

VOLUME II

PROCESS EVALUATION OF THE 2000 STATEWIDE LOW-INCOME ENERGY EFFICIENCY (LIEE) PROGRAM

FINAL REPORT

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Prepared for

**Southern California Edison
Southern California Gas Company
San Diego Gas & Electric Company
Pacific Gas & Electric Company**

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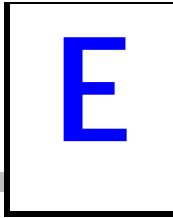
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EXECUTIVE SUMMARY

This document presents the results of XENERGY's process evaluation of the statewide Low Income Energy Efficiency (LIEE) program. Southern California Edison Company (SCE) is managing this project on behalf of all the California investor-owned utilities in accordance with the Joint Recommendation on the Program Year 2000 (PY2000) LIEE Program Shareholder Incentive Mechanism.

E.1 OBJECTIVES AND APPROACH

The evaluation was designed to include both process and impact evaluation components. The process evaluation is intended to provide feedback to each utility for making operational improvements and recommendations for achieving operational efficiencies. The impact evaluation, to be initiated in August 2001, will provide first-year load impacts attributable to the PY2000 LIEE program. The impact results will be available in early 2002.

XENERGY's approach to the process evaluation included a detailed review of program documentation and databases and a series of structured interviews with key program staff (e.g., utility staff, implementation contractors, and appropriate subcontractors). Additional feedback will be obtained through participant surveys completed as part of the impact evaluation. Results from these surveys, once finalized, will be appended to this report.

E.2 OVERVIEW OF CONCLUSIONS

This section presents a brief summary of the key similarities and differences in each utility's program design and implementation processes. In reviewing these similarities and differences, it is very important for the reader to understand the context within which each utility has designed and organized its service delivery. This will help to develop a sense of why one program might be structured differently than another and why recommendations regarding standardization may or may not be appropriate given a particular context.

For example, SCE and SCG are single-fuel utilities; therefore, their programs are primarily structured to provide LIEE program services that match the offered fuel type. PG&E and SDG&E are combination-fuel utilities and can offer a more comprehensive set of services.

In addition, PG&E's service territory is very large and diverse, addressing a broad range of customer needs and circumstances. SDG&E's service territory is the smallest and, although its customers' needs and circumstances may be similarly diverse, the volume of program activity is less compared to the other utilities.

Given these differences, efficiencies or advantages within one program model may not transfer to other programs because of the unique set of issues or characteristics facing each utility.

E.2.1 Administration and Implementation

There are two different models for LIEE program administration and implementation. While all utilities are responsible for program administration, there are differences in the manner in which utilities arrange for implementation services:

- PG&E and SDG&E use the services of a single implementation contractor (RHA), as well as a mix of private and non-profit contractors who deliver specific program services (e.g., outreach, measure installations, inspections).
- SCE and SCG use in-house staff to manage the activities of various implementation contractors. SCE uses community-based organizations (CBOs) to deliver its relamping program and a mix of private and non-profit contractors to deliver other program services (e.g., weatherization, refrigerators, evaporative coolers, inspections, etc.). SCG uses a mix of private and non-profit contractors, as well as some in-house staff (i.e., SCG gas technicians), to deliver program services.

As stated above, the organizational models for SCE and SCG are unique in that each utility provides a single fuel. The LIEE program in the overlap territory of SCG and SCE is made up of many programs or program components. The exception would be the area covered by the Inter-Utility Agreement, which has been established to coordinate the delivery of weatherization services. That is, weatherization contractors hired by SCG are permitted to install weatherization measures in homes that are heated with electricity provided by SCE. These contractors also provide outreach and energy education on behalf of both SCG and SCE.

E.2.2 Training

SCG's and PG&E's weatherization installation crews are trained at the corresponding utility's training center. Both facilities provide in-depth training, consisting of hands-on demonstrations and visual displays. SDG&E's prime contractor provides training to the installation contractors in SDG&E's program. SCE's two weatherization contractors, responsible for a very small portion of weatherization jobs performed in the state under the utility LIEE programs, do not receive hands-on training on weatherization installation standards. However, the utility does provide training on the standards themselves, including providing the contractors with a detailed manual on the standards and program policies and procedures.

The only significant difference in the content of training concerns energy education, which is discussed below as it is reflected in the different approaches each utility takes to providing energy education.

E.2.3 Bulk Purchasing

Where appropriate, the utilities are engaged in bulk purchasing for most of the applicable appliances and products installed through the LIEE program. The one exception is PG&E, which currently does not bulk purchase CFLs.

E.2.4 Customer Outreach

As described in this study, customer outreach consists of canvassing, target marketing, income verification, and CARE enrollment. All utilities rely on canvassing of low-income neighborhoods to locate eligible participants. In addition to canvassing, PG&E, SCE, and SDG&E also provide data to outreach organizations (SDG&E to RHA) to help them target low-income communities.

Currently, utilities are not required to retain copies of income documents participants use to demonstrate eligibility. Effective PY2002, utilities will be required to retain this documentation.

All utilities currently enroll LIEE participants in CARE or provide customers the opportunity to enroll by mailing back a CARE enrollment application as part of the outreach process. SCE and SCG are coordinating to streamline the process of enrolling customers in CARE when they are served by both utilities.

E.2.5 Energy Education and CFLs

PG&E, SCE, and SCG use contractors to provide energy education to income-qualified customers during the initial visit. SDG&E uses RHA to provide energy education to *all* customers who request an assessment of their home for weatherization measures, even if they are not income-qualified.

The content of energy education provided to customers differs for each utility. SDG&E and PG&E provide a more in-depth energy education package, spending time with the customer to develop an understanding of how behavior affects energy use and customizing recommendations for energy savings. Outreach workers provided a more limited amount of energy education for SCE and SCG, providing a packet of materials that includes brochures on energy reduction and other low-income assistance programs.

For the most part, LIEE program participants receive CFLs during the initial visit. This is sometimes true even in the overlap territory of SCE and SCG, where SCG weatherization contractors also provide relamping services through SCE's program. An exception might be when the same contractor is not similarly assigned by both utilities to provide both weatherization and relamping services in the same area.

E.2.6 Measure Assessment and Installation

Each utility's program involves an initial assessment of the home to determine potential eligibility for weatherization measures. There are several different models for providing this assessment, although through the standardization project, the processes of assessing measure eligibility and installing weatherization measures have been made consistent across the four utilities.

All utilities include furnace repair and replacement measures as part of the program. Refrigerators and evaporative coolers are included as measures in all of the utilities' programs except SCG. There are some differences across the utilities in terms of how eligible candidates for these measures are identified and how some customers are pre-screened to determine their interest and eligibility.

E.2.7 Quality Assurance

Utilities employ various quality assurance strategies, including inspections and monitoring of customer satisfaction. The main differences in quality assurance across the utilities are: (1) SCG is the only utility that does not perform an ongoing customer satisfaction survey, and (2) the assessment of potentially eligible weatherization measures for SCE's and SCG's LIEE programs is performed by the same entity that installs the measures, while for PG&E and SDG&E an independent entity (the utility or RHA) performs the assessment.

E.3 SUMMARY OF RECOMMENDATIONS

In summary, we find that the process by which each utility implements the LIEE program has been fairly well tested. The utilities have been operating low-income energy-efficiency programs for decades and, as such, the current program designs have benefited tremendously from this experience. Utilities have been working with many of the same outside contractors for years; they have established relationships with key players in this market; and they are aware of the capabilities and limitations of each of these organizations. The utilities are also actively working to expand efforts to leverage resources available from other low-income assistance programs. Finally, the utilities are currently participating in an intensive effort designed to standardize LIEE program processes, including weatherization installation standards.

Nevertheless, each of the utilities is constrained by various factors that affect what changes can feasibly be made or that may limit further standardization. For example, SCE and SCG are constrained in that each utility is focused on a single fuel. This is a significant factor to consider in determining the types of changes that can be made that will lead to process improvements. In general, each of the utilities is also constrained by such factors as inadequate staffing or the need to serve a large and diverse population. These factors determine how a given utility administers the LIEE program. In addition, each utility faces funding constraints that limit penetration for some of the more high-impact yet high-cost measure installations.

Recommendations for process improvements must therefore be carefully considered in light of each company's characteristics/structure and these constraints. Moreover, recommendations for best practices may be best judged appropriate on a utility-by-utility basis, given each utility's unique circumstances as opposed to developing a statewide, uniform set of best practices.

The following recommendations for best practices and process improvements have been developed in light of these differences in context, as well as the purely process-oriented similarities and differences described in detail in subsequent sections of this report.

- **Utilities should continue to develop ways to improve the effectiveness of identifying households that are income-qualified and eligible for measure installations under the current program (as well as new measures that may be added in subsequent program years).**

This would include using existing methods and databases for identifying target neighborhoods and relying on experienced contractors to canvass target neighborhoods. As new target neighborhoods are created and/or existing target neighborhoods expand, the utilities should continue to provide updated information to contractors for increasing participation in these new areas. In addition, utilities should continue to query past LIEE program databases to identify customers who may be eligible for new measures and repeat measures (i.e., CFLs, weatherization). This information should be provided to contractors on a regular basis, with updated information highlighted in some way to make it more useful. The information could be provided via written reports and/or electronic databases.

- **The requirement that contractors retain income eligibility documents should be enforced only for households receiving comprehensive treatment.**

In PY2002, the utilities will be required to copy and retain income documents used in qualifying all participating households in the LIEE program, regardless of the scope of services provided. Considering the scope of work completed in most LIEE program participants' homes, this requirement should not be unreasonable. Further, it serves as an appropriate check on contractors, ensuring that they are not enrolling customers without basis.

However, this requirement may be somewhat unreasonable given the sizeable volume and limited scope of services delivered as part of SCE's current relamping program. Yet, given that SCE and SCG have plans to coordinate activities to a greater degree in PY2002—i.e., SCG contractors are expected to provide CFLs along with weatherization services—this requirement may be less restrictive. When activities are more coordinated between the two utilities and more comprehensive service is provided to the same participant during a visit, it becomes more feasible to retain proper income documentation prior to providing treatment.

- **Continue to enroll customers in CARE as a formalized component of the LIEE program outreach process.**

Currently, all utilities enroll—or provide enrollment applications to—customers in CARE as part of the initial LIEE program outreach and education visit. In the case of SCE and SCG, the utilities are working out ways to streamline the process of enrolling customers in each CARE program, avoiding the need to fill out two forms or collect the same information twice.

- **To the extent possible, LIEE program participants should continue to be assessed for eligibility for all program measures during the first or second visit.**

In most areas, it seems reasonable to have an initial visit to qualify the household based on income criteria. In addition, this visit would involve customer outreach, in-depth energy

education, and CFL installations. A second visit could then be conducted to determine eligibility for weatherization and appliance replacement measures.

- **Information on LIEE program measure potential should be collected and stored for each participating customer.**

Currently, most utilities are identifying and tracking information on the LIEE program measure opportunities that exist in each participant's home, regardless of fuel type. SCG could improve its process for identifying and tracking information on measure potential. At least an initial screening for furnace measure potential should be formally added as part of the weatherization data collection process.

- **LIEE program measure referrals should be shared for income-qualified households residing in the overlap areas between the single-fuel utilities.**

SCE and SCG have established an Inter-Utility Agreement that allows them to coordinate the provision of both electric and gas measures in homes located within the overlap territory. It seems reasonable that this agreement could be expanded to include additional opportunities for more comprehensively treating the energy-efficiency needs of the entire dwelling and further reducing duplication of effort in terms of the customer outreach and income-qualification processes. Specifically, customers who have been income-qualified by either utility's contractors should be systematically referred to the other utility. It should be noted that the utilities are working on a database to improve the process of sharing information on participating households located in the overlap areas.

- **Energy education could be made more consistent – and potentially more effective – across the utilities.**

Currently, all utilities have a somewhat different approach to providing energy education. To improve consistency, SCE and SCG would need to enhance its efforts in this area. Outreach workers should be required/trained to spend more time with customers, helping them gain an understanding of how their behavior effects energy use and working closely with them to establish a set of attainable goals for reducing energy costs. Outreach and education workers could also spend time with customers customizing the information contained in the generic energy and other low-income program brochures to the specific circumstances of the customer.

It is difficult to judge which outreach and education methods – or parts of methods – have been most effective. A participant survey effort is currently underway that will address the energy education component of the LIEE program. The results from the survey questions will be used to make comparisons across participants to identify which methods are most effective and which are most valued by participants.

- **The opportunity for all eligible customers to participate in the refrigerator replacement component of the LIEE program should be maximized.**

Currently, most utilities are restricted by limited goals and budgets and cannot refer all potentially eligible LIEE participants into the refrigerator component of the program. Refrigerator replacement is considered a highly cost-effective measure for utilities to promote and, for low-income customers in particular, results in significant reductions in monthly energy costs. To the extent that program goals and budgets can be expanded in this area, existing opportunities to install new refrigerators in greater number of LIEE program participants' dwellings should be pursued.

- **Furnace repair/replacement measures could be more effectively integrated in SCG's LIEE program to streamline processes and maximize opportunities.**

SCG implements the furnace repair/replacement component of the LIEE program as a fairly separate activity. That is, SCG gas technicians – responding to customer requests for furnace service – identify and income-qualify customers for participation in the LIEE program. While these customers are referred to SCG's weatherization program component if appropriate, there needs to be a more formalized process for screening for furnace measures as part of SCG's weatherization program component.

- **Utilities should continue to look for opportunities to benefit from bulk purchasing arrangements for program measures.**

Currently, a number of the utilities (or their contractors) are engaged in or pursuing bulk purchasing for program measures, including CFLs and major appliances (e.g., refrigerators, room air conditioners, water heaters, portable evaporative coolers). PG&E might benefit from establishing bulk purchasing arrangements for CFLs. As new measures are identified, the utilities should investigate cost-saving opportunities from bulk purchasing. In addition, it would be very useful if utilities currently negotiating with major appliance manufacturers to bulk purchase program measures would share this information with other utilities to improve consistency and provide greater benefit to the program statewide.

- **Differences in the quality assurance policies and practices across utilities should be further assessed.**

There are differences in the way that utilities monitor the reasonableness of weatherization measures before they are actually installed (i.e., pre-inspections). We recommend that an independent assessment be conducted to determine whether or not changes to the pre-inspection/quality assurance procedures are warranted. This might involve conducting a limited number of independent assessments (10 to 15 percent) to determine whether or not contractors are installing unnecessary measures and, if warranted, making changes to the policies and practices that are consistent with the magnitude and scope of the problems identified (if any).

- **A formal, ongoing survey on customer satisfaction should be a component of each utility's quality assurance program.**

Currently, SCG is the only utility not implementing any type of ongoing formal customer satisfaction survey. Although SCG (as well as the other utilities) has implemented periodic customer surveys to evaluate customer satisfaction, these surveys do not provide the type of instant and ongoing feedback needed for quality assurance. This type of feedback is very valuable and should be consistently available to all program implementers.

This section provides the objectives and approach for carrying out this evaluation.

Section 2 provides a brief history of the Low Income Energy Efficiency (LIEE) program, along with a description of each component of the LIEE program for each utility. Section 3 presents conclusions drawn from the process evaluation and Section 4 contains recommendations for program improvements and best practices. Attachment A contains a description of each utility's LIEE program process flow, highlighting the steps in the implementation process and the roles performed by utility staff, contractors, and/or the customer. An additional process flow is provided for each utility, illustrating the steps in the LIEE participation process from the customer's perspective.

Southern California Edison Company (SCE) is managing this project on behalf of all the California investor-owned utilities in accordance with the Joint Recommendation on the Program Year 2000 (PY2000) LIEE Program Shareholder Incentive Mechanism. The evaluation includes both process and impact evaluation components. The impact evaluation, to be initiated in August 2001, will provide first-year load impacts attributable to the PY2000 LIEE program. The impact results will be available in early 2002.

1.1 OBJECTIVES

As stated above, this project entails a comprehensive evaluation of the statewide LIEE program, including both process and impact evaluation components. The objectives of the process evaluation are to evaluate the internal processes of each utility's LIEE program to make mid-year 2001 program improvements where feasible and to develop program plans for PY2002.

The process evaluation is intended to provide feedback to each utility for making operational improvements and offer recommendations for achieving operational efficiencies. Specifically, the process evaluation provides insight to help program managers improve program quality, cost efficiency, and customer satisfaction and to achieve a greater degree of standardization in the delivery of LIEE programs. Areas of best practice are identified by program element and may be used by the utilities as benchmarks for future efforts.

1.2 APPROACH

XENERGY's approach to the process evaluation included a detailed review of program documentation and databases and a series of structured interviews with key program staff (e.g., utility staff, implementation contractors, and appropriate subcontractors). Additional feedback will be obtained through participant surveys completed as part of the impact evaluation. Results from these surveys, once finalized, will be appended to this report.

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 presented an opportunity to review and revise the evaluation schedule and to establish the project management and reporting protocols.
- **Data Request** – 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, marketing plans and promotional materials, participation statistics, low-income demographic information, and relevant reports such as the Bill Savings Report and the reports associated with the LIEE Standardization Project.
- **Program Materials Review** – 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
 - Data processing and record retention.

The information gathered through this review was used to map each utility's program processes and identify areas where utility operations are the same or different. These processes 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** – XENERGY staff conducted in-person interviews with the appropriate players at each of the utilities, including vendor contacts as appropriate. These interviews were designed to learn more about how each utility administers its LIEE program and to clarify issues brought up during review of the materials provided by the utilities. Issues explored in the interviews centered on the following areas:
 - Main program similarities and differences (along with the rationale for differences)¹
 - Program targeting and market size
 - Program marketing and promotional activities
 - Program administration and management
 - Internal and external program coordination
 - Program design elements (i.e., education, audit, installation, QC/inspection, etc.)
 - Program tracking and monitoring
 - Areas of satisfaction and suggestions for improvement.

These interviews provided valuable information for developing the utility-specific process memorandums, creating process “maps,” and identifying areas of benchmarks for the utilities to track future efforts.

