so that it currently pays contractors "as they go".

5.4 IMPROVING PROGRAM IMPLEMENTATION PROCESSES

This section includes recommendations concerning program outreach, energy education, the CAS test, program measures, and contractor training.

5.4.1 Continuation of Effective Outreach Methods

- **The utilities should continue coordinating with the Department of Community Services and Development (CSD), the state agency that administers the Low Income Home Energy Assistance Program (LIHEAP) to enhance leveraging opportunities between the LIEE program and LIHEAP to increase customer service.**

The utilities expanded their existing coordination efforts with LIHEAP-providers during Rapid Deployment. As a result, the programs leveraged funds effectively and provided more comprehensive services to both programs' participants. The utilities also benefited from building upon existing relationships with LIHEAP providers by gaining access to hard-to-reach communities, such as Native American groups. These leveraging activities should be continued and expanded in future program years.

- **Utilization of community-based organizations (CBOs) is a good practice and should be continued, especially with increased emphasis on implementing hard-to-reach initiatives and with the desire to increase coordination with the LIHEAP program.**

Utilities employ both private contractors and CBOs to implement their programs. CBOs add considerable value to program implementation due to their extensive knowledge of the communities they serve. Often, CBOs will deliver many other community and government programs, expanding the opportunities for households that they reach.

Given the recent focus on serving hard-to-reach communities, continued utilization of CBOs expands the utilities' abilities to serve specific, target communities.

- **Private contractors also bring valuable qualifications to the program.**

Private contractors also add value to the program due to their abilities to reach high goals, and their extensive experience in installing a wide variety of measures. Often, they are able to add new, more advanced measures more easily because of the depth of their private experience.

- **The utilities should take into account that some customers on CARE marketing lists provided to contractors are actually do not qualify for CARE or LIEE once their self-certification figures have been verified on-site by a contractor. The contractors do not typically utilize these lists and instead rely on their tried-and-true approaches.**

Contractors tend to rely on their tried-and-true methods for reaching eligible households. Typically, these methods involve door-to-door canvassing and coordinating with property management companies, senior centers, and other local groups. While SCE, SDG&E, and PG&E provide lists of CARE participants to contractors to help identify program leads, a significant number of these participants do not qualify for the LIEE program. However, these lists can help contractors identify target areas for canvassing efforts.

- **The SCE and SCG CARE enrollment data-sharing process is a good practice and should be continued.**

SCE and SCG have developed an automated system that cross-enrolls their customers in the CARE program. This practice should continue as it is very beneficial to low-income customers and improves the overall efficiency of the CARE enrollment process. Currently, the data sharing routine is run on a weekly basis.

- **Customer referrals to other low-income programs are a good practice and should be continued.**

Currently, the outreach portion of the LIEE program includes referrals to other low-income programs. Customers are informed about other government programs such as LIHEAP, HEAP, and other non-energy programs. This service maximizes the value of locating a low-income household by making them aware of other low-income programs for which they might qualify.

- **Expanded outreach activities undertaken in response to the Commission's decision to target the hard-to-reach should be continued in order to effectively capitalize on PY2001 efforts.**

Special efforts made by the utilities in PY2001 include coordination with Native American groups, faith-based organizations, and ethnic groups to ensure broad access to the LIEE program. These coordination efforts have resulted in increased participation from hard-to-reach groups, and as such, should be continued.

The utilities may consider collaborating on their experiences in reaching underserved communities. Many of the obstacles to reaching these segments are likely similar, and success stories experienced in one utility's service territory might be easily transferred to other portions of the State. For example, SDG&E successfully targeted Native American groups in the San Diego area, overcoming many obstacles such as the prevalence of propane appliances. The utilities would likely benefit from collaborating on their own and their contractors' experiences in serving hard-to-reach communities.

5.4.2 Recent Improvements to Energy Education

- **SCE's and SCG's efforts to develop formal and comprehensive energy education materials are well directed. They should continue with plans to train contractors on**

use of the materials and should formally incorporate use of the materials into the outreach process.

Historically, SCE's and SCG's programs have not included a formalized and comprehensive energy education. Instead, contractors provided participants with a packet of brochures that included some energy tips and sometimes explained to customers how they could save energy. Contractors were not provided with training on energy efficiency and were not directed to formally address it as part of the outreach process.

The two utilities have coordinated on developing a comprehensive energy resource guide that includes both electric and gas measures. They plan to formally train their contractors on how to deliver the information to customers, maximizing the energy education component of the program.

- **PG&E's revised energy education has been well received by both customers and contractors, and PG&E should continue to offer its new on-site, customized energy education to customers.**

PG&E recently replaced its mail energy survey with customized, on-site energy education. Instead of contractors filling out an energy survey and receiving a follow-up report by mail several weeks later, contractors provide information during the visit utilizing new materials developed by PG&E. Both customers and contractors have initially responded well to the new approach.

A minor issue that was identified with the new materials was that customers may find it difficult to use the rate portion of the energy wheel, the interactive energy calculator that PG&E provides. Many customers have more than one tier of energy pricing, and it can be confusing to determine their rate. Contractors should make it clear to customers which value they should use when using the energy wheel.

- **The utilities should make efforts, or continue efforts, to provide their new energy education materials in languages other than English.**

A significant portion of the utilities' target audience for the LIEE program speaks a language other than English, and the utilities should continue and expand efforts to offer program materials in other languages.[7] The recent focus on serving hard-to-reach communities, such as non-English speakers, highlights the importance of ensuring that all potentially eligible sectors of the low-income community have access to the LIEE program and its educational materials.

[7] PG&E offers its program materials in eight different languages.

5.4.3 Minimizing the Impact on Customers due to PG&E's CAS Test

It should be noted that the Standardization Team will be formally addressing the CAS test as part of its Phase IV efforts. We present recommendations here that relate to the results of the participant telephone survey and the contractor interviews and field visits.

- **Where possible, PG&E should attempt to reduce the number of visits required to administer the CAS test to its LIEE participants to reduce their hassle.**

The inclusion of the CAS test in PG&E's program leads to at least one extra visit for participating customers compared to the other utilities. If the household fails the CAS test, an additional two visits are required at minimum to address the problem and to verify that the home is safe for weatherization. The impact on participants of the extra visits is significant and should be minimized when possible.

One example where PG&E could remove a visit is the case when a customer's pilot light is not lit. PG&E sends out a gas service representative (GSR) to light the pilot. If the PG&E inspectors were allowed to perform this function, a visit could be eliminated.[8] A second example is where the PG&E GSR has adjusted or repaired equipment and has performed a second CAS test. If the home passes the test, the PG&E inspector must come out a second time and verify the CAS test results. This visit could be eliminated because the PG&E GSR has ostensibly been trained on the effective administration of the CAS test. Ideally, the contractor would perform the CAS test during the initial visit, eliminating an additional step. However, if PG&E continues to require that a pre-inspection be performed by their own inspectors, the "extra" visit associated with the CAS test would not be eliminated.

5.4.4 Offering the Most Cost-Effective Mix of Measures

It should be noted that the utilities are currently assessing and rank ordering the cost-effectiveness of LIEE program measures, including those offered during Rapid Deployment.

- **CFLs.** The utilities should be informed that, in many participants' homes, CFLs are being installed in low-use (e.g., less than 4 hours per day) fixtures. The utilities should consider better emphasizing CFL installation guidelines when training contractors.

- **Appliance replacement eligibility requirements.** Appliance eligibility requirements should be considered jointly based on efficiency standards and measure costs so that the programs spend their appliance replacement dollars most cost-effectively. That is, the 10-year rule that presently applies to refrigerators might be reconsidered; instead, eligibility could be determined by the adherence to a certain standard, e.g., the 1993 appliance energy-efficiency standards. In addition, the utilities should monitor field

[8] PG&E is not able to address this issue because GSR responsibilities are governed by union agreements and contracts.

activities and consider implementing policies that ensure only the oldest, most inefficient appliances are replaced.

- **Refrigerator grounding**. Due to its expense and permitting process, the utilities should consider offering refrigerator grounding only for hardship cases or where customers are very unlikely to be able to ground the outlet themselves.

- **Sunscreens.** Only one utility's program (SCE) currently offers this measure. Contractors in other areas have expressed the desire to include this measure as they feel it is an effective energy-reducing measure that benefits customers. The utilities should consider assessing the cost-effectiveness of this measure, by climate zone.

- **Programmable thermostats**. The utilities should consider increasing the emphasis on training customers on the use and benefits of programmable thermostats. As reported in Section 4, only one-quarter of recipients of this measure are informed about and using its programmable features.

5.4.5 Expanding Training on Energy Education for SCE and SCG

- **SCE and SCG should include the formalized training that is provided to contractors on the new energy education component into their training.**

Currently, SCE and SCG outreach worker training does not encompass energy education. Given that the utilities have developed a new, formalized, comprehensive energy education component, new contractors should receive instruction on how to present the materials to customers.

5.5 IMPROVING CONSISTENCY OF PROGRAM QUALITY ASSURANCE TRACKING

- **The utilities' usage of on-going tracking of customer satisfaction is a valuable component of quality assurance and should be continued. SCG should follow-through with its plans to add an on-going customer telephone survey.**

Each of the utilities track customer satisfaction through either telephone or mail surveys. SCG has historically utilized periodic customer satisfaction studies but is planning on implementing an on-going survey. This will improve quality assurance for SCG as program staff will be able to identify problems as they occur, enabling them to react more quickly to solve potential problems.

A

PROGRAM STAFF INTERVIEW GUIDE

LIEE Program Process Evaluation
Interview Guide

I. Overview of Interview Objectives

- Clarify our understanding of program processes (LIEE 2001, Rapid Deployment, LIEE 2002)
- Explore ideas for program improvement, "best practices"

II. Roles & Responsibilities

- Utility staff
- Other contractors/vendors
- Other

III. Administrative Effectiveness and Coordination Issues

- How effective is the overall administrative organization of the program?
- How effective is the division of responsibilities between the utility and outside contractors/vendors?
- How well are program delivery functions coordinated within the utility and/or its contractors/vendors?
- Are there any barriers to increased partnering with local and state agencies (i.e., CSDs, LIHEAP, CBOs)
- Is the LIEE Program well-coordinated with other low-income programs, e.g., CARE, CSD, federal programs?
- How effective are communications and coordination with the other utilities?
- How might program administration, delivery, and communications be better coordinated or improved going forward?

IV. Training

- Has staff involved in program administrative, implementation, and installation been adequately and consistently trained?

- What type of training is provided, by whom, and how frequently?
- Could training be improved, made more effective or provided more efficiently?

V. Target Market Characterization

- What is the target market for this program? How is this target market identified?
- What portion of the target market has been reached by the program?
- How can the eligible market be best segmented to more effectively address market barriers?
- How should the program be designed to address the different opportunities in these market segments?
- How does the eligible market (participants and nonparticipants) break down according to type of building, space heating fuel, type of services provided, etc.?

VI. Program Marketing, Outreach

- How is the program promoted?
- Have promotional efforts and materials been effective?
- What improvements might be made to more effectively and efficiently identify and reach the target markets?