- **Deliverables** – The process evaluation has two main deliverables: Utility-specific Process Memorandums and a Process Evaluation Report.
 - The utility-specific Process Memorandums, presented “maps” of each utility’s program processes using the results of the program material review and the staff interviews. The similarities and differences between utility programs were assessed to identify areas where standardization has been accomplished and where further efforts can be made.
 - These Process Memorandums were prepared separately for each utility and were submitted in draft form for review and comment by the individual utilities. Comments received by the utilities in response to the utility memorandums have been incorporated into this process evaluation report. Final utility-specific memorandums were provided to the individual utilities under separate cover.
 - The second deliverable, the Process Evaluation Report, provides recommendations for improving the program’s quality, cost-efficiency, and

¹ From our preliminary review of the Standardization Project results, we were already familiar with the main program similarities and differences. We used the interviews to confirm what we learned from reviewing the Standardization Project efforts and to explore any additional areas not addressed through this project.

customer satisfaction. Recommendations regarding a greater degree of standardization in the delivery of the LIEE program have also been provided. Areas of best practice are identified by program element for the utilities to use as appropriate as benchmarks for future efforts. The evaluation recommendations have been formulated based on the synthesis and analysis of information collected from program materials, tracking databases, and interviews with program staff and vendors.

- **Participant Survey** – A participant survey will be administered as part of the impact evaluation of the LIEE program. This survey will include questions regarding overall satisfaction with the program, satisfaction with various program elements, and suggestions for program improvement. A total of 1,000 participants will be interviewed, or 250 per utility. The participant survey will be administered in late fall and the process-related questions will be analyzed and reported in an attachment to the Process Evaluation Report.

This section presents an overview of the LIEE program history, as well as a summary of PY2000 goals and accomplishments and plans for PY2001. The remaining sections describe each utility's LIEE program as it was designed going into PY2001.¹ The reader is also referred to Attachment A, which contains process flow diagrams for each utility.

2.1 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 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.² 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 LIEE program include:

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

¹ This evaluation was initiated in early April 2001 and, accordingly, did not address issues related to Rapid Deployment in PY2001.

² Low-Income Weatherization Income Limits established by the California Public Utilities Commission, Decision 01-06-010, dated June 7, 2001.

- Porch lamp fixture replacement
- Furnace repair and replacement.

2.2 PROGRAM GOALS AND ACHIEVEMENTS

Well over 100,000 low-income homes in California received services through the LIEE program in PY2000. As shown in Table 2-1:

- Over 65,000 homes received weatherization
- Over 4,000 received gas furnace repair or replacement
- Over 7,500 received a new energy-efficient refrigerator
- Over 3,500 received an evaporative cooler to help offset central air conditioning use
- Just under 350,000 CFLs were distributed to homes in 2000.

Table 2-1 also shows goals for PY2001. As shown, goals for major program components are similar to PY2000³.

**Table 2-1
PY2000 Actual Units and PY2001 Unit Goals**

	Units	Measure	PG&E	SDG&E	SCE	SCG	Total
2000 Actual Units	# of HH	In-Home Energy Education	42,038	13,896	46,032	22,617	¹ <101,966
		Energy Education Workshops	n/a	26,575	n/a	11,621	38,196
		Weatherization	32,730	9,893	1,347	22,617	66,587
	# of units	Gas Furnace	494	7,893 ²	-	2,996	11,383
		Refrigerator	4,317	714	2,613	-	7,644
		Evap Cooler	1,623	21	2,083	-	3,727
		CFLs	141,774	27,413	200,341	-	369,528
2001 Unit Goals	# of HH	In-Home Energy Education	50,000	12,500	46,200	22,500	¹ <108,700
		Energy Education Workshops	n/a	30,000	n/a	11,250	41,250
		Weatherization	50,000	9,500	1,600	22,500	83,600
	# of units	Gas Furnace	732	8,680 ²	-	3,000	12,412
		Refrigerator	6,750	2,682	2,400	-	11,832
		Evap Cooler	2,528	20	2,100	-	4,648
		CFLs	210,975	36,000	120,000	-	366,975

Notes:

¹ The total households that received energy education in PY2000 and are budgeted to receive energy education in PY2001 do not include SCG energy education because there may be overlap between homes in SCG/SCE overlap territory that received energy education from both utilities. The extent of the overlap was not examined as part of this effort.

² SDG&E performs furnace services on all gas furnaces assessed; both minor repairs and major repairs are provided.

³ As a result of Rapid Deployment in PY2001, actual year-end goals for the utilities' LIEE programs will be significantly increased. These goals have not been included in these tables since this evaluation focused on the LIEE programs as they were designed coming into PY2001.

Table 2-2 presents PY2000 program expenditures and PY2001 budgets by utility. As shown, approximately \$55 million was spent in PY2000 implementing the LIEE program in California. Over half of that was spent on installing weatherization measures in homes. Over \$5 million was spent on CFLs. Also shown in Table 2-2, the PY2001 LIEE program budget is \$57.5 million, which is slightly more than the budget for PY2000.

**Table 2-2
PY2000 Actual Unit Expenditures and PY2001 Unit Goals Budget**

			PG&E	SDG&E	SCE	SCG	Total	
	Units	Measure	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
2000 Actual Unit Expend- itures	# of HH	In-Home Energy Education	1,907	685	609	652	3,853	
		Energy Education Workshops	n/a	204	n/a	n/a	204	
		Weatherization	18,010	3,290	813	10,700	32,813	
	# of units	Gas Furnace	172	578	-	3,437	4,187	
		Refrigerator	4,010	358	1,851	-	6,219	
		Evap Cooler	703	18	1,319	-	2,040	
		CFLs	1,969	458	2,977	-	5,404	
			Total	26,771	5,591	7,569	14,789	54,720
	2001 Unit Goals Budget	# of HH	In-Home Energy Education	3,000	581	710	699	4,990
			Energy Education Workshops	n/a	268	n/a	n/a	268
Weatherization			13,542	2,850	1,011	¹ 13,268	30,671	
# of units		Gas Furnace	329	1,022	-	4,388	5,739	
		Refrigerator	4,557	1,663	1,733	-	7,953	
		Evap Cooler	290	15	1,338	-	1,643	
		CFLs	3,949	602	1,726	-	6,277	
		Total	25,667	7,001	6,518	18,355	57,541	

Notes:

¹SCG: For PY2001, outreach and assessment were broken out from weatherization. (In PY2000 it was included in the weatherization budget.) So that PY2000 and PY2001 budgets can be compared in this table, the outreach and assessment budget was included in weatherization for both program years.

The remainder of this section provides a description of each utility's LIEE program. Attachment A contains a description of each utility's LIEE program process flow, highlighting the steps in the implementation process and the roles performed by utility staff, contractors, and/or the customer. An additional process flow is provided for each utility, illustrating the steps in the LIEE program participation process from the customer's perspective.

In providing these program descriptions, it is very important to understand the context within which each utility has designed and organized its service delivery. This will help to develop a

sense of why one program might be structured differently than another and why recommendations regarding standardization may or may not be appropriate given a particular context.

For example, SCE and SCG are single-fuel utilities; therefore, their programs are primarily structured to provide LIEE program services that match the offered fuel type. PG&E and SDG&E are combination-fuel utilities and can offer a more comprehensive set of services.

In addition, PG&E's service territory is very large and diverse, addressing a broad range of customer needs and circumstances. SDG&E's service territory is the smallest and, although its customers' needs and circumstances may be similarly diverse, the volume of program activity is reduced in comparison to the other utilities.

Given these differences, efficiencies or advantages within one program model may not transfer to other programs because of the unique set of issues or characteristics facing each utility.

2.3 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 program staff administers the LIEE program.
Implementation	PG&E retains the services of a contractor to provide implementation support. RHA, the current implementation contractor, hires and manages contractors, ⁴ 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.
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. PG&E provides training to outreach workers (known as energy specialists)

⁴ Due to a change in implementation contractor, in PY2001 PG&E hired installation contractors and community-based organizations. These contracts were then assigned to RHA.

⁵ PG&E changed its policy in July of PY2001 so that the outreach worker does not perform an assessment of the home during the initial visit. Prior to this policy change, the outreach worker performed the initial assessment and PG&E inspection staff verified the specification of measures during the pre-inspection.

and weatherization contractors through its Stockton Training Center. Energy specialists receive ten days of training, covering energy education, customer contact, home assessment,⁵ 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, 10 CBOs and 4 for-profit weatherization contractors are employed by PG&E, with about 43 percent of participants being served by the 10 CBOs. RHA manages the CBOs and contractors.

**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 disaggregation of the customer's bill. The energy specialist collects information about the home and PG&E later mails the customer a report. 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 the home is

assessed for eligibility and feasibility of weatherization measures.⁶ PG&E inspection staff then informs the CBO or contractor who initially visited the home of what measures to install, 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, PG&E can provide such services 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 inspections. 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. PG&E recently implemented a telephone customer satisfaction survey; in the past they relied upon a mail survey, which only achieved a 7-percent response rate. The phone survey yields a 75-percent response rate, also allowing for easy customization of data collection (i.e., what questions are asked).

⁶ PG&E changed its policy in July of PY2001 so that the outreach worker does not perform an assessment of the home during the initial visit. Prior to this policy change, the outreach worker performed the initial assessment and PG&E inspection staff verified the specification of measures during the pre-inspection.

2.4 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.
Administration	SDG&E program staff administers the LIEE program.
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. SDG&E provides RHA with target market data, supplementing RHA's own database of past participants.
Training	<p>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.</p> <p>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.</p> <p>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.</p>
Bulk Purchasing	In SDG&E's territory, RHA is a Maytag-licensed distributor of appliances, allowing discount prices on refrigerators and evaporative coolers. RHA purchases CFLs in bulk each month and warehouses them off site. RHA is developing a relationship with efficient air conditioner manufacturers and hopes to be able to set up a similar arrangement as that for appliances.

Customer Outreach	<p>Customer outreach consists of canvassing neighborhoods for potential income-eligible participants and assessing income eligibility of interested individuals.</p> <p>In SDG&E's territory, RHA-employed energy specialists perform outreach and income-eligibility assessment.</p>
Energy Education	<p>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.</p> <p>SDG&E also offers energy education seminars to its low-income residents. Over 25,000 low-income residents participate per year.</p>
CFL Installation	<p>In the SDG&E territory, CFLs are distributed to all homes assessed.</p>
Weatherization	<p>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.</p>
Furnace Repair/ Replacement	<p>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.</p>

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. If the resident owns the refrigerator and it is 10 years old or older, 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. An inspection by SDG&E following installation is optional.
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.

2.5 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: CBOs provide services under SCE's relamping program, and a mix of CBOs and

private contractors provide services under SCE's weatherization, refrigerator, and evaporative cooler programs.

SCE provides outreach workers with target market data.

Training	<p>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.</p> <p>SCE staff trains its contractors on outreach and program implementation details. Usually this training is provided at the beginning of each program year.⁷</p>
Bulk Purchasing	<p>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.</p>
Customer Outreach	<p>Customer outreach consists of canvassing neighborhoods for potentially 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. 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 non-profit weatherization contractors to provide outreach.</p>
Energy Education	<p>SCE's income-eligible customers receive 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.</p>
CFL Installation	<p>In SCE's territory, only income-eligible customers receive CFLs. Relamping CBOs provide the bulbs during the initial visit.</p>
Weatherization	<p>SCE does provide a limited quantity of electrically heated homes with weatherization. These homes are not served by SCG. Weatherization</p>

⁷ Weatherization contractors installing measures for SCE customers under the Inter-Utility Agreement are trained at the SCG Training Center.

contractors locate customers in these areas not served by SCG 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 (PACE) inspects every home receiving weatherization under the program. SCE also reviews PACE inspection results.

Furnace Repair/Replacement Electric furnace repair and replacement is offered through SCE's program. However, to date, no household meeting the cost-effectiveness test 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 owning 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 identifies interested customers to their refrigerator contractor, ARCA. ARCA then pre-inspects each site to verify that the customer is eligible and, if so, ARCA installs the new refrigerator and recycles the existing unit. SCE's inspection contractor (PACE) randomly inspects (up to 15 percent) homes receiving a refrigerator under the LIEE program. SCE inspects PACE's inspection results.

Evaporative Cooler Replacement SCE customers learn about the evaporative cooler component of SCE's LIEE 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 (PACE) 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-inspection.

2.6 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.
Implementation	SCG implements 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.
Training	<p>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.</p> <p>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.</p>
Bulk Purchasing	SCG does not bulk purchase appliances or CFLs for the LIEE program since these are not included in its program. ⁸
Customer Outreach	A mix of private contractors and CBOs perform outreach and income-eligibility assessments for weatherization in the SCG territory.
Energy Education	Income-eligible customers in SCG territory receive a packet of energy education materials. Outreach workers for CBOs and private weatherization contractors explain the contents of the packet, which includes information on

⁸ In preparing for Rapid Deployment, SCG has purchased water heaters in bulk and is in the process of distributing them to their water heater replacement contractors.

SCG and community programs assisting low-income residents, energy conservation tips, and SCE programs and electricity safety. Currently, LIEE participants are mailed an application for enrollment in the CARE program.

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. The furnace technician verifies income eligibility and determines the specifications for repair or replacement for income-eligible customers. An HVAC contractor is provided with the specifications of the work required. After the repair work or new furnace installation, SCG inspection staff inspects the site.
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.

This section presents conclusions drawn about the similarities and differences in implementation of the LIEE program across the four utilities. This section is organized by program area or activity, including:

- Administration and Implementation
- Training
- Bulk purchasing
- Customer outreach
 - Canvassing
 - Target marketing
- Income eligibility and verification
- CARE enrollment
- Energy education and CFLs
- Weatherization
- Furnace repair and replacement
- Refrigerator replacement
- Evaporative cooler installation
- Quality assurance.

A table in each section compares each utility with regard to each of these program areas or activities.

As stated in Section 2, in reading these conclusions it is very important to understand the context within which each utility has designed and organized its service delivery. This context provides a rationale for differing program structures and explains why recommendations regarding standardization may or may not be appropriate. Given these differences, efficiencies or advantages within one program model may not transfer to other programs because of the unique set of issues or characteristics facing each utility program.

3.1 ADMINISTRATION AND IMPLEMENTATION

There are two different models for LIEE program administration and implementation. While all utilities are responsible for program administration, there are differences in the manner in which utilities arrange for implementation services.

PG&E and SDG&E use the services of a single implementation contractor (RHA). PG&E also uses a mix of private and nonprofit contractors who deliver installation services and outreach services. SDG&E uses a mix of private and non-profit contractors to perform installation work.

SCE and SCG use in-house staff to manage the activities of various implementation contractors. SCE uses CBOs to deliver its relamping program, and a mix of private and non-profit contractors to deliver other program services (e.g., weatherization, refrigerators, evaporative coolers, inspections, etc.). SCG uses a mix of private and nonprofit contractors, as well as some in-house staff (i.e., SCG gas technicians), to deliver program services.

Table 3-1 compares organization models across utilities, noting which entity is responsible for a given task (i.e., utility staff, RHA, other outside contractor).

Table 3-1
Program Administration and Implementation

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Program Administration	X			X			X		X	
Program Implementation										
Hire contractors		X			X		X		X	
Responsible for meeting program goals		X			X		X		X	
Monitor contractors for quality assurance		X			X		X		X	
Assess measure/program eligibility	X				X			X		X
Install program measures			X		X	X		X		X

In SDG&E's territory, the implementation contractor (RHA) performs customer outreach and limited installation/repair services.¹ The RHA staff has a long history of implementing SDG&E's program and has developed a working knowledge of its low-income communities and organizations that serve them. After an RHA energy specialist has determined a customer is income qualified, the energy specialist conducts an assessment of the home to determine what measures are feasible. Based on measures to be installed, RHA assigns the work to be performed, other than refrigerator and other appliance installations, to weatherization and/or furnace contractors. Through RHA's centralized control, customers receive all measures for which they are eligible under the program.

PG&E's organizational model is somewhat different than SDG&E's in that private contractors and a network of community-based organizations (CBOs) perform customer outreach. However,

¹ RHA warehouses, delivers, and installs refrigerators; recycles old refrigerators; installs evaporative coolers; and provides minor adjustments to furnaces.

PG&E's Central Inspection staff performs a pre-inspection for every income-eligible home,² and assesses measure eligibility. Thus, the centralized role of determining measure eligibility under the program is performed by the utility, not the implementation contractor. Due to the size and diversity of PG&E's territory, the utility relies on private contractors and CBOs to canvass neighborhoods and locate low-income residents.

SCE staff manages the services of several outside contractors to deliver the LIEE program. Through the relamping program, CBOs are used to identify income-eligible households, provide outreach and energy education and install CFLs. Private contractors are used to identify electrically heated, income-eligible households for participation in the weatherization program component. These weatherization contractors also provide outreach and energy education and also install CFLs. SCE uses the services of ARCA to install refrigerators and HVAC contractors to install evaporative coolers.

In SCG's service territory, a mix of private and nonprofit contractors provides outreach, energy education, and weatherization services. SCG's in-house gas service technicians identify eligible customers for the furnace repair and replacement program component, with HVAC contractors performing the installation of feasible furnace measures.

The organizational models for SCE and SCG are unique in that each utility provides a single fuel. The LIEE program in the overlap territory of SCG and SCE is made up of many programs or program components. The exception would be the area covered by the Inter-Utility Agreement, which has been established to coordinate the delivery of weatherization services. That is, weatherization contractors hired by SCG are permitted to install weatherization measures in homes that are heated with electricity provided by SCE. These contractors also provide outreach and energy education on behalf of both SCG and SCE.

3.2 TRAINING

Training is fairly standardized across the state. Outreach workers are trained on the details of the program, special considerations of the low-income community, and determining income eligibility. Outreach workers canvassing for weatherization jobs are also trained on assessing the home for potentially eligible measures.³ Weatherization installation crews are trained on installation standards, which are being standardized across the state as a result of the efforts of the LIEE Standardization Project.

² Before a recent program change, contractors/CBOs assessed income-eligible homes during the initial visit. PG&E then performed a pre-inspection (coupled with a CAS test for the approximately 91 percent of homes with combustible appliances) to confirm eligible measures.

³ PG&E changed its policy in July of PY2001 so that the outreach worker does not perform an assessment of the home during the initial visit. Prior to this policy change, the outreach worker performed the initial assessment and PG&E inspection staff verified the specification of measures during the pre-inspection.

SCG's and PG&E's weatherization installation crews are trained at the corresponding utility's training center. Both facilities provide in-depth training, consisting of hands-on demonstrations and visual displays. SDG&E's prime contractor provides training to the installation contractors in SDG&E's program. SCE's two weatherization contractors, who are responsible for weatherizing electrically heated homes with SCE's territory, do not receive training on weatherization installation standards at the SCG training center. Instead, SCE provides training on the standards, including providing the contractors with a detailed manual on the standards and program policies and procedures. Further, SCE maintains that these crews have a great deal of experience in the field and do not require additional special training offered at the training center.