VII. Customer Satisfaction

- What are the main drivers influencing participation (and nonparticipation)?
- Have customers been satisfied with their participation decision?
- What would it take to improve participant satisfaction, encourage greater participation levels?

VIII. Energy Education

- What are the main elements of the program's educational component?
- Which of these components have been the most/least effective?
- What changes could be made to improve the education component?
- Has there been any tracking of post-participation customer behavior?

IX. Weatherization, Other Measures

- How comprehensive is the treatment in participant dwellings – weatherization, furnace repair/replacement, appliance replacement?
- Are there missed opportunities?
- To what extent are issues such as measure persistence and snapback a concern for this program?
- How might this phase of the program delivery be improved, made more effective, more cost-efficient?

X. QA/QC, Inspections and Tracking

- How effective are the program's QA/QC and inspection processes, including energy education, weatherization, installations, etc.?
- How effective are the program's complaint resolution procedures?
- Do current program tracking and reporting systems provide useful information on a timely basis?
- How might the program's QA/QC, inspection, and tracking processes be improved?

XI. Program Differences

- What are the main programmatic differences between the utility's program, as implemented, and the statewide program?
- What are the most important issues associated with moving to a more uniform or standardized statewide program?
- Which, if any, program differences are likely to remain despite the desire and ongoing efforts to improve program standardization?

B CONTRACTOR INTERVIEW GUIDE

Interview Guide for CBO/Contractor Interviews

I. Background

- History of working relationship with utility
- Work for other utility LIEE programs
- Firm description
- Number of staff dedicated to program
- Percentage mix of LIEE v. other work

II. Rapid deployment

- Planning process with utility, goal setting
- What new measures did they offer
- Did they have trouble meeting the higher goals?
- Any trouble installing or assessing for new measures (e.g., duct sealing/testing)?

III. Staff

- Training
- Turnover
- Hiring—qualifications, typical experience of staff

IV. Outreach

- Lead generation—has it changed over time?
- Income qualification
- Market saturation

V. Energy education

- What does it entail?
- Approximate time spent on energy education

VI. CFLs

- How do they choose where/which fixtures?
- How many are provided?

VII. Measure assessment

- What measures are available to the customer?
- How are measures assessed?
- Furnace—if there was no furnace but there was one once, would they install one?
- Do they offer sun screens?
- Do they provide a water heater wrap even when the unit might be replaced?
- Does everyone receive a programmable thermostat?
- Criteria for door replacement
- SCE/SCG—are water heater measures provided if the water heater fuel is not provided by utility sponsor?
- CBO—do duct testing/sealing? If negative towards measure, why?

VIII. Process for receiving measures

- How does it work, in what order, who installs what?
- How long does it take?
- What if someone only wanted furnace repair, for example?

IX. Inspections

- Do results vary by CBO v. private?
- How were installations/fail rates affected by WIS effective PY2002?

X. Weatherization installation standards

- How have new standards for PY2002 affected process, income document retention, refrigerator grounding, 80% rule for treating whole complex?
- In general how does WIS affect process?

XI. Utility working relationship

- Communication
- Coordination

XII. Other utilities/agencies

- Coordinating with other utilities and their service providers in overlap area
- Referrals
- Territory

XIII. Measure-specific issues

- Problems with measures, e.g., thermostats
- Measures to be added to program, e.g., sun screens

C

PARTICIPANT SURVEY QUESTIONNAIRE AND OVERALL FREQUENCIES

UTILY:

utility from sample

N =		1000	100%
PG and E	1	250	25%
SoCal Gas	2	250	25%
SDG and E	3	250	25%
SCE	4	250	25%

UTIL1:

Full utility wording

N =		1000	100%
Pacific Gas and Electric (PG and E)	1	250	25%
Southern California Gas Company (SoCal Gas)	2	250	25%
San Diego Gas and Electric (SDG and E)	3	250	25%
Southern California Edison (SCE)	4	250	25%

PROGM:

PROGRAM FROM SAMPLE

N =		1000	100%
PG&E Low Income Energy Efficiency Program	1	250	25%
SoCalGas Low Income Energy Efficiency Program	2	0	0%
SDG&E Low Income Energy Efficiency Program	3	250	25%
SCE Low Income Energy Efficiency Program	4	250	25%
SCG's Furnace Program	5	127	13%
SCG's Direct Assistance Program	6	123	12%

SAMPA:

NEW REFRIGERATOR? 1=YES BLANK=NO

N =		750	100%
New refrigerator	1	193	26%
Not installed	0	557	74%

SAMPB:

CFL (COMPACT FLUORESCENT LIGHT BULBS)? 1=YES BLANK=NO

N =		888	100%
Compact fluorescent light bulbs	1	424	48%
Not installed	0	464	52%

SAMPC:

PORCH LIGHT FIXTURE? 1=YES BLANK=NO

N =		888	100%
Porch light fixture	1	69	8%
Not installed	0	819	92%

SAMPD:

WEATHERSTRIPPING, CAULKING AROUND DOORS/WINDOWS? 1=YES BLANK=NO

N =		1000	100%
Weatherstripping or caulking around doors and windows	1	444	44%

SAMPE:

ATTIC INSULATION? 1=YES BLANK=NO

N =		1000	100%
Attic insulation	1	91	9%

SAMPF:

DUCT AIR LEAKAGE TEST? 1=YES BLANK=NO

N =		654	100%
Duct air leakage test	1	27	4%

SAMPG:

DUCT SEALING AND INSULATION? 1=YES BLANK=NO

N =		888	100%
Duct sealing and insulation	1	106	12%

SAMPH:

NEW WATER HEATER? 1=YES BLANK=NO

N =		1000	100%
New water heater	1	190	19%

SAMPI:

WATER HEATER INSULATION BLANKET? 1=YES BLANK=NO

N =		1000	100%
Water heater insulation blanket	1	72	7%

SAMPJ:

LOW-FLOW SHOWERHEAD(S)? 1=YES BLANK=NO

N =		1000	100%
Low-flow showerheads	1	304	30%

SAMPK:

FAUCET AERATOR(S)? 1=YES BLANK=NO

N =		1000	100%
Faucet aerator(s)	1	397	40%

SAMPL:

NEW FURNACE? 1=YES BLANK=NO

N =		870	100%
New furnace	1	234	27%

SAMPM:

FURNACE REPAIR? 1=YES BLANK=NO

N =		870	100%
Furnace repairs	1	151	17%

SAMPN:

NEW CENTRAL AIR CONDITIONER? 1=YES BLANK=NO

N =		1000	100%
New central air conditioner	1	102	10%

SAMPO:

NEW ROOM AIR CONDITIONER? 1=YES BLANK=NO

N =		784	100%
New room air conditioner	1	4	1%

SAMPP:

NEW EVAPORATIVE COOLER? 1=YES BLANK=NO

N =		888	100%
New evaporative cooler	1	117	13%

SAMPQ:

EVAPORATIVE COOLER COVER? 1=YES BLANK=NO

N =		1000	100%
Evaporative cooler covers	1	89	9%

SAMPR:

EVAPORATIVE COOLER MAINTENANCE? 1=YES BLANK=NO

N =		776	100%
Evaporative cooler maintenance	1	29	4%

SAMPS:

PROGRAMMABLE THERMOSTAT? 1=YES BLANK=NO

N =		888	100%
Programmable thermostat	1	108	12%

SAMPT:

WHOLE HOUSE FAN? 1=YES BLANK=NO

N =		758	100%
Whole house fan	1	11	1%

SAMPU:

A window sunscreen

N =		672	100%
A window sunscreen	1	13	2%

CFLNM:

number of CFL's

N =	424	100%
0	0	0%
1	6	1%
2	38	9%
3	64	15%
4	117	28%
5	196	46%
6	3	1%
7	0	0%
8	0	0%
9	0	0%
10	0	0%
11	0	0%

INTRO:

IF PERSON NO LONGER LIVES THERE OR THERE'S NO ONE BY THAT NAME AT THIS PHONE NUMBER, CODE 19 - THANK & TERMINATE

Hello, my name is ___, and I'm calling on behalf of [utility]. May I speak to [first name, last name]?
IF NEEDED: I'm calling from the Gilmore Research Group.

REINTRODUCE IF NECESSARY. Our records show that in 2001 your household participated in the<PROGRAM>. As part of this program, improvements were made to your home to make it more energy efficient. Do you remember participating in this program?

IF DON'T KNOW/NOT SURE, SAY: These improvements may have included:
<sampa>,<sampb>,<sampc>,<sampd>,<sampe>,<sampf>,<sampg>,<samph>,<sampi>,<sampj>,
<sampk>,<sampl>,<sampm>, <sampn>,<sampo>,<sampp>, <sampq>,<sampr>,<samps>, <sampt>,<sampu>

N =			1000	100%
Yes, continue	91	=> /LASTQ	1000	100%
42 NQ - DID NOT PARTICIPATE IN PROGRAM	42	=> /ATMPT	0	0%
43 NQ - DON'T KNOW PROGRAM PARTICIPATION	43	=> /ATMPT	0	0%
44 NQ REFUSED PARTICIPATION IN PROGRAM	44	=> /ATMPT	0	0%
02 ARRANGE CALL-BACK - OUT OF HOME	02	=> /NAME	0	0%
03 RESPONDENT NOT AVAILABLE/TOO BUSY	03	=> /CALL1	0	0%
04 NO ANSWER	04	=> /CALL1	0	0%
05 ANSWERING MACHINE	05	=> /CALL1	0	0%
06 BUSY	06	=> /CALL2	0	0%
10 INITIAL REFUSAL - SOFT	10	=> /XIT10	0	0%
13 INITIAL REFUSAL - HARD	13	=> /ATMPT	0	0%
20 DISCONNECT	20	=> /ATMPT	0	0%
21 BUSINESS	21	=> /ATMPT	0	0%
22 FAX MODEM LINE	22	=> /ATMPT	0	0%
23 LANGUAGE BARRIER (NON-SPANISH)	23	=> /ATMPT	0	0%
24 HEARING PROBLEM/OTHER PROBLEM WITH RESPONDENT	24	=> /ATMPT	0	0%
25 RESPONDENT GONE FOR REMAINDER OF SURVEY	25	=> /ATMPT	0	0%
30 SPANISH LANGUAGE	30	=> /ATMPT	0	0%
32 SPANISH - ARRANGE CALLBACK - OUT OF HOME	32	=> /NAME	0	0%
33 SPANISH - RESPONDENT NOT AVAILABLE/TOO BUSY	33	=> /CALL1	0	0%
34 SPANISH - NO ANSWER	34	=> /CALL1	0	0%
35 SPANISH - ANSWERING MACHINE	35	=> /CALL1	0	0%
36 SPANISH - BUSY	36	=> /CALL2	0	0%
38 SPANISH - INITIAL REFUSAL - SOFT	38	=> /XIT10	0	0%
39 SPANISH - INITIAL REFUSAL - HARD	39	=> /ATMPT	0	0%
40 SAMPLE USE ONLY	40	=> /ATMPT	0	0%
15 BLOCKED NUMBER	15	=> /ATMPT	0	0%
16 CHANGE AREA CODE	16	=> /TEL02	0	0%
17 DUPLICATED NUMBER	17	=> /ATMPT	0	0%
19 WRONG NUMBER/NO HERE BY THAT NAME AT THIS NUMBER	19	=> /ATMPT	0	0%
41 NQ - MISCELLANEOUS	41	=> /XIT41	0	0%

PHONE:

Phone numbers

=> * IF IF ((UTIL1>0),UTIL1,0)

N =		1000	100%
Mary O'Drain at 415-973-2317	1	250	25%
Sharon Lee at 213-244-3248	2	250	25%
Dave Rogers at 858-636-5791	3	250	25%
Sharon Lee at 213-244-3248	4	250	25%

QA:

We are conducting a survey of customers who participated to learn about their energy usage and experience with the program. This information will be used to help improve services for<util1>customers. All information will remain confidential. IF NEEDED: This survey will take about 15 minutes.

N =		1000	100%
Continue	1	1000	100%

INT04:

Do you still live at: <addr><city><zip>? IF ADDRESS IS NOT CORRECT, CLARIFY...
Do you currently live in the same home that participated in the program? IF NO, THANK AND TERM

N =			1000	100%
Yes	91	=> /LASTQ	1000	100%
45 NQ - NOT AT LISTED ADDRESS - THANK & TERMINATE...	45	=> /ATMPT	0	0%
46 NQ - DK/REFUSED ADDRESS - THANK & TERMINATE	46	=> /ATMPT	0	0%

Q1:

Before we get started, let me just verify what my records say was installed in your home as part of this program. I'm going to read a list of things and please tell me if these were installed. The first is ...

N =		1000	100%
Continue	1	1000	100%

Q1A:

A new refrigerator? (Was one installed?)

=> +1 IF NOT SAMPA=1

N =		193	100%
Yes	1	193	100%
No	2	0	0%
Don't know	3	0	0%
Refused	4	0	0%

Q1B:

Compact fluorescent light bulbs? (Were these installed?)

=> +1 IF NOT SAMPB=1

N =		424	100%
Yes	1	395	93%
No	2	23	5%
Don't know	3	6	1%
Refused	4	0	0%

Q1C:

A porch light fixture? (Was this installed?)

=> +1 IF NOT SAMPC=1

N =		69	100%
Yes	1	37	54%
No	2	31	45%
Don't know	3	1	1%
Refused	4	0	0%

Q1D:

Weatherstripping or caulking around the doors and windows? (Were these performed?)

=> +1 IF NOT SAMPD=1

N =		444	100%
Yes	1	383	86%
No	2	52	12%
Don't know	3	9	2%
Refused	4	0	0%

Q1E:

Attic insulation? (Was this installed?)

=> +1 IF NOT SAMPE=1

N =		91	100%
Yes	1	88	97%
No	2	2	2%
Don't know	3	1	1%
Refused	4	0	0%

Q1F:

A duct air leakage test? (Was this performed?)

=> +1 IF NOT SAMPF=1

N =		27	100%
Yes	1	24	89%
No	2	1	4%
Don't know	3	2	7%
Refused	4	0	0%

Q1G:

Duct sealing and insulation? (Were these installed?)

=> +1 IF NOT SAMPG=1

N =		106	100%
Yes	1	67	63%
No	2	30	28%
Don't know	3	9	8%
Refused	4	0	0%

Q1H:

A new hot water heater? (Was this installed?)

=> +1 IF NOT SAMPH=1

N =		190	100%
Yes	1	174	92%
No	2	11	6%
Don't know	3	4	2%
Refused	4	1	1%

Q1I:

A water heater insulating blanket? (Was this installed?)

=> +1 IF NOT SAMPI=1

N =		72	100%
Yes	1	60	83%
No	2	10	14%
Don't know	3	2	3%
Refused	4	0	0%

Q1J:

Low-flow showerhead(s)? (Were these installed?)

=> +1 IF NOT SAMPJ=1

N =		304	100%
Yes	1	278	91%
No	2	24	8%
Don't know	3	2	1%
Refused	4	0	0%

Q1K:

Faucet aerator(s)? (Were these installed?)

=> +1 IF NOT SAMPK=1

N =		397	100%
Yes	1	239	60%
No	2	109	27%
Don't know	3	49	12%
Refused	4	0	0%

Q1L:

A new furnace? (Was one installed?)

=> +1 IF NOT SAMPL=1

N =		234	100%
Yes	1	173	74%
No	2	61	26%
Don't know	3	0	0%
Refused	4	0	0%

Q1M:

Furnace repair? (Was this done?)

=> +1 IF NOT SAMPM=1

N =		151	100%
Yes	1	101	67%
No	2	44	29%
Don't know	3	6	4%
Refused	4	0	0%

Q1N:

A new central air conditioner? (Was one installed?)

=> +1 IF NOT SAMPN=1

N =		102	100%
Yes	1	99	97%
No	2	3	3%
Don't know	3	0	0%
Refused	4	0	0%

Q1O:

A new room air conditioner? (Was one installed?)

=> +1 IF NOT SAMPO=1

N =		4	100%
Yes	1	3	75%
No	2	1	25%
Don't know	3	0	0%
Refused	4	0	0%

Q1P:

A new evaporative cooler? (Was one installed?)

=> +1 IF NOT SAMPP=1

N =		117	100%
Yes	1	110	94%
No	2	7	6%
Don't know	3	0	0%
Refused	4	0	0%

Q1Q:

An evaporative cooler cover? (Was one installed?)

=> +1 IF NOT SAMPQ=1

N =			89	100%
Yes	1		61	69%
No	2		26	29%
Don't know	3		2	2%
Refused	4		0	0%

Q1R:

Evaporative cooler maintenance? (Was this performed?)

=> +1 IF NOT SAMPR=1

N =			29	100%
Yes	1		21	72%
No	2		5	17%
Don't know	3		3	10%
Refused	4		0	0%

Q1T:

A whole house fan? (Was one installed?)

=> +1 IF NOT SAMPT=1

N =			11	100%
Yes	1		10	91%
No	2		0	0%
Don't know	3		1	9%
Refused	4		0	0%

Q1U:

A window sunscreen? (Was one installed?)

=> +1 IF NOT SAMPU=1

N =			13	100%
Yes	1		12	92%
No	2		1	8%
Don't know	3		0	0%
Refused	4		0	0%

Q1S:

A programmable thermostat? (Was one installed?)

=> +3 IF NOT SAMPS=1

N =			108	100%
Yes	1		97	90%
No	2	=> SKIP1	11	10%
Don't know	3	=> SKIP1	0	0%
Refused	4	=> SKIP1	0	0%

Q1SA:

Is it still installed?

N =			97	100%
Yes	1	=> SKIP1	94	97%
No	2		3	3%
Don't know	3	=> SKIP1	0	0%
Refused	4	=> SKIP1	0	0%

Q1SB:

Did you replace it with another programmable thermostat or a manual one?

N =			3	100%
Programmable	1		1	33%
Manual	2		1	33%
Other (SPECIFY:)	3		1	33%
Don't know/Not sure	4		0	0%
Refused	5		0	0%

SKIP1:

skip to q7 if CFL only

=> Q7
IF NOT => +1 IF NOT SAMPB=1 OR NOT Q1B=1

N =			0	100%

BULB:

=> * IF IF((CFLNM>0),CFLNM)

N =			398	100%
	1		6	2%
	2		31	8%
	3		61	15%
	4		111	28%
	5		186	47%
	6		3	1%

Q2:

According to our records, a total of<bulb>compact fluorescent light bulbs were installed in your home. Is this correct?

=> Q7 IF NOT Q1B=1

N =			395	100%
Yes	1		358	91%
No	2		21	5%
Don't know	3		16	4%
Refused	4		0	0%

Q2A:

ENTER NUMBER

How many WERE installed?

=> +1 IF NOT Q2=2

N =			21	100%
NONE	00	=> Q7	0	0%
Don't know	98		0	0%
Refused	99		0	0%
	1		2	10%
	2		10	48%
	3		9	43%

Q2B:

Are all of these, some of these or none of these bulbs still installed and being used?

N =			395	100%
All	1	=> Q5	269	68%
Some	2		98	25%
None	3	=> Q4	25	6%
Don't know	4	=> Q5	3	1%
Refused	5	=> Q5	0	0%

BULBS:

=> * IF IF((Q2=2),Q2A,CFLNM)

N =		98	100%
	1	1	1%
	2	6	6%
	3	16	16%
	4	28	29%
	5	47	48%

Q3:

How many of the<bulbs>compact fluorescents are currently installed and being used?

N =		98	100%
Don't know	98	0	0%
Refused	99	0	0%
	1	24	24%
	2	32	33%
	3	18	18%
	4	24	24%

BULBN:

=> * IF IF((Q2=2),Q2A,CFLNM)

N =		98	100%
	1	1	1%
	2	6	6%
	3	16	16%
	4	28	29%
	5	47	48%

BCHEK:

=> * IF IF((Q3>BULBN),1,2))

N =		98	100%
Number of bulbs in Q3 greater than total number of bulbs indicated from sample or Q2a	1		
	0	0%	
Number of bulbs in Q3 less than total from sample or Q2A	2	98	100%

Q3X:

I've recorded that you have more compact fluorescent bulbs currently installed than you originally received through the<progm>. As I ask you again about these bulbs, Please bear in mind that we are talking about only the compact fluorescents you received through the<progm>.

=> +1 IF NOT BCHEK=1

N =			0	100%
Enter to re-ask CFL questions	1	=> Q2	0	0%

Q4:

ENTER ALL THAT APPLY.

Why aren't all of the bulbs still installed? Any other reasons?

N =		124	100%
Burned out	01	75	60%
Broke	02	8	6%
Didn't like the quality of light	03	4	3%
Light not bright enough	04	15	12%
Light flickered when turned on	05	2	2%
Didn't fit in fixtures/hang down from fixture too far	06	16	13%
Didn't like the way bulb looked in fixture	07	2	2%
Not enough fixtures for all bulbs	08	3	2%
Gave away	09	0	0%
Too bright	10	2	2%
Have not used it yet	11	3	2%
Bulb burned out fixture/messed up wiring	12	3	2%
Moved them to other fixtures	13	1	1%
Don't use/need them/don't have a place	14	3	2%
Other (SPECIFY):	97	0	0%
Don't know	98	2	2%
Refused	99	0	0%

Q5:

Did any of these program bulbs replace an existing compact fluorescent light bulb?

N =		395	100%
Yes	1	55	14%
No	2	328	83%
Don't know	3	12	3%
Refused	4	0	0%

Q6:

Approximately how many of the<bulb>program bulbs you received were used to replace an existing compact fluorescent bulb?

=> +1 IF NOT Q5=1

N =		55	100%
Don't know	98	4	7%
Refused	99	0	0%
	1	12	22%
	2	10	18%
	3	6	11%
	4	10	18%
	5	11	20%
	6	2	4%

Q7:

During the summer of 2001 - that is, the summer before last - there were people going door-to-door and handing out packets of 4 compact fluorescent bulbs to households in your neighborhood. They were not part of <PROGM>, they were working for the California Conservation Corps and the state's Powerwalk program. These workers may have been wearing bright yellow vests. Do you recall receiving any bulbs from these workers?