The Stockton and SCG Training Centers provide outreach worker training for crews canvassing for SCG's and PG&E's programs. RHA trains outreach workers canvassing for SDG&E's LIEE program, and SCE provides in-house training for its relamping CBOs and other installation contractors. Table 3-2 presents training models across the utilities by the entity responsible for each task.

**Table 3-2
Training**

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Responsibility:										
Training										
Outreach	X				X		X		X	
Weatherization installation standards	X				X		X		X	

The only significant difference in the content of training concerns energy education. RHA energy specialist training includes in-depth coverage of energy education. Likewise, because PG&E's outreach workers need to fill out a bill disaggregation survey and craft recommendations on site, they are provided with in-depth energy education training.

Energy education offered through SCE's program is different in that the majority of outreach is performed by relamping CBOs. Customers receive lamps and an energy education packet, which the outreach worker explains. CBOs are trained by SCE's program staff on the contents of the packet and are instructed to go through the individual brochures with the customers. The main focus of the visit, however, is enrolling the customer in CARE and providing them with CFLs.

Energy education offered through SCG's program is similar to that offered by SCE's relamping CBOs. Outreach workers employed by SCG's weatherization contractors provide an energy education packet, and discuss its contents with the customer. The SCG Training Center provides limited energy education training, which mainly consists of ensuring that outreach workers understand the contents of the packet and are able to explain each brochure to the customer. Often, the outreach worker spends more time on assessing the home and explaining program

details to the customer; therefore, the training center focuses much of the training on these topics.

3.3 BULK PURCHASING

Table 3-3 summarizes bulk purchasing by the responsible party within each utility. SCG does not bulk purchase appliances or CFLs since these measures are not part of its program. Bulk discounted prices are obtained by the other utilities for appliances and, in most cases, CFLs. PG&E is the exception for CFLs. Instead of bulk purchasing CFLs and distributing them to contractors and CBOs, PG&E's contractors and CBOs bid the price per CFL into their contract.

**Table 3-3
Bulk Purchasing**

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Bulk purchasing										
CFLs					X		X			
Appliances			X		X		X		X	

3.4 CUSTOMER OUTREACH

Table 3-4 summarizes customer outreach responsibilities by utility, including locating customers (neighborhood canvassing), target marketing, income-eligibility assessment, and CARE enrollment.

3.4.1 Canvassing

All utilities rely on canvassing of low-income neighborhoods to locate eligible participants. PG&E and SCG rely on a mix of private weatherization contractors and CBOs, while SCE relies on CBOs who are responsible for the relamping program. In SDG&E's territory, RHA's energy specialists perform outreach to locate low-income customers.

3.4.2 Target Marketing

In addition to canvassing, PG&E, SCE, and SDG&E also provide data to outreach organizations (SDG&E to RHA) to help them target low-income communities.

PG&E has a well-developed system for providing targeting information to contractors on a regular basis via its electronic contractor database. PG&E provides contractors with customer-level data, including CARE subscription and past LIEE participation, through its contractor database. (In addition to providing information on target/past participants, PG&E's database allows the utility and its contractors to enter information on current participants as work is completed, minimizing the flow of paper and speeding up the approval process significantly.)

**Table 3-4
Customer Outreach**

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Customer Outreach										
Canvassing of neighborhoods			X		X			X		X
Target Marketing	X			X	X		X			
Income eligibility assessment			X		X			X		X
CARE Enrollment			X		X			X		X

SDG&E shares a database with RHA that contains information on current and prior participants. In addition, SDG&E provides RHA with demographic and billing information at the aggregate level and also provides CARE enrollment data to help RHA identify low-income neighborhoods.

SCE provides leads to its relamping contractors in the form of participant lists from prior-year programs, and the utility will provide its contractors with CARE participant lists if requested.⁴ In addition, SCE uses targeted mailings to generate interest in specific program components (e.g., weatherization, evaporative coolers).

SCG relies on two mechanisms for generating leads: weatherization contractor canvassing and furnace inspection referrals. SCG has not provided contractors with any target market data or CARE participation data in the past, but contractors have been able to meet goals without such data. SCG has queried their furnace repair/replacement database to help identify potentially eligible water heater replacement customers and provided those customer leads to contractors participating in this program element.

3.4.3 Income Eligibility and Verification

All utilities currently have outreach workers visually examine a customer's income documents to determine eligibility. With the exception of SDG&E, the utilities do not provide services for income-ineligible residents. SDG&E does provide CFLs and basic energy education to customers who have requested a home assessment but are not income-eligible as a means of thanking the customer for participating in the assessment.

⁴ Per Decision 99-07-002, dated July 6, 2000, Ordering Paragraph 4, utilities are to provide contractors with CARE participant lists, on an as-requested basis and only if contractors provide some form of marketing plan outlining how they intend to use the lists. To date, SCE has received only a few requests for CARE lists from its contractors and SCG has received none.

In a new Commission ruling,⁵ effective in PY2002, the utilities are directed to have all LIEE program contractors retain income-eligibility documentation. This implies that outreach workers must photocopy and retain copies of eligible customers' income documentation. According to some participating CBOs, some eligible customers, particularly the elderly, are very hesitant to allow someone to photocopy sensitive documents, and they may refuse to participate. However, the new requirement may help to ensure that outreach workers are not qualifying customers with no basis.

3.4.4 CARE Enrollment

All utilities enroll LIEE participants in CARE or, in the case of SCG, provide customers with the opportunity to enroll by mailing back a CARE enrollment application.⁶ SCE has included a space on its CARE enrollment application for the customer's SCG account number so that the customer can be enrolled in both programs via one application form.

SCE and SCG are coordinating in other ways to streamline the process of enrolling customers in CARE if they are served by both utilities. For example, SCG regularly provides SCE with lists of customers it has enrolled in CARE and SCE matches these customers and enrolls them in its own CARE program. In addition, SCE sends SCG lists of customers it has enrolled in CARE. SCG is working on a way to match these customers to enroll them in its own CARE program.

3.5 ENERGY EDUCATION AND CFLS

Contractors are used by PG&E, SCE and SCG to provide energy education to income-qualified customers during the initial visit. SDG&E utilizes RHA to provide both energy education (and CFLs) to all customers who request an assessment of their home for weatherization measures, even if they are not income-qualified.

Energy education is also provided by PG&E, SDG&E and SCG via workshops,⁷ in which customers receive more in-depth training. A separate component from the weatherization and appliance installation program elements, these workshops include a variety of interactive discussions regarding energy conservation, energy-reducing actions (with customers' pledges to conserve), and information about other programs that are available such as CARE and LIHEAP.

For the most part, LIEE program participants receive CFLs during the initial visit. This is sometimes true even in the overlap territory of SCE and SCG, where SCG weatherization contractors also provide relamping services through SCE's program. An exception might be when the same contractor is not similarly assigned by both utilities to provide both weatherization and relamping services in the same area.

⁵ Decision 01-03-028, March 15, 2001.

⁶ This process will change upon the completion of SCG program database upgrade. At that point, qualified LIEE participants will be automatically enrolled in CARE.

⁷ Although SCE does not offer energy education workshops, electric measures are addressed through SCG workshops.

Activities and responsibilities associated with energy education and CFLs are summarized in Table 3-5.

Table 3-5
Energy Education and CFLs

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Energy Education			X		X			X		X
CFL Installation			X		X			X		

The content of energy education provided to customers differs across each utility. PG&E customers are administered a bill disaggregation survey, whereby an energy specialist takes an inventory of their home and energy-using behaviors. At the end of the survey, the energy specialist provides the customer with customized recommendations for reducing their energy usage. The customer later receives a bill disaggregation report in the mail. Customers are also informed about other low-income programs offered by other agencies and the state and federal governments. Customers are also provided with a package of energy education materials, including brochures on low-income programs and energy conservation. Because PG&E no longer requires the energy specialist to assess the customer's home for measure eligibility, the specialist is now able to spend more time discussing energy usage and answering the customer's questions about their bill, their energy usage, and details about the program.

RHA energy specialists in SDG&E territory provide customers with an in-depth discussion of their energy usage and their behavior, a detailed discussion of their bill, followed by a goal-setting session for energy-reducing actions the customer pledges to take. Much of the in-depth energy education discussion occurs during the initial visit when the home is qualified and the home is assessed for measures. Customers are also provided with information on other low-income programs and with a packet of materials including energy conservation tips, electricity and gas safety information, and fact sheets on various energy end uses.

Outreach and energy education in SCE's service territory is provided primarily by CBOs (due to the volume of activity) through its relamping program; however, all SCE contractors provide these services. Outreach workers provide a packet of materials that includes brochures on energy reduction, plus brochures on many other low-income programs. Customers are also informed about the other measures available through the LIEE program and are given phone numbers to call if they are interested in receiving further measures under the program. SCE also refers customers to other programs based on the initial survey/assessment.

Outreach in SCG's territory consists of weatherization contractors and CBOs canvassing neighborhoods. Outreach workers provide a limited amount of energy education, providing a packet of materials and an explanation of its contents, which includes a home energy guide, Edison brochures on its programs and electricity safety, information on SCG's programs, and

energy conservation tips. During the walk-through assessment of the home, customers are able to ask questions about the program and about their energy usage.

3.6 WEATHERIZATION

Each utility's program involves an initial assessment of the home to determine potential eligibility for weatherization measures. There are several different models for providing this assessment:

- **SCG** – The outreach worker assesses the potential for weatherization and provides the assessment to the contractor, the contractor confirms that weatherization services have not been previously provided, and the contractor performs the work.
- **SCE** – Contractors assess the potential for weatherization in the case of electrically heated homes. Approved measures are then installed in participants' homes. In the overlap territory, SCG weatherization contractors provide these services through the Inter-Utility Agreement. In other areas, SCE uses two private weatherization contractors to deliver these services.
- **SDG&E** – The implementation contractor, RHA, assesses the potential for weatherization and forwards eligible customer information to the installation contractor.
- **PG&E** – PG&E uses its own staff to conduct this assessment during the pre-inspection, along with the CAS test, which is provided to all homes with combustible appliances—approximately 91 percent of homes. The results of the CAS test will determine whether a customer is eligible for infiltration measures.

Through the standardization project, weatherization measure eligibility, feasibility and installation standards have been made consistent across the four utilities.

Table 3-6 summarizes each weatherization task by responsible entity for each of the utilities.

3.7 FURNACE REPAIR AND REPLACEMENT

All utilities include furnace repair and replacement measures as part of the LIEE program. There are differences in the way in which each utility implements this program element.

For SCE, electric furnace measures are included in the program design, although no cost-effective opportunities have been identified to-date.

In PG&E's service territory, all income-qualified customers receive a pre-inspection. Homes with combustion appliances (approximately 91 percent) receive a CAS test. If the furnace fails the test and the customer owns their home, the customer is qualified to receive either a new furnace or repair services through the program.

**Table 3-6
Weatherization**

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Weatherization										
Initial assessment of home	X				X			X		X
Eligibility (have been served before?)	X				X		X		X	X
Verification of measures to install:										
measure eligibility	X				X			X		X
measure feasibility	X					X		X		X
Installation of weatherization measures			X			X		X		X
Inspection	X			X			X	X		X

In SDG&E’s territory, all income-qualified customers receive a furnace inspection from RHA, who can also complete minor furnace repairs. If the furnace needs to be replaced and is in an owner-occupied home, SDG&E will verify that the work needs to be completed, and RHA will refer the furnace work to an HVAC contractor.

SCG’s program is unique in that customers who are potentially eligible must call the utility and express interest in the program to receive service. The main reason for this extra step is that funding has been limited for the furnace program, so SCG has not been able to provide furnace service proactively to every eligible customer identified through the provision of weatherization services by the LIEE program. (SCG provides weatherization to over 20,000 homes, but is able to service less than 3,000 furnaces per year.)

Table 3-7 displays each task under furnace repair/replacement by the responsible entity for each of the utilities.

3.8 REFRIGERATOR REPLACEMENT

The process for identifying eligible candidates to receive refrigerators through the LIEE program is similar across PG&E, SDG&E and SCE.⁸ Income-qualified customers are screened for

⁸ Refrigerators are provided to SCG customers whose electric service is provided by SCE through SCE’s program.

**Table 3-7
Furnace Repair and Replacement**

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Furnace repair/replacement										
Initial determination that work may be warranted	X				X				X	
Verification of work to be performed	X			X	X				X	
Furnace repair/replacement work performed			X			X				X
Inspection	X				X				X	

eligibility during the initial visit by RHA (SDG&E) and SCE's relamping contractors, and during the pre-inspection conducted by PG&E.

The process for determining which pre-screened customers are provided with refrigerators differs across the three utilities. For PG&E and SDG&E, eligible customers are provided with a new unit, and their old unit is recycled. In SCE's service territory, all potentially eligible customers are mailed a postcard to further screen for this measure. Customers who return the mailer (and pass the screening criteria) are provided with new refrigerators, and their old units are recycled. This screening step serves a distinctive purpose for SCE – it allows the most interested customers to receive the measure because restrictive unit goals do not allow for the provision of appliances for every eligible home that has been income-qualified by a relamping CBO.

Table 3-8 summarizes the various tasks associated with refrigerator replacement.

**Table 3-8
Refrigerator Replacement**

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Refrigerator replacement										
Collection of customer data to determine potential eligibility (i.e., age and ownership)			X		X			X		
Verification of eligibility/ specification of new refrigerator	X				X			X		
Delivery/installation of new refrigerator			X		X			X		
Recycling of old refrigerator			X		X			X		
Inspection	X			X			X	X		

3.9 EVAPORATIVE COOLER INSTALLATION

Evaporative coolers are provided to customers through the LIEE program to help offset high air conditioning costs. Customers who live in hot, dry climates are most suited to use an evaporative cooler during hot summer days.

Table 3-9 presents the tasks associated with evaporative cooler installation.

**Table 3-9
Evaporative Cooler Installation**

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Evaporative Cooler Replacement										
Collection of customer data to determine potential eligibility (i.e., climate zone, customer interest)			X		X		X	X		
Verification of eligibility/specification of unit	X				X			X		
Delivery/installation of unit			X			X		X		
Inspection	X			X				X		

SDG&E's climate is such that only a limited number of evaporative coolers are provided to its customers through the LIEE program. For the small number of eligible customers, units are provided in a similar fashion as refrigerators. RHA program staff assesses eligibility based on customer data collected by the energy specialist after the customer has been income-qualified. A licensed HVAC staff member of RHA installs the units.

Customers residing in PG&E or SCE territory⁹ are more likely to be eligible for an evaporative cooler due to the hot, dry climate of inland California. The process and type of unit provided differs between the two service areas. Income-qualified PG&E customers identified by PG&E outreach weatherization contractors are assessed for measure eligibility during the pre-inspection, and homes that are qualified are provided with a portable evaporative cooler from an HVAC contractor on a subsequent visit.

Outreach in SCE's territory is performed by relamping contractors who, on the first visit, assess potential measure eligibility and record the information to be later entered into SCE's program database. All potentially eligible customers are mailed a postcard informing them of the details of the program. Customers who return the mailer are then contacted by SCE's HVAC contractors, who provide permanent evaporative coolers. In addition, some customers learn of the program through word of mouth and are referred to SCE's toll-free number to determine if

⁹ SCE provides evaporative coolers to SCG customers whose electric service is provided by SCE.

they are eligible. As stated above, given budget constraints, these screening steps serve a distinctive purpose for SCE by allocating the limited number of units to the most interested eligible customers.

3.10 QUALITY ASSURANCE

Utilities employ various quality assurance strategies, including inspections and monitoring of customer satisfaction. Post-inspection is utilized by all utilities to monitor contractors and assess customer satisfaction with the program. PG&E additionally performs pre-inspections, specifying the measures that will be installed, effectively eliminating the possibility of installing ineligible measures. RHA energy specialists performing outreach for SDG&E's program specify the measures that will be installed by the contractor, providing an independent assessment and greatly reducing the possibility of over-specification of measures. Additionally, RHA supervisors perform ride-alongs and telephone interviews with contacted households to assess effectiveness of its energy specialists.

Each utility tracks customer satisfaction through a survey. SCE, SDG&E, and PG&E implement an ongoing survey through either the mail or phone.¹⁰ SCG relies upon a periodic evaluation to assess customer satisfaction with the program. Satisfaction surveys, in addition to monitoring how the customer feels about the program, also monitor contractors and allow instant feedback on their performance. The utilities have developed penalties for contractors who repeatedly score low on the surveys. SCE additionally relies upon the results of their customer satisfaction surveys to track CFL installation and to verify that contractors are actually installing the number of CFLs for which they invoice the program. Inventory tracking by SCE of the allotment of CFLs for each CBO also ensures that invoicing equals installation quantities.

Table 3-10 illustrates the responsible party for the various activities employed by the utilities to monitor quality assurance.

Table 3-10
Quality Assurance

Utility	PG&E			SDG&E			SCE		SCG	
	Utility	RHA	Cont.	Utility	RHA	Cont.	Utility	Cont.	Utility	Cont.
Pre-Inspection	X									
Weatherization measure assessment	X				X			X		X
Post-Inspection	X			X	X		X	X	X	X
On-going customer satisfaction survey	X				X		X			

¹⁰ PG&E recently changed from a mail-back postcard to a phone survey, where they have experienced a much higher response rate (75 percent v. 7 percent). The other two utilities employ a mail survey.

The main differences in quality assurance across the utilities are: (1) SCG is the only utility that does not perform an ongoing customer satisfaction survey, and (2) the assessment of potentially eligible weatherization measures for SCE's and SCG's LIEE programs is performed by the same entity that installs the measures, while for PG&E and SDG&E an independent entity (the utility or RHA) performs the assessment. It should be noted that there were less than 1,300 electrically heated homes weatherized under SCE's LIEE program. Therefore, the potential impact of any overspecification of measures for SCE's electrically heated homes would be minimal.

This section discusses recommendations to improve LIEE program efficiency and consistency statewide. Where appropriate, we have identified effective policies and practices that are currently being implemented by the utilities that should be continued and, to the extent that they are relevant to all utilities, might be considered best practices to be incorporated statewide.

We have organized the recommendations in this section around the following areas:

- Improving the process of identifying qualified households
- Improving the processes of customer outreach, data collection, and referrals
- Improving the consistency of energy education
- Maximizing the opportunities for comprehensive treatment
- Maximizing benefits from bulk purchasing
- Improving the consistency of quality assurance and customer satisfaction monitoring.

In summary, we find that the process by which each utility implements the LIEE program has been fairly well tested. The utilities have been operating low-income energy-efficiency programs for decades, and, as such, the current program designs have benefited tremendously from this experience. Utilities have been working with many of the same outside contractors for years; they have established relationships with key players in this market and are aware of the capabilities and limitations each of these organizations possess. The utilities are also actively working to expand efforts to leverage resources available from other low-income assistance programs. Finally, the utilities are currently participating in an intensive effort designed to standardize LIEE program processes, including weatherization installation standards.