N =		1000	100%
Yes	1	222	22%
No	2	717	72%
Don't know	3	61	6%
Refused	4	0	0%

Q8:

Do you recall receiving any compact fluorescent bulbs at a local event held in your community, such as a senior center or a county fair?

N =		1000	100%
Yes	1	59	6%
No	2	920	92%
Don't know	3	21	2%
Refused	4	0	0%

Q9:

Thinking back to before 2001, had you ever used any compact fluorescent bulbs before then?

N =		1000	100%
Yes	1	270	27%
No	2	700	70%
Don't know	3	30	3%
Refused	4	0	0%

Q10:

In the future, would you be likely to use a compact fluorescent bulb to replace a burned-out bulb?

N =		1000	100%
Yes	1	796	80%
No	2	138	14%
Don't know	3	66	7%
Refused	4	0	0%

Q11:

Assuming it would cost you $5 to purchase a compact fluorescent light bulb, would you be likely to purchase a compact fluorescent bulb to replace a burned-out bulb?

N =		1000	100%
Yes	1	584	58%
No	2	306	31%
Don't know	3	108	11%
Refused	4	2	0%

Q12:

Now, I want to talk about air conditioning. Now that you have a: <sampn><sampo><sampp>, Did you use it to cool your home more, less or about the same as you did before you participated in the program?

=> +1 IF NOT Q1N=1 AND NOT Q1O=1 AND NOT Q1P=1

N =		200	100%
More	1	78	39%
Less	2	34	17%
Same	3	81	41%
Don't know	4	7	4%
Refused	5	0	0%

Q13:

ENTER ALL THAT APPLY.

Why do you say that?

=> +1 IF NOT Q12=1-2

N =		112	100%
My house was too hot before, couldn't keep it cool enough	01	21	19%
It cost too much to use before, now it's cheaper to run	02	36	32%
Don't need to use it as much, keeps my house cooler now	03	34	30%
Need to use AC more/less for other reasons now (i.e., new baby, fewer occupants, etc.)	04	8	7%
Can use it in one room/Don't need to cool whole house	05	5	4%
Didn't have one before	06	4	4%
Use swamp cooler instead	07	4	4%
To save energy/reduce cost	08	3	3%
Other (SPECIFY):	97	2	2%
Don't know	98	2	2%
Refused	99	0	0%

SKIP2:

=> Q16A
sinon => +1 IF NOT Q1L=1 AND NOT Q1M=1

N =		0	100%

Q14:

I now have some questions about heating. Was your old furnace working before<UTILY> repaired [or replaced] it?

N =		272	100%
Yes	1	116	43%
No	2	148	54%
Don't know	3	6	2%
Refused	4	2	1%

Q15A:

Did you use your new [or repaired] furnace this past winter, that is the winter of 2001-2002?

N =		272	100%
Yes	1	243	89%
No	2	25	9%
Don't know	3	1	0%
Refused	4	3	1%

Q15:

Do you use your new/repaired furnace to heat your home more, less or about the same as you did before participating in the program?

=> Q16A IF NOT Q14=1

N =		116	100%
More	1	27	23%
Less	2	22	19%
Same	3	65	56%
Don't know	4	2	2%
Refused	5	0	0%

Q16:

ENTER ALL THAT APPLY.

Why do you say that?

=> +1 IF NOT Q15=1-2

N =		49	100%
My house was too cold before, couldn't keep it warm enough/ doesn't work well/only heats part of house	01	16	33%
It cost too much to use before, now it's cheaper to run	02	9	18%
Don't need to use it as much, keeps my house warmer now	03	12	24%
Need to use furnace more/less for other reasons now (i.e., new baby, fewer occupants, etc.)	04	9	18%
It's been colder	06	2	4%
Like the new programmable thermostat	05	3	6%
Other (SPECIFY):	97	2	4%
Don't know	98	0	0%
Refused	99	0	0%

Q16A:

Now, a few (more) questions about heating your home. In general, do you feel the cost of running your heating system is of great concern to you, of moderate concern, of little concern, or of no concern?

N =		1000	100%
Of great concern	1	509	51%
Of moderate concern	2	277	28%
Of little concern	3	108	11%
Of no concern	4	89	9%
Don't know	5	15	2%
Refused	6	2	0%

Q16B:

Does your concern regarding the cost of running your heating system cause you to use it less than you would like to in order to keep your home warm in the winter months?

=> +1 IF NOT Q16A=1-3

N =		894	100%
Yes	1	579	65%
No	2	283	32%
Don't know	3	29	3%
Refused	4	3	0%

Q17:

You mentioned you received a programmable thermostat as part of your participation in <UTILY>'s program. I'd like to get an idea of how you are using this thermostat to control the temperature of your home. First, do you usually adjust the temperature settings on your new thermostat manually or do you program it to adjust automatically at different times of the day?

=> Q19 IF NOT Q1S=1 OR Q1SA=2

N =		97	100%
Manual	1	61	63%
Program	2	34	35%
Don't know	3	1	1%
Refused	4	1	1%

Q18:

READ 1-4

How knowledgeable are you in how to program your thermostat to automatically adjust the temperature setting for different times of the day and different days of the week? Are you ...

N =		97	100%
Very knowledgeable	1	15	15%
Somewhat knowledgeable	2	31	32%
Not very knowledgeable	3	24	25%
Not at all knowledgeable	4	24	25%
Don't know - DO NOT READ	5	3	3%
Refused - DO NOT READ	6	0	0%

Q19:

DO NOT READ! RECORD FIRST MENTION ONLY.

Now, I'd like to ask you a few questions about your experience with<UTILY>'s program.
How did you FIRST hear about the program

N =			1000	100%
Someone knocked on my door	01		162	16%
Someone left a flyer on my door	02		36	4%
Neighbor	03		84	8%
Friend/relative/word of mouth	04		155	16%
Utility bill/insert	05		108	11%
Respondent called utility	06		30	3%
Utility called respondent	07		31	3%
Gas company rep	08		46	5%
Building manager/landlord	09		64	6%
Homeowners association	10		8	1%
Senior center	11		20	2%
Radio/TV	12		30	3%
Newspaper	13		32	3%
Charity	14		3	0%
Phone(Gen.)	15		9	1%
Meeting /Meetings at clubhouse/ Mobile home park/ Managers office	16		20	2%
Mail (not included with bill)	17		14	1%
Repairman	18		6	1%
Flyer(not left at the door)	19		6	1%
Care Program	20		2	0%
Internet	21		2	0%
Community program/newsletter	22		8	1%
Other (SPECIFY):	97		10	1%
Don't know	98	=> Q20	114	11%
Refused	99	=> Q20	0	0%

Q19A:

DO NOT READ! RECORD ALL THAT APPLY.

Have you heard about the program in any other ways?

N =		886	100%
Someone knocked on my door	01	14	2%
Someone left a flyer on my door	02	12	1%
Neighbor	03	42	5%
Friend/relative	04	56	6%
Utility bill/insert	05	61	7%
Respondent called utility	06	12	1%
Utility called respondent	07	6	1%
Gas company rep	08	13	1%
Building manager/landlord	09	9	1%
Homeowners association	10	4	0%
Senior center/Community center	11	7	1%
Radio/TV	12	48	5%
Newspaper	13	30	3%
Charity	14	1	0%
Phone(gen.)	15	1	0%
Meetings/Meetings at the clubhouse/ Mobile Home Park/ Managers office	16	1	0%
Mail (not included with the bill)	17	2	0%
Repairman	18	0	0%
Flyer(not left at the door)	19	3	0%
Care Program	20	3	0%
Had it before at previous residence/past experience	21	2	0%
Internet	22	2	0%
Community/church newsletter	23	2	0%
Expo/county fair	24	2	0%
NONE - NO OTHER WAYS	00	594	67%
Other (SPECIFY):	97	8	1%
Don't know	98	11	1%
Refused	99	0	0%

Q20:

I'd like to know how satisfied you were with various aspects of the program. How satisfied were you with the outreach workers who initially came to your home to see what energy efficiency measures you qualified for under the program? Were you completely satisfied, somewhat satisfied, not very satisfied or not at all satisfied with the outreach workers?

N =		1000	100%
Completely satisfied	1	779	78%
Somewhat satisfied	2	148	15%
Not very satisfied	3	27	3%
Not at all satisfied	4	13	1%
Don't know - DO NOT READ	5	27	3%
Refused - DO NOT READ	6	6	1%

Q24:

How difficult for you was it to provide the specific types of documents the outreach workers needed to verify your household's annual income? Was it very difficult, somewhat difficult, not very difficult or not at all difficult?

N =		1000	100%
Very difficult	1	13	1%
Somewhat difficult	2	44	4%
Not very difficult	3	124	12%
Not at all difficult	4	759	76%
Don't know - DO NOT READ	5	53	5%
Refused - DO NOT READ	6	7	1%

Q25:

In what way was it difficult? What documents in particular were difficult for you to provide?

=> +1 IF NOT Q24=1-3

N =		181	100%
No problem/Easy process	00	62	34%
RECORD COMMENTS	01	0	0%
Didn't look anything up/Didn't ask for any documents/did it all themselves	02	2	1%
Proof of income needed/Paycheck stub	03	19	10%
Marriage license	04	1	1%
SSI and Social Security forms	05	9	5%
Income Tax copies	06	2	1%
Bank statements/waiting for forms from bank	07	8	4%
Disability/hard to read or find papers/need someone to help me	08	6	3%
Hard for me to travel around/have to go different places to get info needed	09	5	3%
Just putting it all together/getting forms/making copies/takes organization	10	36	20%
Had to go through third party for some information	11	2	1%
Uncomfortable with sharing financial information	12	2	1%
Getting approval	13	2	1%
Other	97	6	3%
Don't know	98	36	20%
Refused	99	0	0%

Q26:

How satisfied were you with the amount of time it took from first being contacted by the outreach workers to having measures installed? Were you completely, somewhat, not very or not at all satisfied with the amount of time?

=> Q33 IF NOT Q1B=1

N =		877	100%
Completely satisfied	1	646	74%
Somewhat satisfied	2	153	17%
Not very satisfied	3	30	3%
Not at all satisfied	4	19	2%
Don't know - DO NOT READ	5	18	2%
Refused - DO NOT READ	6	11	1%

Q27:

About how long did it take between the time you were first contacted by the outreach worker and the time all of the program measures were installed? Was it ...

=> +1 IF Q26=5-6

N =		868	100%
Within one to two weeks	1	326	38%
Within one to two months	2	243	28%
Or, More than three months	3	119	14%
Don't know - DO NOT READ	4	175	20%
Refused - DO NOT READ	5	5	1%

Q28:

How satisfied were you with the people who came to your home to install measures? Were you completely, somewhat, not very or not at all satisfied?

N =		877	100%
Completely satisfied	1	693	79%
Somewhat satisfied	2	118	13%
Not very satisfied	3	27	3%
Not at all satisfied	4	17	2%
Don't know - DO NOT READ	5	18	2%
Refused - DO NOT READ	6	4	0%

Q30:

How satisfied were you with the free measures that were installed in your home? Were you completely, somewhat, not very or not at all satisfied with the free measures?

N =		877	100%
Completely satisfied	1	706	81%
Somewhat satisfied	2	115	13%
Not very satisfied	3	13	1%
Not at all satisfied	4	25	3%
Don't know - DO NOT READ	5	13	1%
Refused - DO NOT READ	6	5	1%

Q31:

What aspects of the program were you not completely satisfied with? What else?

=> +1 IF NOT Q20=2-4 AND NOT Q24=2-4 AND NOT Q26=2-4 AND NOT Q28=2-4

N =		858	100%
No complaints/satisfied	00	467	54%
RECORD COMMENTS	01	134	16%
Took too much time from start to finish to complete the job	02	13	2%
Weatherstripping installed improperly/ (gen.)	03	8	1%
Not responsive/Didn't return phone calls	04	5	1%
Incomplete job/left without finishing the project	05	28	3%
Replacement is not working properly/Doesn't fit correctly	06	16	2%
Have not received item I was promised/not delivered yet	07	15	2%
Repaired old appliance instead of giving me a new one/not worth fixing/prefer new one	08	3	0%
Light bulbs burned out quickly/Didn't last as long as promised	09	9	1%
Left a mess/broke things/poor service by installer	10	10	1%
Documents lost/too much paperwork	11	2	0%
Wrong information given/Still waiting for repair	12	18	2%
Repair person not knowledgeable/Can't answer questions/Inexperienced	13	18	2%
Poor attitude from repair person/rude	14	5	1%
Problems with air conditioner	15	5	1%
Problems with refrigerator/to small/to big/ to noisy	16	22	3%
Problems with windows/ poor caulking around window frames	17	20	2%
Problem with doors/Not enough installation	18	14	2%
Problems with water heater/to small/ no blanket	19	8	1%
Problems with showerheads/low pressure	20	6	1%
Problems with furnace/ heaters not working	21	14	2%
Did not qualify for program I wanted	22	2	0%
Other aspects	97	5	1%
Don't know	98	109	13%
Refused	99	2	0%

Q33:

Have you noticed any change in the comfort levels in your home since participating in the<PROGM>? IF YES: Has your comfort increased or decreased?

N =		1000	100%
Yes, increased comfort	1	620	62%
Yes, decreased comfort	2	38	4%
No change	3	314	31%
Don't know	4	25	3%
Refused	5	3	0%

Q34:

DO NOT READ! RECORD FIRST MENTION ONLY.

What has caused the comfort levels in your home to increase[decrease]?

=> +2 IF NOT Q33=1-2

N =			658	100%
New furnace/Repaired furnace	01		159	24%
New air conditioner/Evaporative Cooler/Swamp Cooler	02		90	14%
Weatherization measures (insulation, weatherstripping, caulking)	03		201	31%
Home repair measures (new windows, doors)	04		43	7%
Programmable thermostat/constant temperature	05		31	5%
Water heater/don't run out of hot water	06		7	1%
Lighting	07		13	2%
All the work they did/Everything they installed	09		6	1%
Lowered bills/Don't have to put out as much money/Energy savings	10		14	2%
Refrigerator	11		16	2%
Cooler Cover	12		4	1%
New appliances	13		2	0%
Whole house fan	14		2	0%
Everything is working/things are better	15		7	1%
Warmer/Cooler	16		15	2%
Making an effort to conserve/more aware	17		2	0%
Other (SPECIFY):	97		6	1%
Don't know	98	=> Q35	40	6%
Refused	99	=> Q35	0	0%

Q34A:

ENTER ALL THAT APPLY.

Anything else that caused the comfort level to change?

N =		618	100%
New furnace/Repaired furnace	01	38	6%
New air conditioner/Evaporative cooler/Swamp	02	18	3%
Weatherization measures (insulation, weatherstripping, caulking)	03	71	11%
Home repair measures (new windows, doors)	04	45	7%
Programmable thermostat	05	24	4%
Water heater/don't run out of hot water	06	15	2%
Lighting	07	19	3%
Lowered bills/don't have to put out as much money	10	7	1%
Refrigerator	11	17	3%
Cooler Cover	12	5	1%
Water heater pad/blanket	13	3	0%
Warmer/Cooler	16	1	0%
Low flow shower heads/shower heads	18	6	1%
Everything/all the work they did	20	3	0%
Other (SPECIFY):	97	11	2%
No/Nothing else	00	369	60%
Don't know	98	4	1%
Refused	99	1	0%

Q35:

Have you noticed any change in your utility bill since participating in the<PROGM>? IF YES: Has your bill gone up or down?

N =			1000	100%
Yes, bill has gone up	1		126	13%
Yes, bill has gone down	2		497	50%
No change	3	=> Q37	302	30%
Don't know	4	=> Q37	73	7%
Refused	5	=> Q37	2	0%

Q36:

DO NOT READ! RECORD FIRST MENTION ONLY.

What has caused your utility bill to go up [down]?

=> +2 IF NOT Q33=1-2

N =			532	100%
New furnace	01		89	17%
New air conditioner/swamp cooler	02		62	12%
Weatherization measures (insulation, weatherstripping, caulking)	03		81	15%
Home repair measures (new windows, doors)	04		1	0%
Programmable thermostat	05		12	2%
New refrigerator	06		43	8%
New water heater	07		13	2%
CFLs (Compact fluorescent lights)	08		39	7%
Other installed measures	09		15	3%
Behavioral changes (turn off lights, wash in warm/cold water, lower/higher temperature set-points, etc.)	10		43	8%
More/less usage (general)	11		10	2%
Warmer/cooler weather	12		6	1%
Price went up/down / 20% discount / Program discount	13		18	3%
All efficiency measures combined/program overall	15		18	3%
Other (SPECIFY):	97		42	8%
Don't know	98	=> Q37	40	8%
Refused	99	=> Q37	0	0%

Q36A:

ENTER ALL THAT APPLY.

Anything else?

N =			450	100%
New furnace	01		21	5%
New air conditioner/swamp cooler	02		15	3%
Weatherization measures (insulation, weatherstripping, caulking)	03		54	12%
Home repair measures (new windows, doors)	04		22	5%
Programmable thermostat	05		10	2%
New refrigerator	06		30	7%
New water heater	07		23	5%
CFLs (Compact fluorescent lights)	08		43	10%
Other installed measures	09		12	3%
Behavioral changes (turn off lights, wash in warm/cold water, lower/higher temperature set-points, etc.)	10		31	7%
More/less usage (general)	11		3	1%
Warmer/cooler weather	12		3	1%
Price went up/down / 20% discount / Program discount	13		7	2%
All efficiency measures combined/program overall	15		2	0%
NONE - Nothing else	00		239	53%
Other (SPECIFY):	97		13	3%
Don't know	98	=> Q37	3	1%
Refused	99	=> Q37	0	0%

Q37:

READ 1-4

How knowledgeable would you say you are in terms of ways you could go about saving energy at home? Would you say you are ...

N =		1000	100%
Very knowledgeable	1	459	46%
Somewhat knowledgeable	2	448	45%
Not very knowledgeable	3	61	6%
Not at all knowledgeable	4	13	1%
Don't know - DO NOT READ	5	12	1%
Refused - DO NOT READ	6	7	1%

Q38:

Do you know more about ways to save energy in your home since participating in the program or did you know as much before hand?

N =		1000	100%
Yes, more knowledgeable	1	506	51%
No, no change/Already knew before hand	2	466	47%
Don't know	3	24	2%
Refused	4	4	0%

Q39:

READ 1-4

How informative did you find the energy information left behind by the outreach workers, including the brochures and packets of materials you received? Did you find them ...

N =		1000	100%
Very informative	1	559	56%
Somewhat informative	2	265	27%
Not very informative	3	16	2%
Not at all informative	4	12	1%
DO NOT READ:			
Don't recall receiving information/packet of materials	5	91	9%
Did not read/didn't look at, but got it	6	37	4%
Don't know	7	18	2%
Refused	8	2	0%

Q40:

READ 1-4

Prior to participating in <UTILY>'s program, how concerned were you regarding the safety of your gas appliances? Were you ...

N =		1000	100%
Very concerned	1	501	50%
Somewhat concerned	2	174	17%
Not very concerned	3	115	12%
Not at all concerned	4	156	16%
DO NOT READ:			
Don't know	5	39	4%
Refused	6	10	1%
No gas appliances	7	5	1%

Q41:

Do you feel your home is safer as a result of the home improvements you got through the program?

N =		1000	100%
Yes	1	786	79%
No	2	155	16%
Don't know	3	57	6%
Refused	4	2	0%

Q42:

As a part of PG&E's program, did you receive a combustion appliance safety test?

=> Q50 IF NOT UTILY=1

N =			250	100%
Yes	1	=> Q44	120	48%
No	2	=> Q47	35	14%
Don't know	3		95	38%
Refused	4	=> Q47	0	0%

Q43:

A combustion appliance safety test may have been conducted to check how much carbon monoxide is being released into the air in your home by your gas appliances. Now that I've described the test, do you recall receiving it through PG&E's program?

N =			95	100%
Yes	1		40	42%
No	2	=> Q47	31	33%
Don't know	3	=> Q47	24	25%
Refused	4	=> Q47	0	0%

Q44:

Did your gas appliances pass or fail the test? NOTE, IF ANY MENTION OF FAIL, ENTER CODE 2

N =			160	100%
All passed	1		134	84%
Failed	2		22	14%
Don't know/Not sure	3		4	3%
Refused	4		0	0%

Q45:

Since having the combustion appliance safety test performed, do you feel your home is more safe, less safe, or about as safe as it was prior to participating in PG&E's program?

N =			160	100%
More safe	1		110	69%
Less safe	2		0	0%
About as safe	3	=> Q47	47	29%
Don't know	4	=> Q47	3	2%
Refused	5	=> Q47	0	0%

Q46:

Why do you say that?

N =		110	100%
RECORD COMMENTS	01	0	0%
Everything passed the test (gen)	02	5	5%
Feeling safer because it was tested	03	45	41%
Everything is working well/no more problems/under control now	04	12	11%
New water heater/heater	05	5	5%
New lights	06	1	1%
New stove	07	2	2%
Fixed the water heater, furnace/Cleaned the water heater, furnace	08	7	6%
Put insulation around windows, doors	09	3	3%
Other new appliances	14	2	2%
Checked for gas leaks	10	14	13%
Checked for carbon monoxide	11	18	16%
Like that they put in meter to warn of problem	12	5	5%
Gave me information on safety measures/my appliances	13	2	2%
Other	97	5	5%
Don't know	98	3	3%
Refused	99	0	0%

Q47:

Have you done anything else on your own to reduce your energy use since participating in the<PROGM>?