Nevertheless, each of the utilities is constrained by a number of factors that affect what changes can feasibly be made or may limit further standardization. For example, SCE and SCG are constrained in that each utility is focused on a single fuel. This is a significant factor to consider in determining the types of changes that can be made that will lead to process improvements. In general, each of the utilities is also constrained by factors such as inadequate staffing or the need to serve a large and diverse population. These factors determine how a given utility administers the LIEE program. In addition, each utility faces funding constraints that limit penetration for some of the more high-impact yet high-cost measure installations.

Recommendations for process improvements must therefore be carefully considered in light of each company's characteristics/structure and these constraints. Moreover, recommendations for best practices may be best judged appropriate on a utility-by-utility basis, given each utility's unique circumstances as opposed to developing a statewide, uniform set of best practices.

4.1 IMPROVING QUALIFICATION PROCESSES

- **Utilities should continue to develop ways to improve the effectiveness of identifying households that are income-qualified and eligible for measure installations under the current program (as well as new measures that may be added in subsequent program years).**

Most of the utilities currently use some system for identifying target neighborhoods. All utilities rely on the experience of their contractors who are engaged in canvassing target neighborhoods. Some utilities supplement this process by providing contractors with CARE participant lists to better target low-income neighborhoods and households. Others provide contractors with census data and other demographic information to help target income-qualified neighborhoods. As new target neighborhoods are created and/or existing target neighborhoods expand, the utilities should continue to provide updated information to contractors for increasing participation in these new areas.

In addition, utilities should continue to query past LIEE program databases to identify customers who may be eligible for repeat treatment (i.e., CFLs). In addition, if program budgets are increased for high-impact measures, utilities could use data from past programs to identify opportunities that were not funded in prior years (i.e., refrigerators, HVAC measures). These queries could also be used to identify customers who may be eligible for new measures that have been added to the program in recent years (i.e., water heaters, room air conditioners). Finally, contractors should be given customer-level data, where possible, so that they can more easily identify whether or not customers have participated in the LIEE program too recently and, as such, are not eligible for treatment under the current program.

This information should be provided to contractors on a regular basis, with updated information highlighted in some way to make it more useful. The information could be provided via written reports and/or electronic databases.

- **The requirement that contractors retain income eligibility documents should be enforced only for households receiving comprehensive treatment.**

Currently, customers must provide proof of income eligibility to contractors to qualify for the LIEE program. Customers are required to show these documents to contractors, assist them in completing paperwork verifying income-eligibility, and sign a statement indicating that the information provided to contractors is complete and truthful.

In PY2002, the utilities will be required to copy and retain income documents used in qualifying households in the LIEE program. Considering the scope of work completed in most LIEE program participants' homes, this requirement should not be unreasonable. Further, it serves as an appropriate check on contractors, ensuring that they are not enrolling customers without basis.

However, this requirement may be somewhat unreasonable for SCE customers who will participate only in its relamping program. Considering the volume of participants in this one program component and the very limited scope of services offered (i.e., installing CFLs), making copies and retaining documents may be unnecessarily burdensome for some of the smaller community-based organizations (CBOs) that have historically delivered SCE's relamping program.

If, for the same customer, SCE and SCG contractor activities were more coordinated, this requirement might not be as much of a problem. That is, if customers receiving CFLs are also assessed for weatherization measures (and vice versa), ensuring proper income documentation would be appropriate and should be collected prior to installing weatherization measures.

- **Continue to enroll customers in CARE as a formalized component of the LIEE program outreach process.**

Currently, all utilities enroll customers in CARE or provide applications for enrollment as part of the initial LIEE program outreach and education visit. In the case of SCE and SCG customers, SCE has created a space on its CARE enrollment form for the customer's SCG account number. The idea would be that SCG could then use this same information and enroll the customer in its CARE program, avoiding the need to fill out two forms or collect the same information twice. SCG should consider adding a similar space on its CARE enrollment form for the SCE account number to eliminate duplication of effort going the other way.

4.2 IMPROVING OUTREACH, DATA COLLECTION, AND REFERRAL PROCESSES

- **To the extent possible, LIEE program participants should continue to be assessed for eligibility for all program measures during the first or second visit.**

In most areas, it seems reasonable to have an initial visit to qualify the household based on income criteria. In addition, this visit would involve customer outreach, in-depth energy education, and CFL installations. A second visit might then be conducted to determine eligibility for weatherization and appliance replacement measures. The exception to this would be SDG&E. Given the size of its service territory and its use of specialized staff (RHA), it is possible to deliver all of these services in one visit.

PG&E had previously relied on contractors to conduct both the initial outreach and the measure assessment in the first visit. PG&E inspection staff would return to the home for a second visit to conduct combustion appliance safety (CAS) tests and a pre-inspection of contractors' measure assessments. Recently, PG&E made a change to this process – it still relies on contractors to identify participants and perform outreach and education, but it no longer requires them to identify measure opportunities. PG&E now performs this function, along with conducting CAS tests, during the second visit.

While this change did not necessarily reduce the number of visits required to get the customer to the same point in the process, it did eliminate duplication of effort where contractors and PG&E inspection staff were both identifying measure opportunities. Conceivably, this process could be further streamlined to one visit in which the contractors performed all required activities on behalf of PG&E. Streamlining PG&E's process into one visit per customer, however, would require PG&E to eliminate or relax its policies on mandatory CAS testing and pre-inspections.

- **Information on LIEE program measure potential should be collected and stored for each participating customer.**

Currently, most utilities are identifying and tracking information on the LIEE program measure opportunities that exist in each participant's home, regardless of fuel type. PG&E and SDG&E, as combination-fuel utilities, are obviously set up to do this. SCE collects information applicable to determining eligibility for all LIEE program electric measures. SCE also collects information that could be helpful to SCG in identifying leads for gas weatherization and furnace measures. That is, SCE contractors identify and record the space heating fuel type as part of the outreach activities. This information could conceivably be shared with SCG for follow-up on weatherization and furnace measures.

SCG's process for identifying and tracking information on measure potential could be improved. First, SCG should institute a formal process for assessing furnace measures as part of the weatherization data collection process. Currently, this process is informal; weatherization contractors are not required to collect this information and SCG does not automatically refer customers from its weatherization program component to the furnace program component. Granted, SCG has not had problems meeting its furnace goals through the current process. However, this recommendation would streamline the process by providing income-qualified leads to the furnace program. In addition, collecting this information for all LIEE program participants would be useful in characterizing the true potential for this measure (not just the potential that can be tapped given funding constraints).

In addition, SCG should consider working more closely with SCE to identify ways to collect and store information on electric appliance potential. For example, SCG contractors should be collecting data on the age of participants' refrigerators, the presence of central air conditioners in hot, dry climate zones, etc. In this way, information would be available for all LIEE program participants and it could conceivably be shared with SCE for follow-up.

It should be noted that SCG and SCE are currently working on a database to store and share information on customers served by both utilities. This database would be extremely valuable in minimizing the duplication of effort involved with identifying income-eligible households and tracking participation in both SCG's and SCE's programs.

- **LIEE program measure referrals should be shared for income-qualified households residing in the overlap areas between the single-fuel utilities.**

In considering modifications to SCE's and SCG's internal processes, one must recognize that, as single-fuel utilities, both are currently set up to offer services per the fuel they provide. It is the nature of their business, and thus it is the nature of their program. Nevertheless, the two utilities have established an Inter-Utility Agreement, which allows them to coordinate the provision of both electric and gas measures in homes located within the overlap territory. It seems reasonable that this agreement could be expanded to include additional opportunities for more comprehensively treating the energy efficiency needs of the entire dwelling and further reducing duplication of effort in terms of the customer outreach and income-qualification processes.

For example, SCE and SCG currently do not share referrals for LIEE program measures when the customer is served by both utilities. That is, SCE customers who have been income-qualified, educated, and provided with CFLs are not being systematically referred to SCG's weatherization and furnace contractors for assessment and potential treatment. Similarly, SCG customers who have been assessed/treated for weatherization measures do not always receive CFLs at the time of weatherization, nor are they systematically referred to SCE contractors for appliance replacement.

As stated above, the utilities are working on a database to improve the process of sharing information on participating households located in the overlap areas. This database should be used to generate income-qualified leads for each of the utilities' program components and to ensure, to the extent possible given individual program goals and budgets, that comprehensive treatment is offered to each participating customer. In addition, in PY2002, SCG weatherization contractors will be providing participants with CFLs on behalf of SCE. These changes should streamline the process of identifying and qualifying LIEE program participants, and improve the likelihood that customers served by both utilities will receive more comprehensive treatment.

4.3 IMPROVING ENERGY EDUCATION PROCESSES

- **Energy education could be made more consistent – and potentially more effective – across the utilities.**

Currently, all utilities have a somewhat different approach to providing energy education. SDG&E relies on RHA's trained energy specialists, who spend a considerable amount of time working with customers to provide education and outreach services. PG&E uses contractors to deliver energy education, which includes conducting an energy usage analysis and bill disaggregation. Both SDG&E and PG&E customers also receive recommendations for behavioral changes that could help them decrease their energy costs.

In contrast, SCE and SCG do not provide this level of education at the time of outreach. Customers are provided with packets of materials – sometimes duplicate materials if served by

both utilities. Contractors, however, do not spend considerable time reviewing the information contained in the packets. Additionally, contractors do not systematically provide customers with recommendations or guidance on ways they can reduce their energy usage. In fact, SCE and SCG contractors spend very little time providing traditional energy education and outreach. Instead, the bulk of their time is spent discussing the LIEE program policies and how the customer may be able to benefit from program services (i.e., which measures they may be eligible for).

To be consistent with the other utilities, SCE and SCG might require its contractors to provide enhanced outreach and education support. More time could be spent with customers helping them to gain an understanding of how their behavior affects energy use and working closely with them to establish a set of attainable goals for reducing the energy costs. Outreach and education workers could also spend time with customers going over other energy and low-income assistance programs that are available to them in their area – that is, customizing the information contained in the brochures to the specific circumstances of the customer. The two utilities should work together to develop a streamlined packet of materials that consolidates the information so that it is more useful and understandable to the customer. If implemented, these changes would need to be formally integrated into the utilities' training process for outreach workers.

It is difficult to judge which outreach and education methods – or parts of methods – have been most effective. Do customers use or retain the information provided during the education sessions? Is PG&E's bill disaggregation useful? Are the recommendations being acted upon? These types of questions will be addressed in the participant survey to be completed in the fall of 2001. The results from the survey questions will be used to make comparisons across participants to identify which methods are most effective and which are most valued by participants.

4.4 MAXIMIZING OPPORTUNITIES FOR COMPREHENSIVE TREATMENT

- **The opportunity for all eligible customers to participate in the refrigerator replacement component of the LIEE program should be maximized.**

Currently, most utilities are restricted by limited goals and budgets and cannot refer all potentially eligible LIEE participants into the refrigerator component of the program. Refrigerator replacement is considered a highly cost-effective measure for utilities to promote and, for low-income customers in particular, results in significant reductions in monthly energy costs. To the extent that program goals and budgets can be expanded in this area, existing opportunities to install new refrigerators in greater number of LIEE program participants' dwellings should be pursued.

- **Furnace repair/replacement measures could be more effectively integrated in SCG’s LIEE program to streamline processes and maximize opportunities.**

SCG implements the furnace repair/replacement component of the LIEE program as a fairly separate activity. That is, SCG gas technicians – responding to customer requests for furnace service – identify and income-qualify customers for participation in the LIEE program. While these customers are referred to SCG’s weatherization program component if appropriate, there is no formalized referral process from SCG’s weatherization program component to the furnace program component. That is, SCG contractors should assess the need for furnace measures – along with weatherization – and share these leads with SCG’s staff for follow-up and further assessment.

4.5 BULK PURCHASING

- **Utilities should continue to look for opportunities to benefit from bulk purchasing arrangements for program measures.**

Currently, a number of the utilities (or their contractors) are engaged in or pursuing bulk purchasing for program measures, including CFLs and major appliances (e.g., refrigerators, room air conditioners, water heaters, portable evaporative coolers). PG&E does not currently bulk-purchase CFLs but could benefit from such an arrangement.

As new measures are identified, the utilities should investigate cost-saving opportunities from bulk purchasing. In addition, it would be considerably useful if utilities currently negotiating with major appliance manufacturers to bulk purchase program measures would share this information with other utilities to improve consistency and provide greater benefit to the program statewide. For example, a number of the utilities indicated that they are looking into bulk purchasing room air conditioners, but it is unclear whether or not these efforts are being coordinated.

4.6 QUALITY ASSURANCE

- **Differences in the quality assurance policies and practices across utilities should be further assessed.**

There are differences in the way that utilities monitor the reasonableness of weatherization measures before they are actually installed. For example, PG&E uses its own staff to identify the scope of weatherization measures to be installed in participants’ homes and then provides contractors with detailed specifications for carrying out the work. Similarly, SDG&E uses RHA staff to identify appropriate weatherization measure opportunities and then allocates the work to one of several qualified weatherization contractors. In this way, both utilities provide an independent assessment of the scope of work required and utilize contractors basically to fulfill work orders.

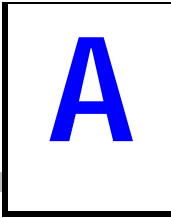
SCE and SCG, on the other hand, do not conduct this type of independent assessment before weatherization measures are installed. Measure installations are monitored via the post-inspection process. SCE and SCG weatherization contractors complete the assessment, research prior services, and install the measures. Neither SCE nor SCG conduct on-site pre-inspections to determine the reasonableness of the contractors' recommendations. Under this model, the incentive for installing unnecessary measures exists. However, utilities are not currently required to conduct pre-inspections, and neither SCE nor SCG believe that weatherization measures are unnecessarily installed to any significant extent based on post-inspection results.

Before recommending any changes to these processes, an independent assessment is needed to determine the extent to which (if at all) measures are being unnecessarily installed. This might involve conducting a limited number of independent assessments (10 to 15 percent), which could be completed by utility staff and/or independent contractors. These assessments should be designed to determine whether there is a problem – i.e., are contractors installing unnecessary measures? If so, is the problem limited to a few contractors, a certain kind of measure, etc.?

If problems are identified and they are considered significant, the utilities should then consider making changes to their quality assurance policies and procedures. These changes should be consistent with the magnitude and scope of the problems identified. For example, 100-percent pre-inspection may not be required. The utilities may be able to conduct 10- to 15-percent random inspections, with penalties for contractors who consistently fail. Or, the assessment may show that pre-inspections are not necessarily required; instead, contractors may simply need more/enhanced training to improve the specification process.

- **A formal, ongoing survey on customer satisfaction should be a component of each utility's quality assurance program.**

Currently, SCG is the only utility not implementing any type of ongoing formal customer satisfaction survey. While SCG (as well as the other utilities) has implemented periodic customer surveys to evaluate customer satisfaction, these surveys do not provide the type of instant and ongoing feedback needed for quality assurance. This type of feedback is very valuable and should be consistently available to all program implementers.



PROCESS FLOW CHARTS

This appendix provides flow charts depicting the process for the LIEE program offered by PG&E, SCE, SCG, and SDG&E. The program process is presented from the implementation and the customer perspective for each utility.

A.1 PG&E PROCESS FLOW

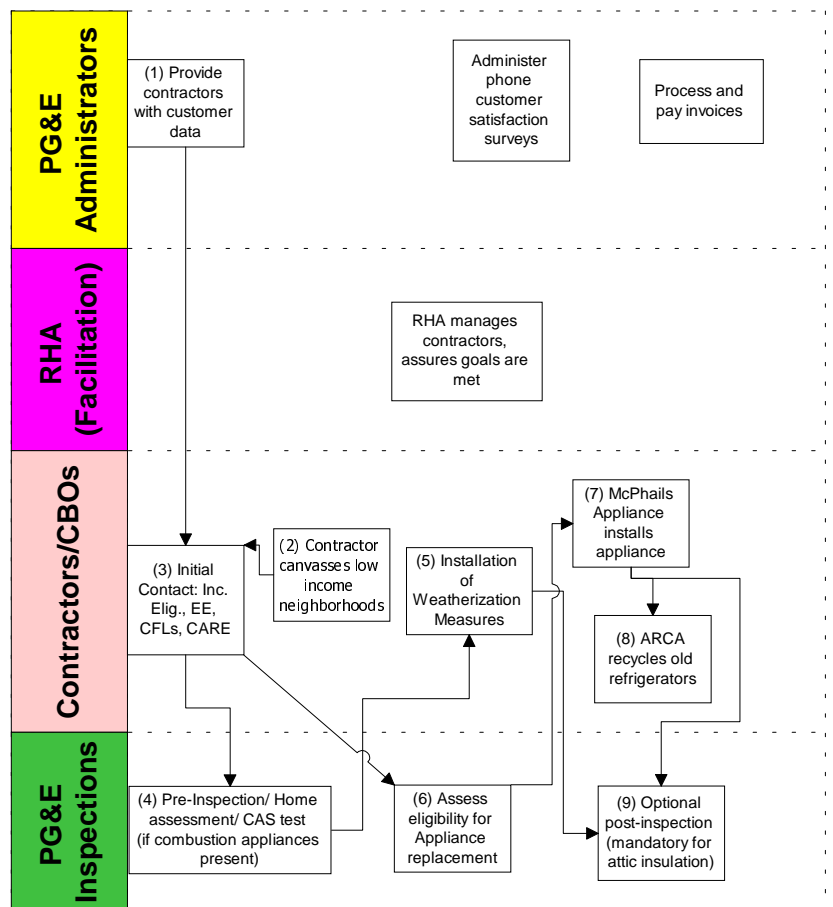
Figure A-1 presents an implementation-oriented process flow chart for PG&E's LIEE program. That is, this chart shows the different roles associated with administering and implementing the LIEE program according to who or what entity is responsible for carrying them out. Examples of activities for which PG&E staff administrators are responsible include:

- Providing contractors with customer data for target marketing
- Assessing eligibility for appliance replacement
- Administering the telephone customer satisfaction survey.

PG&E's Central Inspections group is responsible for combustion appliance safety (CAS) testing, pre-inspection/home assessment, and post-inspections.

PG&E's implementation contractor is responsible for hiring and managing contractors, and ensuring that program goals are being met. Installation contractors and CBOs are responsible for canvassing neighborhoods for income-eligible customers, installing weatherization measures, refrigerators, portable evaporative coolers, repairing and replacing furnaces, and recycling old refrigerators.