N =			250	100%
Yes	1		124	50%
No	2	=> Q50	125	50%
Don't know	3	=> Q50	1	0%
Refused	4	=> Q50	0	0%

Q48:

DO NOT READ! RECORD FIRST MENTION ONLY.

Please describe. (What else you have done to reduce your energy use since participating in the<progm>).

N =			124	100%
Turn off lights	01		30	24%
Shift appliance/equipment use to off-peak	02		3	2%
Careful/watch energy consumption (general)	03		8	6%
Turn off/use less TV	04		2	2%
Turn off/unplug/use less electrical appliances (general)	05		1	1%
Turn off heat, turn off heat at night, turn down heat	06		19	15%
Turn down AC, use fans instead	07		1	1%
Turn down water heater	08		2	2%
Use less hot water, wash in cold/warm	09		5	4%
Use clothes dryer less, hang out clothes to dry	10		3	2%
Use more energy efficient appliances (unspecified)	11		2	2%
Installed more efficient appliances (other mentions)	14		10	8%
Change/fix/close/seal/cover windows	12		23	19%
Added weatherstripping/insulation	16		4	3%
Purchased more compact fluorescent light bulbs	15		3	2%
Replaced roof	17		2	2%
Wear sweater/more clothing	13		2	2%
Other (SPECIFY):	97	=> Q50	3	2%
Don't know	98	=> Q50	1	1%
Refused	99	=> Q50	0	0%

Q49:

DO NOT READ! RECORD ALL THAT APPLY.

Anything else?

N =		113	100%
Turn off lights	01	20	18%
Shift appliance/equipment use to off-peak	02	0	0%
Careful/watch energy consumption (general)	03	13	12%
Turn off/use less TV	04	6	5%
Turn off/unplug/use less electrical appliances (general)	05	1	1%
Turn off heat, turn off heat at night	06	18	16%
Turn down AC, use fans instead	07	3	3%
Turn down water heater	08	4	4%
Use less hot water, wash in cold/warm	09	6	5%
Use clothes dryer less, hang out clothes to dry	10	7	6%
Use more energy efficient appliances (unspecified)	11	1	1%
Installed more efficient appliances (other mentions)	14	1	1%
Change/fix/close/seal/cover windows	12	5	4%
Purchased more compact fluorescent light bulbs/smaller watt bulbs	15	2	2%
Wear sweater/more clothing	13	1	1%
Replaced roof	16	1	1%
Added weatherstripping/insulation/caulking	17	2	2%
NONE - Nothing else	00	57	50%
Other (SPECIFY):	97	5	4%
Don't know	98	0	0%
Refused	99	0	0%

Q50:

Are you currently enrolled in the CARE program? IF NECESSARY: EXPLAIN THAT THE CARE PROGRAM IS A SPECIAL RATE THAT PROVIDES A 20% DISCOUNT ON ENERGY BILLS TO CUSTOMERS WHO QUALIFY BASED ON THEIR HOUSEHOLD INCOME LEVEL.

N =		1000	100%
Yes, enrolled in CARE	1	607	61%
No, not enrolled in CARE	2	273	27%
Don't know	3	118	12%
Refused	4	2	0%

Q51:

Did the<UTILY>representative sit down with you to figure out if you were eligible for the CARE program?

N =		1000	100%
Yes	1	329	33%
No	2	531	53%
Don't know	3	136	14%
Refused	4	4	0%

Q52:

Were you enrolled in the CARE program before you participated in the<progm>?

N =		1000	100%
Yes	1	395	40%
No	2	492	49%
Don't know	3	110	11%
Refused	4	3	0%

Q58:

Now I'd like you to rate some services you may have received through participating in the<PROGM>. I'd like you to rate each of these services on a scale of one to five, with one meaning "of little value" and five meaning "very high value." If you didn't receive the service, just let me know. The first service is...

N =		1000	100%
Continue	1	1000	100%

Q58B:

(Please rate this service on a scale of one to five, with one meaning "of little value" and five meaning "very high value." If you didn't receive the service, just let me know.)

The brochures on general ways to save energy in your home?

=> +1 IF Q39=5

N =		909	100%
Of little value	1	43	5%
Two	2	27	3%
Three	3	134	15%
Four	4	147	16%
Very high value	5	458	50%
DID NOT RECEIVE THIS SERVICE	6	43	5%
Don't know	7	53	6%
Refused	8	4	0%

Q58C:

(Please rate this service on a scale of one to five, with one meaning "of little value" and five meaning "very high value." If you didn't receive the service, just let me know.)

The discussion with the<UTILY> representative on specific things you could do to save energy in your home?

N =		1000	100%
Of little value	1	34	3%
Two	2	28	3%
Three	3	95	10%
Four	4	158	16%
Very high value	5	423	42%
DID NOT RECEIVE THIS SERVICE	6	200	20%
Don't know	7	59	6%
Refused	8	3	0%

Q58D:

(Please rate this service on a scale of one to five, with one meaning "of little value" and five meaning "very high value." If you didn't receive the service, just let me know.)

Your enrollment in the CARE program?

=> +1 IF NOT Q50=1

N =		607	100%
Of little value	1	9	1%
Two	2	6	1%
Three	3	18	3%
Four	4	57	9%
Very high value	5	472	78%
DID NOT RECEIVE THIS SERVICE	6	19	3%
Don't know	7	25	4%
Refused	8	1	0%

Q58A:

(Please rate this service on a scale of one to five, with one meaning "of little value" and five meaning "very high value." If you didn't receive the service, just let me know.)

The information about other utility and state assistance programs?

N =		1000	100%
Of little value	1	51	5%
Two	2	29	3%
Three	3	91	9%
Four	4	114	11%
Very high value	5	264	26%
DID NOT RECEIVE THIS SERVICE	6	329	33%
Don't know	7	117	12%
Refused	8	5	1%

Q58E:

(Please rate this service on a scale of one to five, with one meaning "of little value" and five meaning "very high value." If you didn't receive the service, just let me know.)

The "energy wheel" calculator that showed how much your appliances cost you to run?

=> +1 IF NOT UTILY=1

N =		250	100%
Of little value	1	10	4%
Two	2	8	3%
Three	3	15	6%
Four	4	28	11%
Very high value	5	78	31%
DID NOT RECEIVE THIS SERVICE	6	78	31%
Don't know	7	33	13%
Refused	8	0	0%

Q58F:

(Please rate this service on a scale of one to five, with one meaning "of little value" and five meaning "very high value." If you didn't receive the service, just let me know.)

The time spent with the<UTILY>representative going over how to read your energy bill?

N =		1000	100%
Of little value	1	56	6%
Two	2	26	3%
Three	3	56	6%
Four	4	106	11%
Very high value	5	228	23%
DID NOT RECEIVE THIS SERVICE	6	425	43%
Don't know	7	99	10%
Refused	8	4	0%

Q58G:

(Please rate this service on a scale of one to five, with one meaning "of little value" and five meaning "very high value." If you didn't receive the service, just let me know.)

The combustion appliance safety test?

=> +1 IF NOT UTILY=1 OR NOT Q45>0

N =		160	100%
Of little value	1	4	3%
Two	2	3	2%
Three	3	9	6%
Four	4	24	15%
Very high value	5	115	72%
DID NOT RECEIVE THIS SERVICE	6	3	2%
Don't know	7	2	1%
Refused	8	0	0%

Q58H:

(Please rate this service on a scale of one to five, with one meaning "of little value" and five meaning "very high value." If you didn't receive the service, just let me know.)

The installation of energy saving measures?

N =		1000	100%
Of little value	1	33	3%
Two	2	31	3%
Three	3	78	8%
Four	4	145	15%
Very high value	5	545	55%
DID NOT RECEIVE THIS SERVICE	6	118	12%
Don't know	7	47	5%
Refused	8	3	0%

Q59:

PROBE AND CLARIFY

What ideas do you have for improving existing services and the information that was left behind? IF NECESSARY: PROBE FOR SUGGESTIONS HAVING TO DO WITH THE VALUE OF EXISTING SERVICES, NEW SERVICES THAT WOULD BE VALUABLE, THE PROCESS OF PARTICIPATING, ETC.

N =		1000	100%
RECORD COMMENTS	01	0	0%
Reduce rates/lower prices	02	12	1%
More information on how to save energy/save money	03	15	2%
Leave more information behind/Information was not left behind	04	15	2%
Make people more aware of program/more information on programs offered	05	26	3%
Information on how to read meters	06	2	0%
More information on other topics	07	7	1%
Follow up call/visit to see how things are working	09	11	1%
Continue home visits/visit more often	10	5	1%
Spend more time explaining how appliances/improvements work	12	10	1%
Return phone calls	13	4	0%
Do a more thorough inspection/Check more/everything in the house	15	6	1%
Do everything at once/Use a checklist to complete everything in one visit	16	4	0%
Timeliness/Less time for work completing/Shorter time frame between inspection and work completion	17	4	0%
Finish what they started/Do what they said they would	18	22	2%
Better quality installation/Better trained installers/workers	19	30	3%
Be more helpful (general)	20	3	0%
Better vendors	21	3	0%
New heating/cooling system/Fix heating/cooling system	23	10	1%
New windows/window screens/Fix windows/New door	24	24	2%
Weatherization/weatherstripping/caulking/insulation	25	23	2%
CFLBs/New light bulbs	26	7	1%
New refrigerator/stove/other appliance	27	10	1%
Better quality items/appliances/fixtures/Appliances/items don't work well	28	12	1%
Expand program/offer more items/longer timeframe	30	7	1%
Come out and check gas furnace/light it/check gas line	33	4	0%
More knowledgeable representatives	34	3	0%
Mail the questionnaire/leave at house	31	2	0%
Offer Spanish translators/information in Spanish	32	3	0%
Use less energy	36	2	0%
NONE - NO SUGGESTIONS	00	674	67%
Other ideas	97	32	3%
Don't know	98	48	5%
Refused	99	2	0%

Q62A:

ENTER NUMBER

We're nearly done. I only have a few final questions about your household and your home. First, can you tell me how many people in your home are ...

Age 5 or younger?

N =		1000	100%
None	0	864	86%
7 or more	7	0	0%
Don't know	8	0	0%
Refused	9	3	0%
	1	84	8%
	2	38	4%
	3	6	1%
	4	5	1%

Q62B:

ENTER NUMBER

(How many people in your home are ...)

Age 6 to 17?

N =		1000	100%
None	0	749	75%
7 or more	7	0	0%
Don't know	8	1	0%
Refused	9	2	0%
	1	108	11%
	2	92	9%
	3	32	3%
	4	11	1%
	5	3	0%
	6	2	0%

Q62C:

ENTER NUMBER

(How many people in your home are ...)

Age 18 to 64?

N =		1000	100%
None	0	449	45%
7 or more	7	1	0%
Don't know	8	0	0%
Refused	9	2	0%
	1	234	23%
	2	192	19%
	3	95	10%
	4	19	2%
	5	6	1%
	6	2	0%

Q62D:

ENTER NUMBER

(How many people in your home are ...)
65 or older?

N =		1000	100%
None	0	408	41%
7 or more	7	1	0%
Don't know	8	0	0%
Refused	9	4	0%
	1	441	44%
	2	144	14%
	3	1	0%
	4	1	0%

Q63:

Do you own or rent your home?

=> +1 IF NOT UTILY=1,4

N =		500	100%
Own	1	312	62%
Rent	2	184	37%
Don't know	3	3	1%
Refused	4	1	0%

Q64:

READ 1-4.

How long have you lived in this home? Have you lived there ...

N =		1000	100%
Less than one year	1	5	1%
1-5 years	2	328	33%
5-20 years	3	406	41%
More than 20 years	4	257	26%
Don't know - DO NOT READ	5	0	0%
Refused - DO NOT READ	6	4	0%

Q66:

READ 1-3.

What type of home do you live in? Is it a ...

=> +1 IF NOT UTILY=1

N =		250	100%
Mobile home	1	85	34%
Manufactured home	2	9	4%
Single-family home (INCLUDES CONDOS/TOWNHOMES)	3	124	50%
or Multi-family home (INCLUDES APARTMENTS/IN-LAWS)	4	31	12%
Don't know - DO NOT READ	8	1	0%
Refused - DO NOT READ	9	0	0%

Q67:

Does your home have central air conditioning, room air conditioners or an evaporative cooler?

=> +1 IF Q1N=1 OR Q1O=1 OR Q1P=1

N =		800	100%
Central air	1	224	28%
Room air	2	93	12%
Evaporative cooler (swamp cooler)	3	215	27%
None	7	309	39%
Don't know	8	10	1%
Refused	9	2	0%

Q68:

READ 1-4.

What is the primary fuel used to heat your home? Is it ...

=> +1 IF Q1L=1 OR Q1M=1

N =		728	100%
Natural gas	01	545	75%
Electricity	02	145	20%
Propane	03	7	1%
Wood	04	8	1%
None	05	10	1%
Other (SPECIFY):	97	6	1%
Don't know - DO NOT READ	98	6	1%
Refused - DO NOT READ	99	1	0%

Q69:

READ 1-4.

What is the primary type of fuel that is used for water heating? Is it ...

N =		1000	100%
Natural gas	01	844	84%
Electricity	02	90	9%
Propane	03	6	1%
Solar	04	3	0%
Other (SPECIFY):	97	4	0%
Don't know - DO NOT READ	98	52	5%
Refused - DO NOT READ	99	1	0%

GENDR:

DO NOT ASK!

RECORD GENDER

N =		1000	100%
Male	1	260	26%
Female	2	740	74%

LANG:

THE INTERVIEW WAS DONE IN:

N =		1000	100%
English	1	930	93%
Spanish	2	70	7%

INT01:

$E

Well, those are all of the questions I have for you today. Thank you so much for your time and input to this survey. Have a great day!

N = ...			1000	100%
Completed Interview	01	=> /ATMPT	1000	100%

D

PUBLIC INPUT WORKSHOP REPORT

PY2001 LIEE Program Evaluation
Final Report Presentation
Public Input Workshop
Pacific Energy Center, San Francisco, CA
March 26, 2003

Attendees: The following utility staff, consultants, and guests were present for the workshop:

PG&E:	Mary O'Drain	415-973-2317	mjob@pge.com
ICA:	Bob Burt	916-444-2950	bob.burt@macnexus.org
SCE:	Jack Parkhill	626-302-8040	jack.parkhill@sce.com
XENERGY:	Fred Coito	510-891-0446	fcoito@kema-xenergy.com
XENERGY:	Tami Rasmussen	510-891-0446	trasmussen@ kema-xenergy.com
XENERGY:	Kathleen Gaffney	510-891-0446	kgaffney@ kema-xenergy.com
CPUC-ORA	Gilbert Escamilla	415-703-1862	gil@cpuc.ca.gov
CPUC-ED	Jeorge Tagnipes	415-703-2451	jst@cpuc.ca.gov

Call-Ins: The following utility staff called in to the meeting:

SCG:	Sharon Lee	213-244-3248	slee@semprautilities.com
SCE:	Angela Jones	626-302-8302	angela.jones@sce.com
SDG&E:	Kevin McKinley	858-654-1260	kmckinley@semprautilities.com
SDG&E:	Dave Rogers	858-636-5791	drogers@semprautilities.com

A Public Input Workshop was held on March 26, 2003 at the Pacific Energy Center in San Francisco. Eight persons were present for the workshop, and four persons participated by conference call. This Workshop Report summarizes the public input and discussion from that meeting.

The workshop was convened shortly after 10am. Kathleen Gaffney of KEMA-XENERGY introduced the evaluation final results workshop. Fred Coito of KEMA-XENERGY then presented the PY2001 LIEE Program Impacts (included as Attachment A). The floor was then opened for comments and questions. Several issues were raised and discussed. Subsequently, Tami Rasmussen of KEMA-XENERGY then presented PY2001 Process Evaluation findings (included as Attachment A). Several issues were raised and discussed. Presented below is a summary of the discussions that took place after each presentation, by topic. Additional comments were submitted following the workshop, and these written comments are included as an attachment to this report.

Final Results of the Impact Evaluation

1. Is there a "next step" for following up on recommendations? (Bob Burt)

There weren't any real impact recommendations from this impact evaluation. The design is set and determined by the utilities. The impact evaluation approach does a good job at looking at whole-house savings, however it is not the best approach for deriving measure-level results.

2. Note that the utilities are planning on studying the issue of how best to determine measure-level impacts. (Angela Jones)

3. In PY2002, SCE impacts are attributed mostly to installation of CFLs. Note that as they go to comprehensive treatment, savings will go down significantly. (Angela Jones)

4. An analysis of bill savings might be valuable, since that is what the program is designed to address. (Bob Burt)

5. The utilities perform a bill savings analysis, using the results from this impact evaluation as inputs. (Angela Jones)

Final Results of the Process Evaluation

1. These recommendations in effect are not expected to create immediate action. There is a follow-up step that will determine what the utilities do or are told to do. (Bob Burt)

2. Some things are within the utilities control to take action on or not. Others will need to be taken up by other parties, e.g., new measures, income documentation requirements, etc. (Mary O'Drain)

3. So the specific recommendations regarding income documentation will await a team recommendation followed by the CPUC decision. (Bob Burt)

4. The commission could decide to change something or direct the team to look at it again. (Mary O'Drain)

5. There could be commission action based on this? (Bob Burt)

Some recommendations have already been implemented or the utilities are working on them. The report executive summary and recommendation sections note where we were told something had changed or is currently being worked on. (KEMA-XENERGY).

6. For example, for PG&E changed its contractor payment process to "pay-as-you-go", which is an example of PG&E taking action without an order. There are

different types of recommendations – some can be acted on, some need further direction on, some could be ordered. (Mary O'Drain).

7. How was the sample developed for the participant survey? (Gilbert Escamilla)

It wasn't completely random. We over-sampled some measures to ensure adequate results for all measures. (KEMA-XENERGY)

The meeting was concluded at approximately 11:00am.

Attachments. Written comments submitted after the workshop are included as Attachment A. The PY2001 LIEE program evaluation final results workshop presentation is included as Attachment B.

Workshop Attachment A:
Written Comments Submitted after the Public Workshop

Comments by the
Insulation Contractors Association
on the
Process Evaluation of the 2001 Statewide Energy Efficiency (LIEE) Program

Robert E. Burt
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e-mail: bburt@macnexus.org

Dated: March 31, 2003

Introduction

I It Is Important That Action Be Taken On This Report

II. "Insulation was found to be more effective than previously believed."

III. Other Issues

- A. Duct Installation Standards
- B. Income Documentation Retention Should be Reconsidered.
- C. Comprehensive Treatment in SCE Territory.
- D. Increased Coordination Between SCE and SCG.
- E. Improving Program Management.
- F. Implementation Improvements.
- G. Offering the Most Cost Effective Mix of Measures

1 INTRODUCTION

Comes now, the Insulation Contractors Association (ICA), to provide follow up comments on the subject Report. The ICA is a voluntary association of contractors who install insulation. Most of our members also have other interests. *Where we make recommendations for measure-related action, we believe those recommendations should be provided to the Utility Team for consideration as a part of the planning for the Year 2004 LIEE program.*

2 I IT IS IMPORTANT THAT ACTION BE TAKEN ON THIS REPORT

At the March 26 Workshop on the Report, it was made clear that the Report is not an action document. Any action which follows must be on the initiative of either the Commission or (where within

their powers) the Program managers. *We believe that it is important that action be taken on the Recommendations therein, which are generally thoughtful and serious.*

II. "Insulation was found to be more effective than previously believed."

The above is a reasonable paraphrase of a part of the verbal summary provided by the first KEMA consultant to speak at the Workshop. We found this comment nowhere in the published Report. We assume it is there by inference, if the insulation measure savings data are compared to those of previous years. However, we have no way to derive it, since each year's attic insulation installations consisted of a complex mixture of different amounts of insulation actually placed in each attic. As insulation contractors, we obviously believe that this finding is very important. *We recommend that the improved attic insulation findings be reviewed to consider whether attic insulation should be called for in Climate Zones where it is not now required.*

A. Duct Installation Standards (Report p 5-2). This issue was also raised by Winegar in the LIEE Cost Effectiveness Workshop. He pointed out that the going standard was tight enough so that really leaky ducts could not be brought up to it for any reasonable expenditure; suggested before and after tests to provide payment for improvement. In our Comments, *we suggested that before and after tests might so increase the overhead as to make the measure not cost effective and suggested simply reducing the standard.* We recommend that any study for changes in this measure interview Winegar and any other contractors who did significant duct testing, wither in the LIEE or in the related non-low income program.

B. Income Documentation Retention Should be Reconsidered. (Report, p 5-2) The fact that other Program Managers did not feel the need for this action for years is, to us, the best indication that it should be reconsidered. Keep in mind that all program dollars spent on customer qualification have zero energy efficiency benefit. *Reconsider the document retention aspect of customer qualification.*

C. Comprehensive Treatment in SCE Territory. (Report p 5-3) We obviously support comprehensive treatment. However, we are sensitive to SCE's comment that this will reduce the number of

customers who can be treated with the available funds. However, as the Report points out, in 1993 the Feds increased the required energy efficiency of refrigerators, so the existing stock which can provide significant energy improvement is obviously declining.

D. Increased Coordination Between SCE and SCG. (Report p 5-4) We agree with that increased coordination is desirable. But we also point out that the existing SCE-SCG agreement is the only part of the LIEE program that specifically excludes private contractors. *We recommend that any new SCE-SCG coordination agreement allow a private contractor to work in any area where he already has contracted work.*

E. Improving Program Management. (Report 5-4, et seq) We believe that the recommendations made here are within the powers of the existing Program Managers. *We also recommend that the Commission periodically privately interview contractors on these and related issues, to prevent similar problems in the future.* It must be recognized that contractors are greatly inhibited from filing complaints with the Commission, since many aspects of Contract Administration are solely judgmental and contractors fear retribution if a complaint, however justified, is made to the Commission.