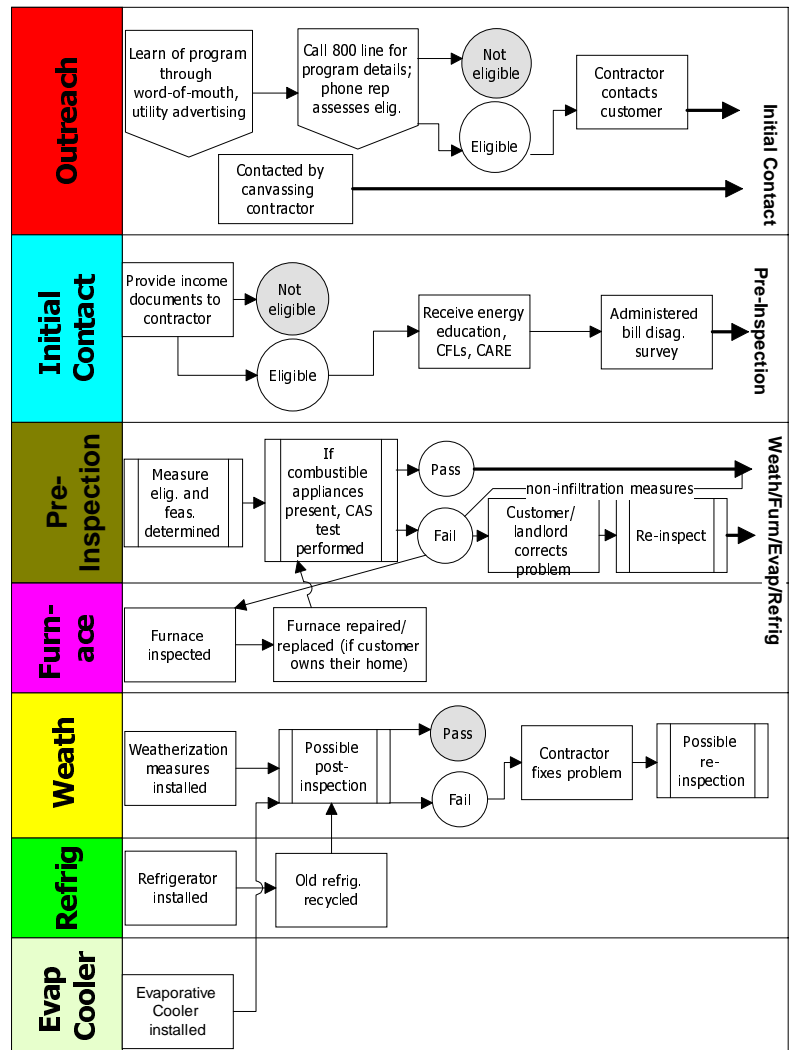
Figure A-1
PG&E Implementation Process Flow



**Figure A-2
PG&E Customer-Perspective Process**

Figure A-2 depicts the LIEE program process flow from the perspective of the participating customer. In this figure, the downward-arrow shaped boxes represent steps that are initiated by the customer. The square boxes represent contractor-initiated steps, or processes that are the responsibility of the contractor. The outlined square boxes represent PG&E-initiated steps, such as pre- and post-inspections. The gray-shaded shapes represent final steps in the process.

PG&E’s program provides the customer with complete service. Customers do not have to initiate participation in other measures after receiving weatherization; they will receive all applicable measures for which they are eligible. The only customer-initiated step in PG&E’s process is customer contact to the utility via the dedicated LIEE phone line for customers who have heard about the program through word of mouth or utility bill inserts.



As shown, the first step, Outreach, involves the process of learning about the program – either by word of mouth or direct contact with contractors. The remaining rows depict the process customers go through to receive all measures for which they are eligible through the LIEE program.

Each income-qualified customer (Initial Contact) moves to the pre-inspection and continues through the process for each and every measure for which they are eligible.

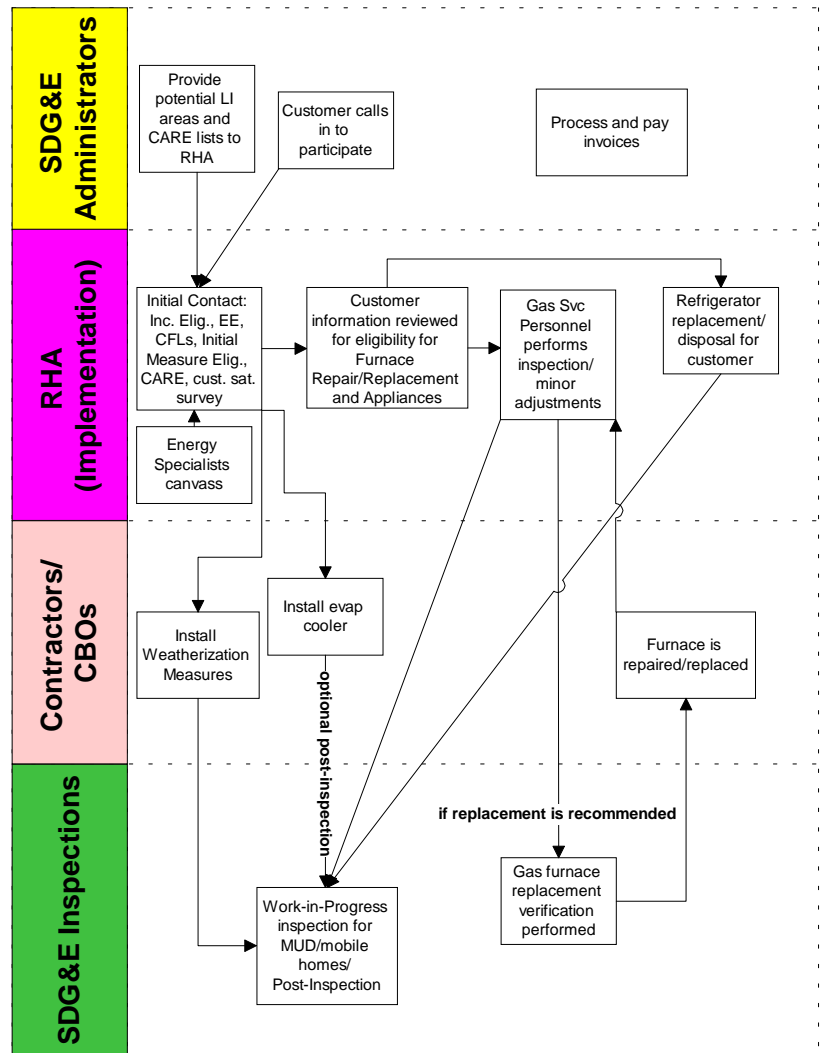
A.2 SDG&E PROCESS FLOW

Figure A-3 presents an implementation-oriented process flow chart for SDG&E’s LIEE program. That is, this chart shows the different roles associated with administering and implementing the LIEE program according to who or what entity is responsible for carrying them out. Examples of activities for which SDG&E staff administrators are responsible include:

- Providing the implementation contractor with customer data for target marketing
- Processing and paying of invoices
- Receiving phone calls from interested customers and forwarding leads to contractors.

SDG&E’s implementation contractor (RHA) is responsible for performing customer outreach and home assessment, hiring and managing contractors, and ensuring that program goals are being met.

**Figure A-3
SDG&E Implementation Process Flow Charts**



RHA staff also bulk purchase and warehouse appliances and CFLs, deliver and install new refrigerators, install evaporative coolers, and perform minor furnace adjustments. Additionally, RHA staff inspects furnace work performed by HVAC contractors.

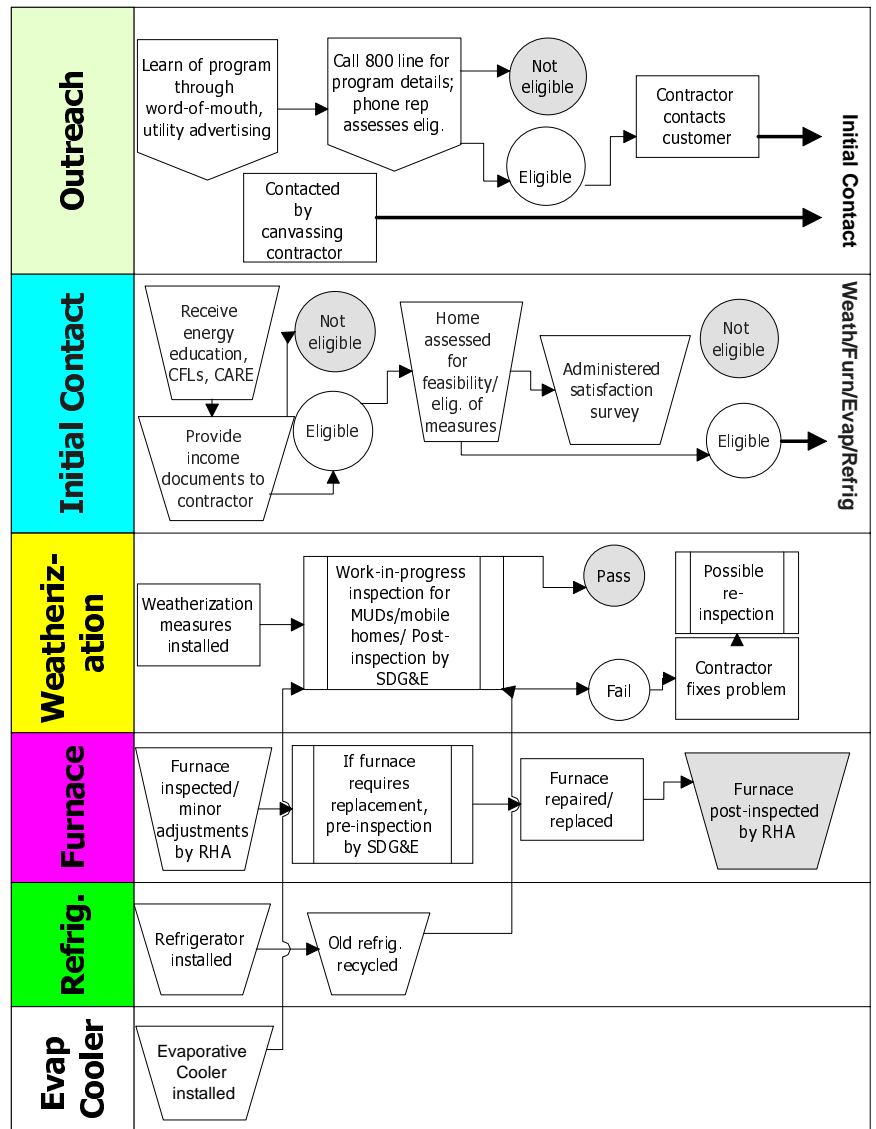
Installation contractors and CBOs are responsible for installing weatherization measures, evaporative coolers, and repairing and replacing furnaces.

SDG&E Inspections staff performs work-in-progress inspections for multi-unit dwellings and post-inspections.

Figure A-4 depicts the LIEE program process flow from the perspective of the participating customer. In this figure, the downward-arrow-shaped boxes represent steps initiated by the customer. The square boxes represent contractor-initiated steps or processes that are the responsibility of the contractor. The outlined square boxes represent SDG&E-initiated steps, such as work in progress and post-inspections. Trapezoidal boxes represent RHA-performed steps. The gray-shaded shapes represent final steps in the process.

SDG&E’s program provides the customer with complete service. Customers do not have to initiate participation in other measures after receiving weatherization; they will receive all applicable measures for which they are eligible. The only customer-initiated step in SDG&E’s process is customer contact to the utility via the dedicated LIEE phone line for customers who have heard about the program through word of mouth or utility bill inserts.

Figure A-4
SDG&E Customer-Perspective Process



As shown, the first step, Outreach, involves the process of learning about the program – either by word of mouth or direct contact with contractors.

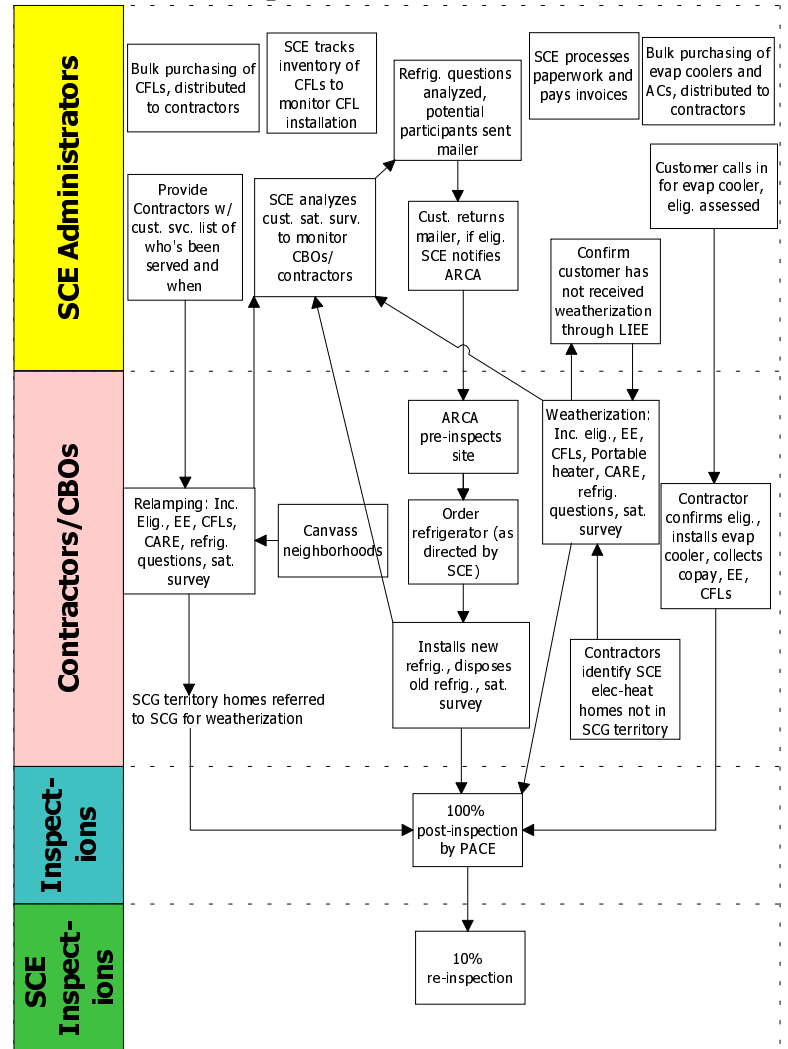
The remaining rows depict the process customers go through to participate in each of the various LIEE program components. Each income-qualified customer (Initial Contact) continues through the process for each and every measure for which they are eligible.

A.3 SCE PROCESS FLOW

Figure A-5 presents an implementation-oriented process flow chart for SCE’s LIEE program. That is, this chart shows the different roles associated with administering and implementing the LIEE program according to who or what entity is responsible for carrying them out. Examples of activities for which SCE staff administrators are responsible include:

- Bulk purchasing CFLs, distributing them to contractors, and tracking/monitoring inventory sent to contractors
- Bulk purchasing evaporative coolers, determining customer eligibility for installation, and distributing units to contractors as needed
- Providing contractors with lists of customers who have previously been served under the LIEE program (and when), and informing contractors (who call in) what/when services have already been provided to LIEE program participants
- Determining which customers should be mailed the refrigerator program letter and sending leads to the refrigerator contractor, ARCA.

Figure A-5
SCE Implementation Process Flow



SCE’s contractors/CBOs are responsible for a variety of program delivery tasks, including measure installations for the relamping program (i.e., providing energy education, enrollment for CARE, CFL installations, etc.), the refrigerator replacement and recycling program, the weatherization program, and the evaporative cooler program. In addition, SCE’s inspection contractor is responsible for inspecting contractor work.

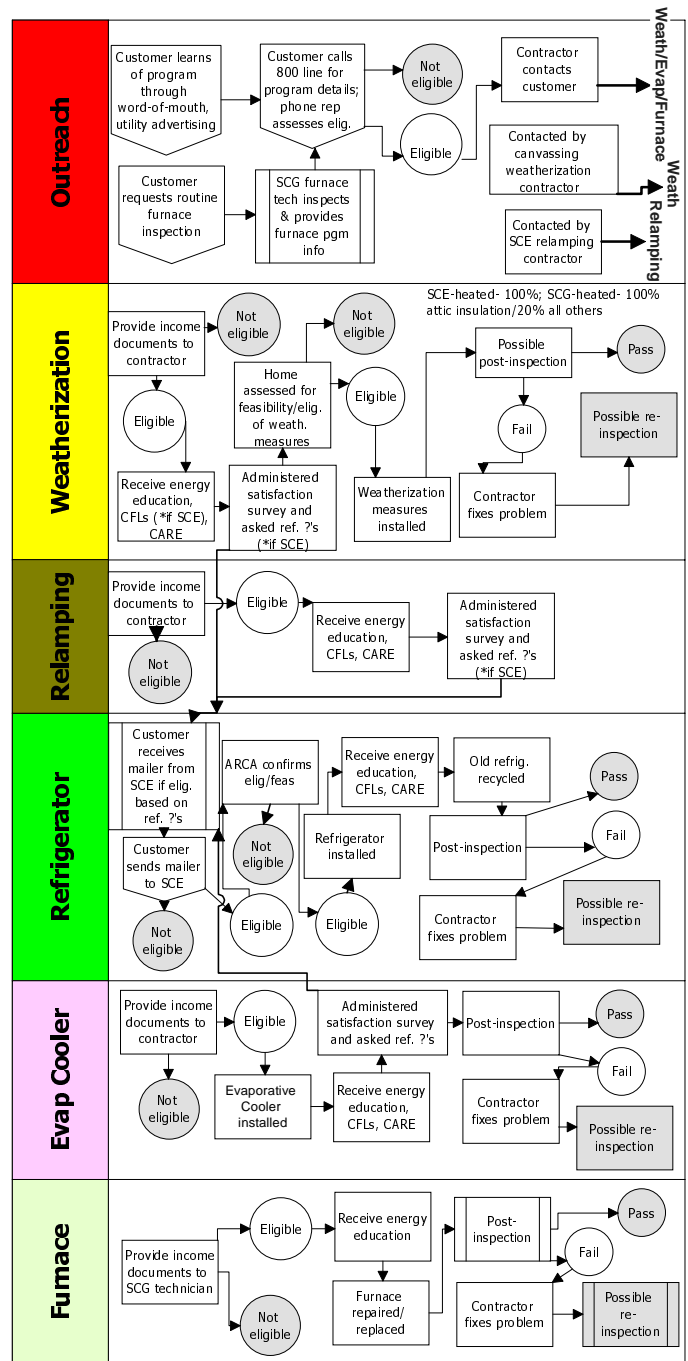
Figure A-6 depicts the LIEE program process flow from the perspective of the participating SCE/SCG customer.¹ Customers in the overlap territory are provided with CFLs and appliances through SCE’s program and weatherization and furnace repair and replacement through SCG’s program.