F. Implementation Improvements. (Report p 5-6 et seq) The bulk of the Recommendations made here favorably respond to actual implementation actions in the PY 2001 program. *They should therefore be well within the scope of any order for the PY 2004 program.*

G. Offering the Most Cost Effective Mix of Measures (Report p 5-9 et seq) *We believe each of the measure suggestions found here deserve serious consideration*.

Respectfully submitted,

Robert E. Burt, Consultant

SCE Comments on the Draft Final Report
Process Evaluation of the 2001 Statewide Low-Income Energy Efficiency (LIEE) Program

SCE appreciates the opportunity to offer comments on the Draft Workshop Report (the "Report"). SCE appreciates the extent to which the recent changes to LIEE programs have added to the complexity of tasks involved in preparing the Report. Overall, the Report does an excellent job of reflecting SCE's 2001 administrative structure and processes and many of SCE's process revisions that have been made since that time. At the same time, however, the Report inadequately considers how differences in the SCE and SoCalGas programs affect the feasibility of some of the Report's broad recommendations for coordinating services between the two programs.

The Report recommends that SCE and SoCalGas contractors in the overlapping service territories enroll customers in both utilities' programs and that customers should be assessed for measures offered under both programs. The Report makes this recommendation on the assumption that this level of coordination would lead to cost efficiencies due to sharing of enrollment, outreach, energy education, and assessment costs across the two utilities. The major differences in the two programs are the high cost associated with electric measures (refrigerators, a/c units) and the number of homes serviced. As noted below, due to the differences between the two programs in the number of homes receiving service, the costs associated with providing comprehensive treatment, and the fact that many needy customers live outside the SoCalGas service area in hot climates with high cooling costs, these recommendations are unworkable. SCE is committed to maintaining a high degree of coordination with SoCalGas and its installation contractors as is feasible and in the best interest of all of its customers.

In 2003, SCE has initiated operational changes that maximize efficiency opportunities between the two utility programs while assuring that SCE can comply with Commission direction (Decision 02-12-019, Ordering Paragraph 2) that utilities "…shall manage their authorized budgets for PY2003 in a manner that maintains program service throughout the year." The Report's recommendation that would require all low-income customers serviced by SoCalGas be enrolled in SCE's program should be eliminated, given the adverse effect it would have on SCE's ability to manage its budget and deliver these important services to SCE's low-income customers throughout its entire service territory.

Within the context of the above comments, SCE provides comments on specific sections of the Report.

Section E.2.3 Providing Comprehensive Treatment to LIEE Program Participants

The introduction of new Rapid Deployment measures and the requirement for comprehensive delivery of service has created a significant disparity between SCE and SoCalGas in the cost of providing comprehensive services per home. For a given home

with gas space heating, SoCalGas may spend an average of $370 per home for weatherization services. For the same home on the other hand, SCE may spend as much as $500 just for a refrigerator. If a high-cost electric measure, such as a central air conditioner replacement, is installed, SCE may spend thousands of dollars on this home. Thus, it is not difficult to see that SCE would quickly deplete its budget if SCE would implement the Report's recommendation that SoCalGas' contractors *enroll* all 42,000+ homes that SoCalGas plans to weatherize each year into SCE's program. Under such a scenario, not only would SCE be unable to deliver services to all SoCalGas weatherization customers, but funding would be sufficiently depleted to provide little if any meaningful service to other customers who reside in the extreme climate areas outside of the overlapping service territories.

Because of this essential difference in the programs, SCE must retain management controls to regulate the workflow of homes being enrolled in a manner that complements existing program resources. SCE acknowledges that some opportunities may exist to increase coordination above our already high levels of program coordination. SCE is currently developing agreements with SoCalGas Weatherization contractors for electric measure assessment for customers in the overlap areas. By carefully managing the workflow of this assessment process, SCE should be able to retain sufficient resources to direct services to eligible customers in hot dry climates with high cooling loads. Another way of reducing the disparity in the number of homes that can be treated would be to limit the eligibility for high-cost cooling measures to specific climate zones, as has been suggested by the LIEE Standardization Team.

SCE's program structure has been revised so that any customer receiving a single measure under SCE's 2003 program will be assessed for eligibility and will receive all electric related measures to which they are entitled. SCE controls the number of customers that are enrolled in SCE's program to ensure that customers receive the comprehensive delivery of all feasible measures, including high-cost measures.

Section 4.3.2 Potential Drawbacks and Section 5.3 Increasing Consistency of Treatment Across the State

The Report predicts that SCE should be able to offset the reduced number of customers it can now serve under comprehensive treatment due to savings with outreach costs. Under agreements SCE is now finalizing with SoCalGas contractors, savings associated with outreach, income eligibility certification, energy education, and assessment will be realized, consistent with Report expectations. However, assessment savings will be minimal, since SCE will be required to pay contractors for additional activities associated with inspecting homes for electric appliance needs.

The Report properly recognizes that there may be drawbacks that could outweigh the cost-effectiveness that may be obtained through closer coordination. As noted above, although SCE supports closer coordination with SoCalGas on outreach, assessment and

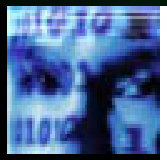
customer education, SCE disagrees with the recommendation of enrollment for all customers given the severe drawbacks such a process would have on SCE's Program.

The Report recommends that SCE and SoCalGas contractors in the combined territory enroll customers in both utilities' programs and states this level of coordination would lead to cost efficiencies due to sharing of enrollment, outreach, energy education, and assessment costs across the two utilities. As noted throughout these comments, due to the vast differences between the two programs in the number of homes receiving LIEE services and the costs associated with providing comprehensive treatment, this recommendation is not feasible.

Conclusion

SCE appreciates the opportunity to provide these comments and believes that these comments enhance the efforts already undertaken to provide a high level of service to low-income customers.

Workshop Attachment B:
PY2001 LIEE Program Evaluation Final Results Workshop Presentation

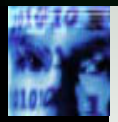





Evaluation of Low Income Energy Efficiency (LIEE) Program: PY2001 and Rapid Deployment

Clients:
SCE, SDG&E, SCG and PG&E

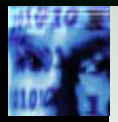
Pacific Energy Center
San Francisco, CA
March 26, 2003






Agenda

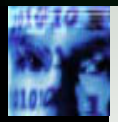
- Introductions (5 minutes)
- Overview (5 minutes)
- Volume 1: Impact Evaluation (5 minutes)
  - Comments (10 minutes)
- Volume 2: Process Evaluation (10 minutes)
  - Comments (15 minutes)
- Summary of Comments (5 minutes)
- Adjourn






Introductions

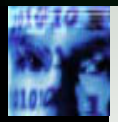
- KEMA-XENERGY
  - Kathleen Gaffney, Project Manager
  - Fred Coito, Impact Evaluation Lead
  - Tami Rasmussen, Process Evaluation Lead
- Utility Staff
- Energy Division Staff
- Others






Overview

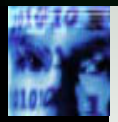
- Evaluation includes both process and impact components
- Follow-up on PY2000 evaluation
- Includes results and experiences from PY2001 and Rapid Deployment






Impact Evaluation

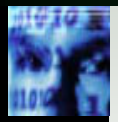
- Measures
- Evaluation Approach
- Overall Results






PY2001 Measures

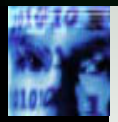
- Evaporative cooler installation (permanent or portable)
- Relamping
- Weatherization
- Energy education
- Refrigerator replacement
- Porch lamp fixture replacement
- Furnace repair and replacement






Rapid Deployment Measures

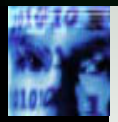
- Central and window/wall AC
- Duct sealing and repair
- Whole-house fans
- Water heaters
- Setback thermostats
- Evaporative cooler maintenance
- Measures for renters (evaporative coolers, air conditioners, water heaters, refrigerators, and hard-wired lighting fixtures)






Approach

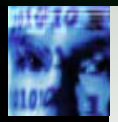
- Billing analysis of monthly household electricity and natural gas consumption, both before and after program intervention
- Engineering-based program savings variables were incorporated into the analysis for some measures






Overall Results

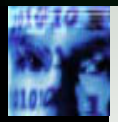
Impact Category	Utility				Total
	PG&E	SCE	SCG	SDG&E	
Non Weather Sensitive kWh Impacts	7,484,499	16,942,327		4,502,875	28,929,700
Space Heating kWh Impacts	171,099	54,807		28,855	254,761
Space Cooling kWh Impacts	1,349,205	1,889,973		59,814	3,298,992
Total kWh Impacts	**9,004,803**	**18,887,106**		**4,591,544**	**32,483,453**
Non Weather Sensitive Therm Impacts	291,836		451,009	98,739	841,585
Space Heating Therm Impacts	388,884		289,398	183,882	862,164
Total Therm Impacts	**680,720**		**740,407**	**282,621**	**1,703,749**






Process Evaluation

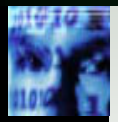
- Background / Approach
- Findings & Recommendations






Background / Approach

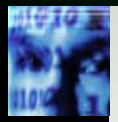
- Major evaluation activities conducted early to mid-2002
  - Staff/contractor interviews
  - Contractor “ride alongs” and site visits to training facilities
  - Program materials review
- Findings presented in August 2002 public workshop
  - Some issues were addressed in PY2002 or PY2003






Background / Approach

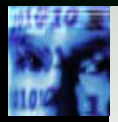
- Recent activities:
  - Participant surveys
  - Final Report






Findings & Recommendations

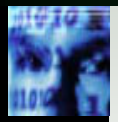
- Rapid Deployment
- Standardization
- Comprehensive & Coordinated Treatment
- Program Administration
- Outreach and Education
- Program Measures






Rapid Deployment

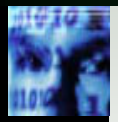
- Utilities successful in expanding efforts
- Some contractors reported problems with some measures
- Customers satisfied with new measures






Standardization

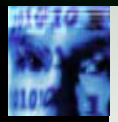
- Contractors have incorporated Statewide P&P and WIS
- Recommendations:
  - Allow some flexibility
  - Solicit contractor feedback
  - Reconsider income documentation requirement






Comprehensive & Coordinated Treatment

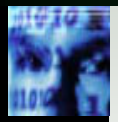
- Benefits: increased statewide consistency and efficiency
- Drawback: with fixed budgets, fewer households are treated overall
- Recommendations:
  - Assess each eligible LIEE participant for all measures offered
  - Consider adding coordinated gas/electric assessment and referral processes where IOUs overlap






Program Administration

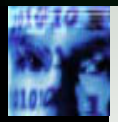
- Administrative and implementation models are well tested
- Recommendation:
  - Assess PG&E administrative performance post-transition period






Outreach and Education

- Mix of contractors, CARE enrollment, and referrals add value
- Improvements to energy education well received
- Recommendations:
  - Continue to leverage, target
  - Formalize comprehensive education
  - Ensure customer understanding






Program Measures

- CFL hours of use
- Appliance replacement eligibility
- Refrigerator grounding expense
- Cost-effectiveness of sunscreens
- Education on use of programmable thermostats