In this figure, the downward-arrow-shaped boxes represent steps that are initiated by the customer. The square boxes represent contractor-initiated steps or processes that are the responsibility of the contractor. The outlined square boxes represent utility-staff-initiated steps, such as work-in-progress and post-installation inspections. The gray-shaded shapes represent final steps in the process.

As stated previously, there are various instances where the customer must take action to participate in the LIEE program (the downward-arrow-shaped boxes). For example, customers must take initiative to participate in the refrigerator program (return the mailer), evaporative cooler program (call the utility), the furnace program (call the utility), and can initiate participation in the weatherization program by calling the utility.

As shown, the first step, Outreach, involves the process of learning about the program – either by word of mouth or direct contact with contractors. The remaining rows depict the process customers go through to participate in each of the various LIEE program components.

Figure A-6
SCE/SCG Customer-Perspective Flow Chart



¹ Note that most of SCE’s customers with natural gas service are served by SCG. A small portion of natural gas service in SCE territory is provided by either the City of Long Beach, Southwest Gas, or PG&E. Most of SCG’s customers are provided with electricity by SCE. A small portion of electric service in SCG territory is provided by LADWP and Imperial Irrigation District.

A.4 SCG PROCESS FLOW

Figure A-7 presents an implementation-oriented process flow chart for SCG’s LIEE program. That is, this chart shows the different roles associated with administering and implementing the LIEE program according to who or what entity is responsible for carrying them out. Examples of activities for which SCG staff administrators are responsible include:

- Managing administration and monitoring of the program elements
- Taking customer calls and forwarding leads to contractors
- Processing paperwork and paying invoices.

SCG’s contractors/CBOs are responsible for a variety of program delivery tasks, including canvassing neighborhoods, installing weatherization measures, performing furnace repair and replacement, and performing weatherization post-inspections.

SCG furnace program staff performs pre- and post-inspections to specify and monitor all furnace work.

**Figure A-7
SCG Implementation Process Flow Chart**

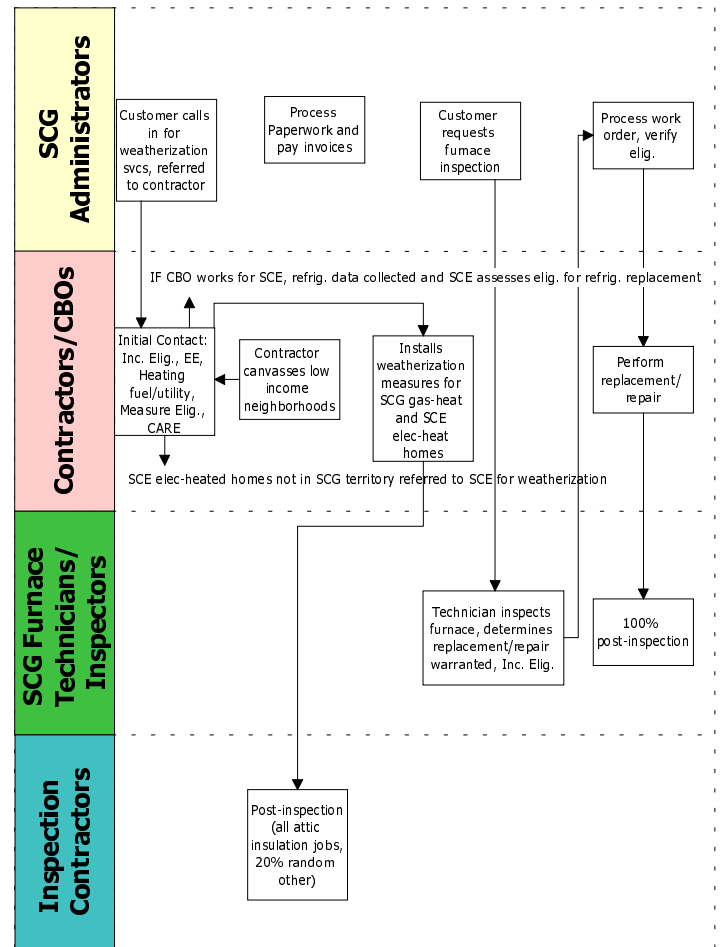


Figure A-6 presents the customer-perspective flow chart for both SCE and SCG.

B

PARTICIPANT TELEPHONE SURVEY RESULTS

This appendix presents results from a telephone survey that was administered to a sample of PY2000 Low-Income Energy Efficiency (LIEE) Program participants in support of impact and process evaluations conducted by XENERGY on behalf of the California investor-owned utilities (IOUs). A copy of the telephone survey instrument and a set of survey result frequencies is provided as Appendix C. Methodological considerations associated with this survey are reported under separate cover in Section 2 of the PY2000 Impact Evaluation Report.

The participant telephone survey results presented in this Appendix are organized as follows:

- Source of LIEE Program Awareness
- Benefits from Participation in LIEE Program
- Overall Satisfaction with and Perceived Value of LIEE Program Elements
- Effectiveness of Energy Education Program Element
- Additional Actions Taken by Participants to Further Reduce Energy Consumption
- CFL Installation Rates and Hours of Use

B.1 SOURCE OF LIEE PROGRAM AWARENESS

The LIEE program is advertised by the utilities to an extent, but relies primarily on door-to-door canvassing by contractors, community-based organizations, and other local agents in low-income neighborhoods to attract participants. Word of mouth from past participants is also a significant vehicle for increasing participation in the program.

The participant telephone survey was designed to identify the most common ways participants learned about the LIEE Program. Table B-1 presents the frequencies by utility of survey respondents who learned about the program through various means. As shown, the most common means through which participants became aware of the program included neighborhood canvassing, word-of-mouth channels, and utility bill inserts.

Table B-1
Source of LIEE Program Awareness

	PG&E	SCE	SCG	SDG&E
Someone knocked on my door	27%	34%	32%	24%
Neighbor/friend/family member	25%	24%	26%	19%
Utility bill insert/mailer	16%	14%	13%	20%
Someone left a flyer on my doorstep/door knob	4%	4%	7%	8%
I called the utility	4%	7%	5%	3%
The utility called me	7%	5%	4%	6%
TV/radio	0%	2%	2%	1%
Newspaper	0%	0%	4%	3%
Manager/apartment office/landlord	3%	2%	2%	4%
Other	3%	4%	3%	6%
Don't know	15%	8%	7%	11%
Base	250	250	250	250

B.2 BENEFITS FROM PARTICIPATION IN LIEE PROGRAM

LIEE program participants receive many benefits as a result of participating in the LIEE Program, including receiving education on energy conservation and energy efficiency, information about other low-income programs, enrollment in the utilities' low-income rate assistance program (CARE), and the many benefits associated with the installation of energy-saving measures. Some of these benefits may include lower utility bills and increases in the comfort and/or safety of the home.

Participants were asked to indicate what they perceived to be the *most important* benefit that they received from participating in the program. This question was asked in an open-ended, unprompted fashion. The survey results for this question are displayed in Table B-2.

As shown, the majority of respondents cited either the home improvements they received for free through the program, or the decrease in utility bills they realized as a result of the receiving the free home improvements.

However, a significant number of respondents mentioned other benefits as most important, such as increases in the comfort of their home, education on their energy usage, and personal and societal benefits of being able to save energy.

Table B-2
Most Important Benefit from Participating in the PY2000 LIEE Program

	PG&E	SCE	SCG	SDG&E
Lower utility bill/save money	38%	54%	26%	28%
Free equipment/home improvement/measures/free stuff	35%	27%	35%	35%
More comfortable home/warmer/less drafty	10%	4%	22%	8%
Education on energy usage	5%	4%	2%	10%
Saving energy/more energy efficient	2%	2%	1%	4%
Safer home/secure	2%	1%	3%	2%
Showed concern/caring	0%	0%	1%	2%
None/nothing/no benefit/same as before	0%	1%	1%	0%
Healthier home	0%	0%	0%	0%
Other	1%	2%	3%	3%
Don't know	7%	6%	4%	10%
Base	250	250	250	250

SCE participants were more likely to cite the energy savings they received from the measures as the primary benefit (as opposed to receiving free measures). This may be explained at least in part by the fact that most SCE participants received CFLs and the main benefit from this measure is reduced energy usage. Other participants who received new appliances or more expensive equipment may be more inclined to cite other benefits beyond the reduced energy consumption of the measure itself.

SCG participants were more likely to cite increases in comfort as the primary benefit. This may be due to the fact that most SCG participants either received weatherization or furnace service; therefore, every participant should have experienced some improvement in their ability to cost-effectively condition their home.

After stating the *most important* benefit, participants were then asked if there were any other benefits they received as a result of participating in the LIEE Program. Table B-3 presents a frequency of all the benefits reported by participants.

As shown, across utilities, the majority of participants cited either the free home improvements and/or the reduced energy consumption as a result of the free home improvements as important benefits from participating in the LIEE Program. Increased comfort was also frequently mentioned, especially among SCG participants. Receiving education on energy usage was also a commonly mentioned benefit for PG&E, SCE, and SDG&E participants.

Table B-3
All Benefits from Participating in the PY2000 LIEE Program*

	PG&E	SCE	SCG	SDG&E
Lower utility bill/save money	55%	71%	41%	45%
Free equipment/home improvement/measures/free stuff	53%	55%	55%	57%
More comfortable home/warmer/less drafty	26%	16%	45%	17%
Education on energy usage	12%	12%	6%	15%
Saving energy/more energy efficient	4%	2%	2%	4%
Safer home/secure	4%	3%	9%	3%
Showed concern/caring	0%	0%	2%	2%
None/nothing/no benefit/same as before	0%	1%	1%	0%
Healthier home	1%	1%	4%	2%
Other	2%	4%	4%	4%
Don't know	7%	6%	4%	10%
Base	250	250	250	250

* Multiple mentions allowed. Percentages may not sum to 100%.

After asking participants to state what benefits they received as a result of participating in the PY2000 LIEE Program, respondents were asked a series of questions about specific benefits they may have received, including increases in comfort, safety, and decreases in utility bills.

Table B-4 shows the percentage of respondents who experienced changes in their comfort level as a result of participating in the program. As shown, most participants experienced an increase in comfort levels, while very few reported that comfort levels have decreased after participating in the program.

Table B-4
Noticeable Change in the Comfort Levels in Your Home

	PG&E	SCE	SCG	SDG&E
Yes, increased comfort	60%	52%	73%	48%
Yes, decreased comfort	3%	2%	2%	1%
No	35%	42%	22%	46%
Don't know	2%	4%	3%	6%
Base	250	250	250	250

A fair number of participants, from SDG&E and SCE in particular, reported that they did not experience any change in comfort levels. This can be partially explained by analyzing responses according to the type of service provided to participants. For example, participants who received weatherization, furnace service, and/or an evaporative cooler were much more likely to report

that they experienced increased comfort than those who received non-weather sensitive measures (e.g., CFLs, refrigerators).

Table B-5 shows the percentage of respondents who experienced reductions in their utility bill as a result of participating in the program. As shown, most participants reported that their utility bills have gone down since participating in the program. A fair number of participants have not noticed any change in their utility bills since participating in the program.

Table B-5
Change in Your Utility Bill Since Program Participation

	PG&E	SCE	SCG	SDG&E
Yes, bill has gone UP	8%	8%	14%	11%
Yes, bill has gone DOWN	60%	70%	52%	54%
No	24%	20%	23%	31%
Don't know	7%	3%	12%	4%
Base	250	250	250	250

Some customers indicated that their utility bills have gone up since participating in the program. For PGE& and SCG customers, this result was reported most often by participants who received furnace service. Some of these participants did not have operable furnaces prior to participating in the program and, as a result, we hypothesize that they may have experienced an increase in their utility bills once they began using their furnaces to heat their homes.

For SCE and SDG&E, participants who received weatherization measures were more likely to report their utility bills have gone up. It is possible that some of these participants have experienced the “take back” effect – that is, they can now afford to make their homes more comfortable, whereas before the program, their homes were too “leaky” or inefficient and they could only afford to minimally heat and/or cool their homes.

Finally, home safety is an important component of the LIEE Program. For example, it is part of the energy education component in that participants are provided with information concerning the safe use of electric appliances and emergency instructions for turning off natural gas. In addition, PG&E provides combustion safety tests before installing weatherization measures and providing furnace service. SCG and SDG&E also perform routine maintenance and safety testing on furnaces. Finally, some of the weatherization measures (e.g., replacing broken windows and doors) can improve overall home safety and security.

Table B-6 shows the percentage of respondents who perceive their homes to be safer as a result of participating in the program. As shown, most participants reported that they feel safer in their homes since participating in the program.

Table B-6
Increased Safety or Improved Security Since Program Participation

	PG&E	SCE	SCG	SDG&E
Yes, feel safer as a result of program improvements	75%	73%	85%	62%
No, do not feel safer as a result of program improvements	19%	18%	11%	30%
Don't know	5%	9%	4%	8%
Base	250	250	250	250

B.3 OVERALL SATISFACTION WITH LIEE PROGRAM ELEMENTS

The process of participating in the PY2000 LIEE Program involved several steps before participants would ultimately receive free home improvements. First, they are approached by a canvassing representative or they phone the utility to request participation. Next, they provide documents as part of the confirmation of their eligibility. Appointments are then scheduled for the installation of measures (with the exception of CFLs, which are installed during the first visit), and then measures are installed. Often the utility or its agents will inspect the home after all measures are installed to ensure quality.

Survey respondents were asked to rate their satisfaction with five key elements of the program:

- The process to sign-up for the program, where participants filled out forms and provided income documents
- The program staff and/or outreach workers who collected the forms and income documents
- The amount of time it took from being first contacted to receiving measures
- The program staff and/or contractors who installed the program measures
- The free measures installed in participants' homes.

Table B-7 displays the mean score for each element by utility. Satisfaction levels were reported on a scale of 1 to 4, with 1 meaning completely satisfied and 4 meaning not at all satisfied. As shown, program participants show very high levels of satisfaction with all elements of service. There are no statistically significant differences in perceived service across utilities.

Table B-7
Satisfaction with LIEE Program Elements and Personnel*

	PG&E	SCE	SCG	SDG&E
Program sign-up process	1.3	1.2	1.2	1.2
Outreach staff	1.3	1.2	1.1	1.2
Time between initial contact and receiving measures **	1.4	1.3	1.3	1.2
Installation staff **	1.3	1.2	1.2	1.2
Free measures	1.3	1.3	1.2	1.2

* Mean satisfaction rating on scale where 1=completely satisfied, 2=somewhat satisfied, 3=not very satisfied, 4=not at all satisfied.

** Base: 250 respondents per utility, except for SCE and SDG&E where base for "time between initial contact and receiving measures" and "installation staff" equals number of respondents who had follow-up installation visits. For these program elements, the respondent base equals 164 for SCE and 212 for SDG&E.

B.4 PERCEIVED VALUE OF LIEE PROGRAM SERVICES

The survey was also designed to measure the relative value participants' assigned to various LIEE Program services. As mentioned previously, participants receive many services through the program in addition to no-cost energy saving measures. They are provided with information about other low-income programs for which they may be eligible, energy education including brochures and materials that they often retain and refer to, and CARE enrollment if they are not already enrolled. As part of the in-home energy education session, PG&E and SDG&E program staff also discuss specific actions participants in these programs can take to save energy in their homes. Finally, PG&E participants also receive a detailed energy savings report based on the results of the energy audit performed on site by the energy specialist.

Survey respondents were asked to indicate how valuable they felt the following program services to be:

- The information about other utility and state assistance programs
- The brochures on general ways to save energy at home
- The discussion with the utility representative on specific things to do to save energy at home (PG&E and SDG&E only)
- Enrollment in CARE, a program offering a special rate for low-income residents on their energy bills
- The energy survey report containing recommendations and received in the mail 1 to 2 weeks after the initial visit (PG&E only)
- The installation of energy saving measures.

Table B-8 displays the mean score for each element by utility. Value ratings were reported on a scale from 1 to 5, with 1 meaning of little value and 5 meaning very high value. As shown, almost all services for all utilities were given a mean rating of around 4.5, meaning that respondents valued each service very highly.

Table B-8
Perceived Value of LIEE Program Services*

	PG&E	SCE	SCG	SDG&E
Information on other LI assistance programs	4.1	4.1	4.5	4.0
Energy conservation brochures	4.4	4.5	4.4	4.3
Energy conservation discussion with utility rep	4.4	na	na	4.4
Enrollment in CARE	4.5	4.5	4.6	4.6
Energy survey report	4.4	na	na	na
Installation of energy saving measures	4.5	4.5	4.6	4.5

* Mean value rating on scale from 1 to 5, with 1 meaning “of little value” and 5 meaning “very high value.” Base equals 250 respondents per utility.

According to these results, participants valued the energy education materials and/or discussions, as well as the CARE enrollment feature, just as much as they valued getting the free measures. However, those that received appliances and/or furnace service rated the installation of energy saving measures higher than those that received CFLs and/or weatherization measures only.

Perceived value of service does not vary by utility service territory, with the exception that SCG participants on average valued the information about other low-income programs slightly more than participants of the other utilities’ programs.

B.5 EFFECTIVENESS OF ENERGY EDUCATION PROGRAM ELEMENT

Providing low-income residents with relief from high utility bills can be achieved through the installation of energy-saving measures and also through educating residents on how to better manage and conserve energy in their homes. Behavioral measures that participants can adopt at no cost allow for significant energy savings in addition to those expected from the energy-saving measures installed.

This type of energy education is provided to all LIEE Program participants, but each utility provides this service in a unique way. SCE and SCG rely more on brochures and materials, while SDG&E relies more on an in-depth discussion between the participant and an energy specialist. PG&E also relies on an in-depth discussion, but the discussion is part of an energy audit that the energy specialist conducts during the initial visit. PG&E participants also receive a follow-up energy report in the mail soon after the energy audit is conducted.

The participant survey was designed to evaluate the effectiveness of the energy education component of the program. As shown in Table B-7 and B-8 above, participants were satisfied with and highly valued various elements of the energy education component.

In addition, the participant survey included three specific questions designed to evaluate the effectiveness of the energy education component of the program:

- How informative did you find the energy education information, including the packet with brochures that you received?
- How knowledgeable do you feel the utility representative was about how you could save energy?
- Do you continue to use the information you received in the energy education portion of the program?

Table B-9 presents the results from the first question by utility. As shown, almost every participant found the education materials to be informative, and most found them very informative.

Table B-9
Extent to Which Energy Education Materials Were Regarded as Informative

	PG&E	SCE	SCG	SDG&E
Very informative	64%	64%	67%	58%
Somewhat informative	23%	19%	17%	27%
Not very informative	2%	2%	1%	2%
Not at all informative	2%	0%	0%	2%
Don't remember receiving education/packet-	4%	12%	11%	7%
Don't know-	4%	4%	4%	4%
Base	250	250	250	250

Table B-10 presents the results to the second question assessing the knowledge of the energy specialists or utility representatives who conducted the energy education. As shown, almost all respondents found the representative to be knowledgeable about ways in which they could save energy at home.

Table B-10
Participant Assessment of Energy Specialist/Utility Representative Knowledge

	PG&E	SCE	SCG	SDG&E
Very knowledgeable	76%	68%	73%	69%
Somewhat knowledgeable	15%	18%	16%	20%
Not very knowledgeable	1%	1%	2%	1%
Not at all knowledgeable	1%	1%	1%	1%
Don't know	8%	12%	8%	8%
Base	250	250	250	250

PG&E participants were slightly more likely to say the energy specialist was very knowledgeable as compared to the other utilities. However, when the very and somewhat knowledgeable categories are combined, there are no significant differences across the utilities.

Finally, the third question addressed the extent to which participants continue to use the energy education information they received through the program. Table B-11 presents the results to this question by utility. As shown, the majority of participants reported that they continue to use this information. These results do not differ significantly by utility.

Table B-11
Continued Use of the Energy Education Information

	PG&E	SCE	SCG	SDG&E
Continue to use information	80%	77%	74%	77%
Do not continue to use information	13%	16%	17%	17%
Don't know	6%	7%	8%	6%
Base	250	250	250	250

B.6 ADDITIONAL ACTIONS TAKEN TO SAVE ENERGY

Participants were asked whether or not they have undertaken additional energy saving actions since participating in the LIEE Program. As shown in Table B-12, over half of the participants in each utility program indicated that they have taken some additional actions to save energy since participating in the program.

Table B-12
Participants Reporting Taking Additional Actions to Save Energy at Home

	PG&E	SCE	SCG	SDG&E
Have taken some action to save energy	52%	62%	50%	54%
Have not taken any action to save energy	45%	38%	48%	45%
Don't know	2%	1%	2%	0%
Base	250	250	250	250

Table B-13 lists the types of actions that participants report they have taken to save energy at home since participating in the program. Note that almost all of the reported actions are behavioral in nature, likely because many cost-effective energy-efficiency measures were already installed through the program, and because low-income residents are capital-constrained and are less likely to be able to afford the up-front costs of additional energy-efficiency investments.

Table B-13
Actions Taken to Save Energy Since Participating in Program*

	PG&E	SCE	SCG	SDG&E
Turn off lights	44%	44%	28%	38%
Careful/watch/save energy consumption (general)	15%	6%	10%	10%
Turn down heat/turn off heat at night	9%	5%	15%	11%
Turn off/unplug appliance/use less (misc.)	9%	10%	7%	10%
Change/fix/close/seal/cover windows	7%	12%	10%	5%
Replace light bulbs	8%	10%	4%	9%
Turn off/unplug electrical appliances/use less (non-specific)	5%	12%	6%	7%
Do Laundry/use appliances in early morning, late night	8%	5%	8%	6%
Use less water/install efficient fixtures/turn down water heater	4%	2%	8%	6%
Turn down air conditioning/use fans instead	8%	5%	1%	4%
Cook less	4%	1%	6%	4%
Use more energy efficient refrigerator, other appliance	3%	2%	3%	5%
Wear more clothes/use extra blankets	2%	1%	6%	2%
Close/fix/seal doors	2%	3%	4%	0%
Hang clothes out to dry	5%	1%	1%	1%
Turn down fridge/freezer	1%	1%	0%	1%
Convert to gas/propane	1%	0%	0%	1%
Other	5%	12%	12%	13%
Don't know	2%	2%	2%	1%
Base	131	154	124	136

* Base equals number of participants reporting that additional actions have been taken to save energy at home. Percentages may sum to more than 100% as multiple mentions were allowed.

B.7 CFL INSTALLATION RATES AND HOURS OF USE

Many LIEE Program participants received one or more CFLs as part of their measure treatment. Utility representatives and energy specialists installed the bulbs for the customer during the initial visit. The survey was designed to address installation rates and hours of use for CFLs distributed through the program. The results can be used to update program assumptions, as well as highlight areas to improve program effectiveness.

Table B-14 shows, on average, how many CFLs were received when at least one CFL was distributed. As shown, PG&E and SCE participants received, on average, between four and five CFLs, whereas SDG&E participants received between two and three CFLs.

Table B-14
Number of CFLs Received (Self-Report)

	PG&E	SCE	SDG&E
Average Number Received	4.8	4.5	2.4
Min	1	1	1
Max	5	8	5
Base	211	85	212

Table B-15 reports the average installation rates for CFLs distributed through the program based on participant self-reports. As shown, of the total number of CFLs initially distributed, 85 percent are still installed in PG&E participant homes, 96 percent in SCE participant homes, and 83 percent in SDG&E participant homes.

Table B-15
Number of CFLs Currently Installed (Self-Report)

	PG&E	SCE	SDG&E
Installation Rate	85%	96%	83%
Average Number Installed	4.1	4.3	2.0
Min	0	0	0
Max	5	8	5
Base	211	85	212

Participants were asked why they were not currently using all of the CFLs distributed through the program. Over half of the participants who were not currently using all of the CFLs they received through the program (a total of 40 respondents) indicated that the CFL(s) they received had burned out. The remainder indicated that the CFLs were not currently being used because of performance issues (i.e., poor light quality or fixture fit), they did not have enough fixtures for all of the CFLs received, and/or the CFLs broke.

In addition to asking respondents how many program CFLs they currently have installed, the survey was designed to determine the average daily hours of usage for each of the CFLs currently installed. The results presented below suggest that CFL usage decreases as the number of CFLs installed increases, and certain locations are more likely than others to result in higher usage patterns. These findings should be considered more closely and taken into account when updating program assumptions.

Figure B-1 shows the breakdown of average hours of use per day by bulb. The data is presented in descending order, starting with the most used bulb. At the bottom of the figure, the average daily hours of usage over all program bulbs by utility is presented. Note that while SDG&E has on average lower average hours per usage for the third and all other bulbs, SDG&E gave out

fewer CFLs per home than the other utilities so its overall average is higher than the other utilities' averages.

Figure B-1
Average Daily Hours of Usage by Bulb

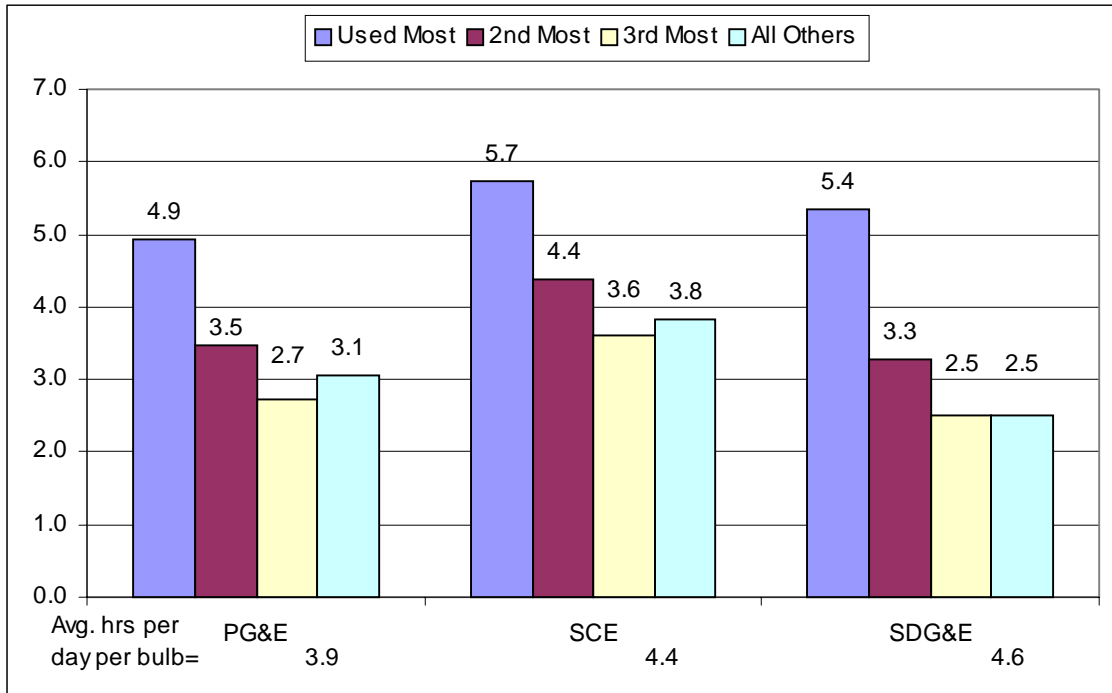
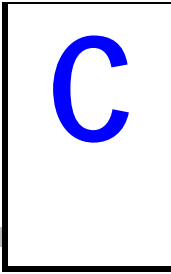


Table B-16 presents the hours of usage data by location of installation. CFLs installed outside the home are used the most often, followed by high traffic areas such as the kitchen, living room and dining room.

Table B-16
Average Hours of Usage Per Day Per Bulb By Location

Location	PG&E		SCE		SDG&E	
	Mean	N	Mean	N	Mean	N
Porch/outside	6.7	16	6.8	8	7.2	5
Kitchen	4.3	70	5.2	41	5.0	30
Living room	4.6	104	4.5	41	5.0	93
Dining room	3.7	13	4.0	8	4.1	12
Bathroom	3.1	41	4.5	23	5.0	15
Hall	3.2	14	7.3	9	6.8	5
Bedroom	3.2	72	3.5	33	2.7	60



PARTICIPANT TELEPHONE SURVEY INSTRUMENT AND FREQUENCIES

INTRO:

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

Hello, my name is ____, and I'm calling on behalf of<util1>. May I speak to<cont>?

IF NEEDED: I'm calling from the Gilmore Research Group.

REINTRODUCE IF NECESSARY: Our records show that in <MONTH> of <YEAR> your household participated in the <PROGM>. 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: <ecc> <refrg> <water> <ducts> <nonci> <ceili> <frepr> <frepl> <ec> <cfl>

N = 1000 100%

Q1:

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 10 minutes.

Q4:

I'm going to read off a list of things that might have been installed in your home as part of the <PROGRAM NAME>. Please tell me if these were installed, and whether they are still in place and working. The first is . . .

N = 876 100%

Continue..... 1 D 876 100%

Q4A:

An evaporative cooler cover? Was this installed?

=> Q4B IF NOT ECC=1

N = 110 100%

Yes..... 1 75 68%

No 2 32 29%

Don't know..... 3 3 3%

Refused 4 0 0%

Q4AA:

Is it still in place?

=> Q4B IF NOT Q4A=1

N =		75	100%
Yes	1	64	85%
No	2	9	12%
Don't know.....	3	2	3%
Refused	4	0	0%

Q6A:

Why isn't the evaporator cooler cover still in place?

=> +1 IF NOT Q4AA=2

N =		9	100%
Didn't like the way it (they) worked	01	2	22%
Wasn't in the right location	02	1	11%
Other (SPECIFY):	97 O	0	0%
Don't know.....	98 X	0	0%
Refused	99 X	0	0%
Took it down for summer/will put it back when use it	03 N	6	67%

Q4B:

Did you receive a new refrigerator?

=> Q4C IF NOT REFRG=1

N =		124	100%
Yes	1	124	100%
No	2	0	0%
Don't know.....	3	0	0%
Refused	4	0	0%

Q4BA:

Is it still in place?

=> Q4C IF NOT Q4B=1

N =		124	100%
Yes	1	124	100%
No	2	0	0%
Don't know.....	3	0	0%
Refused	4	0	0%

Q6B:

Why isn't the refrigerator still in place?

=> +1 IF NOT Q4BA=2

N =		0	100%
Didn't like the way it (they) worked	01	0	0%
Wasn't in the right location	02	0	0%
Other (SPECIFY):	97 O	0	0%
Don't know.....	98 X	0	0%
Refused	99 X	0	0%

Q4BB:

Is it still working?

=> +2 IF NOT Q4BA=1

N =	124	100%
Yes..... 1	123	99%
No..... 2	1	1%
Don't know..... 3	0	0%
Refused..... 4	0	0%

Q5B:

Why is the refrigerator not working?

=> +1 IF NOT Q4BB=2

N =	1	100%
It was damaged or broken..... 01	1	100%
Didn't like the way it worked..... 02	0	0%
Wasn't in the right location..... 03	0	0%
It cost too much to use..... 04	0	0%
Other (SPECIFY):..... 97 O	0	0%
Don't know..... 98 X	0	0%
Refused..... 99 X	0	0%

Q4C:

Were any showerheads, faucet aerators, or water heater blankets installed? NO NEED TO PROBE FOR WHICH, OR HOW MANY

=> Q4D IF NOT WATER=1

N =	662	100%
Yes..... 1	496	75%
No..... 2	159	24%
Don't know..... 3	7	1%
Refused..... 4	0	0%

Q4CA:

Are all of them still installed, most of them or just some of them? IF RECEIVED ONLY ONE: Is it still installed? IF YES, ENTER CODE 1

=> Q4D IF NOT Q4C=1

N =	496	100%
All..... 1	446	90%
Most..... 2	14	3%
Some..... 3	14	3%
None still in place..... 4	16	3%
Don't know/Not sure..... 5	5	1%
Refused..... 6	1	0%

Q6C:

Why aren't the hot water saving devices still in place?

=> +1 IF NOT Q4CA=2-4

N =		44	100%
Didn't like the way it (they) worked	01	11	25%
Wasn't in the right location	02	2	5%
They/It broke	03 N	16	36%
Bathroom burned down	04 N	1	2%
Shower head was replace with a handheld.....	05 N	1	2%
Not installed yet/never installed	06 N	2	5%
Other (SPECIFY):	97 O	0	0%
Don't know.....	98 X	10	23%
Refused.....	99 X	2	5%

Q4D:

Duct sealing? Was this installed?

=> +1 IF NOT DUCTS=1

N =		204	100%
Yes.....	1	75	37%
No	2	85	42%
Don't know.....	3	43	21%
Refused.....	4	1	0%

Q4E:

Weatherstripping, or caulking? Were any of these installed?

=> Q4F IF NOT NONCI=1

N =		711	100%
Yes.....	1	571	80%
No	2	127	18%
Don't know.....	3	12	2%
Refused.....	4	1	0%

Q4EA:

Are all of them still installed, most of them or just some of them? IF RECEIVED ONLY

ONE: Is it still installed? IF YES, ENTER CODE 1

=> Q4F IF NOT Q4E=1

N =		571	100%
ALL	1	525	92%
MOST	2	18	3%
SOME	3	17	3%
None	4	9	2%
Don't know.....	5	1	0%
Refused	6	1	0%

Q6E:

Why aren't the weatherstripping, or caulking still in place?

=> +1 IF NOT Q4EA=2-4

N =		44	100%
Didn't like the way it (they) worked	01	7	16%
Wasn't in the right location	02	4	9%
It fell off/ came loose.....	03 N	11	25%
Doesn't fit/ too thick/ too tight.....	04 N	3	7%
Poorly Installed.....	05 N	6	14%
Removed or replaced window/door.....	06 N	3	7%
Other (SPECIFY):	97 O	0	0%
Don't know.....	98 X	11	25%
Refused.....	99 X	2	5%

Q4F:

Ceiling insulation? Was this installed?

=> Q4G IF NOT CEILI=1

N =		128	100%
Yes.....	1	86	67%
No	2	36	28%
Don't know.....	3	5	4%
Refused.....	4	1	1%

Q4FA:

Is it still in place?

=> Q4G IF NOT Q4F=1

N =		86	100%
Yes.....	1	84	98%
No	2	0	0%
Don't know.....	3	2	2%
Refused.....	4	0	0%

Q6F:

Why isn't the ceiling insulation still in place?

=> +1 IF NOT Q4FA=2

N =		0	100%
Didn't like the way it (they) worked	01	0	0%
Wasn't in the right location	02	0	0%
Other (SPECIFY):	97 O	0	0%
Don't know.....	98 X	0	0%
Refused.....	99 X	0	0%

Q4G:

Did you get your furnace repaired?

=> Q4H IF NOT FREPR=1

N =	82	100%
Yes	56	68%
No	24	29%
Don't know.....	2	2%
Refused	0	0%

Q4GB:

Is your furnace still working?

=> Q4H IF NOT Q4G=1

N =	56	100%
Yes	55	98%
No	1	2%
Don't know.....	0	0%
Refused	0	0%

Q5G:

Why is the furnace not working after the repair?

=> +1 IF NOT Q4GB=2

N =	1	100%
Other (SPECIFY):	97 O	0 0%
Don't know.....	98 X	1 100%
Refused	99 X	0 0%

Q4H:

Did you receive a new furnace to replace your old one?

=> Q4I IF NOT FREPL=1

N =	85	100%
Yes	22	26%
No	61	72%
Don't know.....	2	2%
Refused	0	0%

Q4HA:

Is the new furnace still there?

=> Q4I IF NOT Q4H=1

N =	22	100%
Yes	22	100%
No	0	0%
Don't know.....	0	0%
Refused	0	0%

Q6H:

Why isn't the new furnace still there?

=> +1 IF NOT Q4HA=2

N =	0	100%
Didn't like the way it (they) worked	01	0%
Wasn't in the right location	97	0%
Other (SPECIFY):	98 O	0%
Don't know.....	99 X	0%

Q4HB:

Is your new furnace still working?

=> +1 IF NOT Q4HA=1

N =	22	100%
Yes	1	20
No	2	9%
Don't know.....	3	0%
Refused	4	0%

Q5H:

Why isn't your new furnace still working?

=> +1 IF NOT Q4HB=2

N =	2	100%
It needs to be cleaned and since my husband died there's no one to do it.....	01 N	1
One of them isn't working.....	02 N	1
Other (SPECIFY):	97 O	0%
Don't know.....	98 X	0%
Refused	99 X	0%

Q4I:

An evaporative cooler? Was this installed?

=> Q7 IF NOT EC=1

N =	86	100%
Yes	1	70
No	2	16%
Don't know.....	3	2%
Refused	4	0%

Q4IA:

Is it still in place?

=> Q7 IF NOT Q4I=1

N =	70	100%
Yes	1	66
No	2	6%
Don't know.....	3	0%
Refused	4	0%

Q6I:

Why isn't the evaporator cooler still in place?

=> +1 IF NOT Q4IA=2

N =		4	100%
Didn't like the way it (they) worked	01	1	25%
Moved it for the winter	02 N	2	50%
Wasn't in the right location	97	1	25%
Other (SPECIFY):	98 O	0	0%
Don't know.....	99 X	0	0%

Q4IB:

Is it still operating?

=> Q7 IF NOT Q4IA=1

N =		66	100%
Yes.....	1	63	95%
No	2	2	3%
Don't know.....	3	1	2%
Refused	4	0	0%

Q5I:

Why is the evaporative cooler not working?

=> +1 IF NOT Q4IB=2

N =		2	100%
Other (SPECIFY):	97 O	0	0%
Don't know.....	98 X	1	50%
Refused	99 X	1	50%

Q7:

Our records indicate that you received<# OF CFLs>light bulbs through the<PROGRAM NAME>in 2000. Is this correct?

=> Q23 IF CFLNM==0

N =		530	100%
Yes.....	1 => Q9	487	92%
No	2 => Q9	41	8%
Don't know.....	3 => Q9	2	0%
Refused	4 => Q9	0	0%

Q8:

How many did you receive?

N =		41	100%
.....	01	0	0%
.....	02	4	10%
.....	03	2	5%
.....	04	3	7%
.....	05	3	7%
NONE.....	97 => Q23	22	54%
Don't know.....	98	1	2%
Refused	99	6	15%

Q9:

Are all the program bulbs that you received currently installed in your home?

N =			508	100%
Yes	1	=> BULBS	381	75%
No	2		117	23%
Don't know.....	3	=> BULBS	4	1%
Refused	4	=> BULBS	6	1%

Q10:

How many are currently installed?

N =			117	100%
.....00			0	0%
.....01			22	19%
.....02			20	17%
.....03			10	9%
.....04			7	6%
.....05			1	1%
.....06			2	2%
96 or more.....	96		2	2%
NONE	97		42	36%
Don't know.....	98		2	2%
Refused	99		0	0%

Q11:

Why aren't all the bulbs currently installed?

N =			117	100%
Not enough fixtures for all bulbs	01		6	5%
Bulbs didn't fit in fixtures	02		9	8%
Didn't like the quality of light.....	03		12	10%
Light wasn't bright enough	04		8	7%
Light flickered when I turned it on	05		4	3%
Burned out	06		65	56%
Broken	07		10	9%
Stolen	08		0	0%
Gave to someone else	09		3	3%
Haven't had time/still in package.....	10		2	2%
Didn't look good in lamp	11		1	1%
Room burned down and lost bulbs in fire.....	12		1	1%
Other (SPECIFY):	97	O	0	0%
Don't know.....	98	X	4	3%
Refused	99	X	2	2%

Q12:

We'd like to ask a few questions about each compact fluorescent bulb still installed. Considering the bulb that you use most, about how many hours per day is it on? IF USE EQUALLY SAY: Then please choose one to describe.

N =		445	100%
Average=		5.12	
N =		445	100%
..... 1 N		26	6%
..... 2 N		42	9%
..... 3 N		60	13%
..... 4 N		63	14%
..... 5 N		60	13%
..... 6 N		48	11%
..... 7 N		17	4%
..... 8 N		16	4%
..... 9 N		3	1%
..... 10		13	3%
..... 11		4	1%
..... 12		13	3%
..... 14		3	1%
..... 20		1	0%
..... 22		1	0%
..... 24		4	1%
Less than 1 hour.....	97	33	7%
Don't know.....	98	28	6%
Refused.....	99	10	2%

Q13:

And is it usually on during weekday afternoons?

N =		445	100%
Yes..... 1		180	40%
No..... 2		249	56%
Don't know..... 3		8	2%
Refused..... 4		8	2%

Q14:

In which room is this bulb located?

N =		445	100%
Living room	01	174	39%
Bathroom	02	34	8%
Kitchen.....	03	82	18%
Bedroom	04	62	14%
Porch.....	05	18	4%
Dining room.....	06	21	5%
Hall	07	14	3%
Closet	08	0	0%
Den/office	10 N	5	1%
family room	11 N	11	2%
garage.....	12 N	3	1%
porch/outside	13 N	3	1%
laundry room.....	14 N	0	0%
basement.....	15 N	1	0%
Other (SPECIFY):	97 O	0	0%
Don't know.....	98	8	2%
Refused	99	8	2%

Q15:

Now, considering the bulb that you use next most, about how many hours per day is it on?
 IF USE EQUALLY SAY: Then please choose one , other than the previous one, to describe.

=> Q23 IF BULBS<2

Average =		3.85	
N =		347	100%
Less than 1 hour.....	97	46	13%
.....	1 N	38	11%
.....	2 N	52	15%
.....	3 N	33	10%
.....	4 N	43	12%
.....	5 N	31	9%
.....	6 N	22	6%
.....	7 N	4	1%
.....	8 N	7	2%
.....	9 N	3	1%
.....	10	6	2%
.....	11	1	0%
.....	12	3	1%
.....	22	1	0%
Don't know.....	98	42	12%
Refused	99	15	4%

Q16:

And is it usually on during weekday afternoons?

N =		347	100%
Yes	1	116	33%
No	2	194	56%
Don't know.....	3	22	6%
Refused	4	15	4%

Q17:

In which room is this bulb located?

N =		347	100%
Living room	01	80	23%
Bathroom	02	40	12%
Kitchen.....	03	55	16%
Bedroom	04	83	24%
Porch.....	05	7	2%
Dining room.....	06	19	5%
Hall	07	19	5%
Closet	08	2	1%
den/office	10 N	5	1%
family room	11 N	6	2%
garage.....	12 N	2	1%
porch/outside	13 N	0	0%
laundry room.....	14 N	2	1%
basement.....	15 N	1	0%
Other (SPECIFY):	97 O	0	0%
Don't know.....	98	13	4%
Refused	99	13	4%

Q18:

Now, considering the bulb that you use third most, about how many hours per day is it on?
 IF USE EQUALLY SAY: Then please choose one , other than the previous two, to describe.

=> Q23 IF BULBS<3

Average =		3.00	
N =		305	100%
Less than 1 hour.....	97	66	22%
.....	0	1	0%
.....	1 N	29	10%
.....	2 N	40	13%
.....	3 N	28	9%
.....	4 N	18	6%
.....	5 N	16	5%
.....	6 N	7	2%
.....	8 N	1	0%
.....	12	1	0%
.....	19	1	0%
Don't know.....	98	68	22%
Refused	99	29	10%

Q19:

And is it usually on during weekday afternoons?

N =		305	100%
Yes.....	1	81	27%
No	2	164	54%
Don't know.....	3	33	11%
Refused	4	27	9%

Q20:

In which room is this bulb located?

N =		305	100%
Living room	01	47	15%
Bathroom	02	37	12%
Kitchen.....	03	37	12%
Bedroom	04	80	26%
Porch.....	05	10	3%
Dining room.....	06	4	1%
Hall	07	8	3%
Closet	08	1	0%
Den/office	10 N	3	1%
Family room	11 N	2	1%
Garage.....	12 N	3	1%
porch/outside	13 N	1	0%
laundry room.....	14 N	3	1%
basement	15 N	1	0%
storage room	16 N	1	0%
sewing room	17 N	1	0%
Other (SPECIFY):	97 O	0	0%
Don't know.....	98	36	12%
Refused	99	30	10%

Q21:

For the remaining program bulbs that are still installed, on average about how many hours per day are they on for?

=> Q23 IF BULBS<4

Average =		3.24	
N =		253	100%
Less than 1 hour.....	97	59	23%
.....	0	2	1%
.....	1 N	19	8%
.....	2 N	29	11%
.....	3 N	20	8%
.....	4 N	6	2%
.....	5 N	10	4%
.....	6 N	5	2%
.....	7 N	1	0%
.....	8 N	1	0%
.....	9 N	3	1%
.....	10	1	0%
.....	12	1	0%
.....	16	1	0%
Don't know.....	98	59	23%
Refused	99	36	14%

Q22:

And are any of these bulbs usually on during weekday afternoons?

N =		253	100%
Yes.....	1	58	23%
No	2	130	51%
Don't know.....	3	35	14%
Refused	4	30	12%

Q23:

We'd like to ask you a few questions related to the evaporative cooler you received from<UTILITY NAME>. Did you have a working air conditioner before you received the evaporative cooler from<UTILITY NAME>?

=> Q28 IF NOT Q4I=1

N =	70	100%
Yes..... 1	65	93%
No..... 2	5	7%
Don't know..... 3	0	0%
Refused..... 4	0	0%

Q24:

ENTER ALL THAT APPLY

What type(s) of air conditioner(s) did you have before the<UTILITY NAME>evaporative cooler was installed?

=> +1 IF NOT Q23=1

N =	65	100%
A central air conditioner..... 01	44	68%
One or more room air conditioners..... 02	6	9%
Another evaporative cooler..... 03	3	5%
Water cooler..... 04	2	3%
Other (SPECIFY):..... 97 O	0	0%
Don't know..... 98 X	9	14%
Refused..... 99 X	1	2%

Q25:

Now that you have the evaporative cooler do you cool your home more, less, or about the same as you did prior to receiving the evaporative cooler?

=> +1 IF NOT Q4IB=1

N =	63	100%
More..... 1	28	44%
Less..... 2	9	14%
About the same..... 3	25	40%
Don't know..... 4	1	2%
Refused..... 5	0	0%

Q28:

Did you have a working furnace before <UTILITY NAME> <replace/repaired>your furnace?

=> Q30 IF NOT Q4G=1 AND NOT Q4H=1

N =	74	100%
Yes..... 1	25	34%
No..... 2	47	64%
Don't know..... 3	2	3%
Refused..... 4	0	0%

Q29:

Do you heat your home more, less, or about the same as you did prior to< receiving the new furnace /having your furnace repaired>?

=> +1 IF NOT Q4IB=1

N =	2	100%
More	0	0%
Less	0	0%
About the same	2	100%
Don't know	0	0%
Refused	0	0%

Q30:

Now I'd like to ask you some questions about your home. Approximately how old is your home?

N =	1000	100%
Under 10 years old	36	4%
10-20 years old	161	16%
21-30 years old	162	16%
Over 30 years old	451	45%
Don't know	189	19%
Refused	1	0%

Q31:

How many rooms are there in your home, not counting bathrooms, garages, and halls? DO NOT COUNT UNHEATED BASEMENT AREAS

Average =	4.70	
N =	1000	100%
..... 1	25	3%
..... 2	120	12%
..... 3	203	20%
..... 4	238	24%
..... 5	235	24%
..... 6	127	13%
..... 7	34	3%
..... 8	9	1%
..... 9	1	0%
..... 10	1	0%
..... 14	1	0%
Don't know	2	0%
Refused	4	0%

Q32:

Approximately how many square feet of living space are in your home, not including the garage?

N =	1000	100%
Under 500 square feet..... 01	42	4%
500-750 square feet..... 02	52	5%
751-1000 square feet..... 03	92	9%
1001-1500 square feet..... 04	155	16%
1501-2000 square feet..... 05	69	7%
2001-2500 square feet..... 06	16	2%
2501-3000 square feet..... 07	7	1%
Over 3000 square feet..... 08	5	1%
Don't know..... 98	560	56%
Refused..... 99	2	0%

Q33:

How many people currently live in your home, including yourself and any children?

Average =	3.60	
N =	1000	100%
..... 1	280	28%
..... 2	232	23%
..... 3	113	11%
..... 4	134	13%
..... 5	107	11%
..... 6	78	8%
..... 7	30	3%
..... 8	12	1%
..... 9	5	1%
..... 10	1	0%
..... 11	1	0%
..... 12	1	0%
Don't know..... 98	3	0%
Refused..... 99	3	0%

Q34:

How many people lived in your home in 1999, including yourself and any children?

Average =	4.49	
N =	1000	100%
..... 1	255	26%
..... 2	235	24%
..... 3	120	12%
..... 4	131	13%
..... 5	115	12%
..... 6	64	6%
..... 7	37	4%
..... 8	14	1%
..... 9	6	1%
..... 10	3	0%
..... 11	2	0%
..... 12	1	0%
..... 13	2	0%
..... 33	1	0%
Don't know..... 98	10	1%
Refused..... 99	4	0%

Q35:

Is someone usually at home during the day for three or more weekdays per week?

N =		1000	100%
Yes	1	797	80%
No	2	187	19%
Don't know.....	3	11	1%
Refused	4	5	1%

Q36:

Do you have air conditioning in your home?

=> +2 IF Q4I=1

N =		934	100%
Yes	1	437	47%
No	2	497	53%
Don't know.....	3	0	0%
Refused	4	0	0%

Q37:

What type(s) of air conditioner(s) do you have?

=> +1 IF NOT Q36=1

N =		437	100%
A central air conditioner	01	179	41%
One or more room air conditioners	02	83	19%
Another evaporative cooler.....	03	71	16%
Heat pump.....	04	6	1%
Swamp cooler	05 N	9	2%
water cooler	06 N	1	0%
forced air.....	07 N	5	1%
wall mounted	08 N	6	1%
Other (SPECIFY):	97 O	6	1%
Don't know.....	98 X	76	17%
Refused	99 X	0	0%

Q38:

What is the primary type of fuel that is used for heating your home?

N =		1000	100%
Electricity.....	01	177	18%
Natural gas	02	665	67%
Propane	03	12	1%
Wood	04	17	2%
No space heating.....	05	82	8%
Other (SPECIFY):	97 O	5	1%
Don't know.....	98	40	4%
Refused	99	2	0%

Q39:

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

N =		1000	100%
Electricity..... 01		115	12%
Natural gas..... 02		773	77%
Propane..... 03		9	1%
Solar..... 04		1	0%
Other (SPECIFY):..... 97 O		4	0%
Don't know..... 98		96	10%
Refused..... 99		2	0%

Q40A:

READ 1-96. UP TO 7 RESPONSES

Have you ADDED any appliances since 1999, such as an electric blanket, air conditioner, electric clothes dryer, freezer, extra refrigerator, heated waterbed or any other major appliances? IF YES TO ANY OF THESE: This was a new or additional one, not a replacement for one you already had? IMPORTANT - DOES NOT COUNT IF IT WAS A REPLACEMENT FOR ONE THEY ALREADY HAD - PLEASE CLARIFY

N =		1000	100%
Electric blanket..... 01		14	1%
Air conditioner..... 02		20	2%
Electric clothes dryer..... 03		40	4%
Freezer..... 04		14	1%
Extra refrigerator..... 05		43	4%
Heated waterbed..... 06		2	0%
washer..... 07 N		14	1%
Stove/Oven..... 08 N		12	1%
TV..... 09 N		3	0%
Computer..... 10 N		7	1%
dishwasher..... 11 N		5	1%
window cooler..... 12 N		1	0%
microwave..... 13 N		8	1%
Cooler..... 14 N		3	0%
fan..... 15 N		3	0%
Heater..... 16 N		3	0%
Gas washer/dryer..... 17 N		2	0%
Electric Boiler/Furnace..... 18 N		2	0%
Or some other major appliance..... 96 O		10	1%
None of the above - DO NOT READ..... 88 X => Q41A	812	81%	
Don't know/Not sure - DO NOT READ..... 98 X => Q41A	14	1%	
Refused - DO NOT READ..... 99 X => Q41A	3	0%	

Q40AA:

Was the electric blanket added before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q40A=01

N =		14	100%
Before..... 1		1	7%
After..... 2		9	64%
About the same time..... 3		3	21%
Don't know..... 4		1	7%
Refused..... 5		0	0%

Q40B:

Was the air conditioner added before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q40A=02

N =	19	100%
Before	7	37%
After.....	10	53%
About the same time	1	5%
Don't know.....	0	0%
Refused	1	5%

Q40C:

Was the electric clothes dryer added before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q40A=03

N =	35	100%
Before	12	34%
After.....	15	43%
About the same time	6	17%
Don't know.....	1	3%
Refused	1	3%

Q40D:

Was the freezer added before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q40A=05

N =	14	100%
Before	3	21%
After.....	8	57%
About the same time	2	14%
Don't know.....	1	7%
Refused	0	0%

Q40E:

Was the extra refrigerator added before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q40A=05

N =	40	100%
Before	9	23%
After.....	26	65%
About the same time	4	10%
Don't know.....	0	0%
Refused	1	3%

Q40F:

Was the heated waterbed added before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q40A=06

N =	2	100%
Before	0	0%
After.....	1	50%
About the same time	0	0%
Don't know.....	0	0%
Refused	1	50%

Q40G:

(Was)/(Were) <q40a:o>added before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q40A=96

N =	71	100%
Before	17	24%
After.....	43	61%
About the same time	7	10%
Don't know.....	4	6%
Refused	0	0%

Q41A:

READ 1-96. UP TO 7 RESPONSES

Have you REMOVED any appliances since 1999, such as an electric blanket, air conditioner, electric clothes dryer, freezer, extra refrigerator, heated waterbed or any other major appliances? IF YES: What have you removed? VERIFY: And you removed it without replacing it with another one? DOES NOT COUNT IF REPLACED WITH ANOTHER

N =	1000	100%	
Electric blanket.....	01	2	0%
Air conditioner.....	02	1	0%
Electric clothes dryer	03	5	1%
Freezer	04	11	1%
Extra refrigerator	05	14	1%
Heated waterbed	06	3	0%
washer.....	07	2	0%
stove/oven	08	5	1%
TV	09	2	0%
computer	10	1	0%
Dishwasher	11	2	0%
Window cooler.....	12	1	0%
Microwave	13	3	0%
Cooler	14	0	0%
Fan	15	0	0%
Heater.....	16	1	0%
Furnace	17	2	0%
Water filter.....	18	1	0%
Or some other major appliance	96	0	0%
None of the above - DO NOT READ	88	X => Q42	912 91%
Don't know/Not sure - DO NOT READ	98	X => Q42	24 2%
Refused - DO NOT READ	99	X => Q42	11 1%

Q41AA:

Was the electric blanket removed before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q41A=01

N =	2	100%
Before	0	0%
After.....	2	100%
About the same time	0	0%
Don't know.....	0	0%
Refused	0	0%

Q41B:

Was the air conditioner removed before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q41A=02

N =	1	100%
Before	0	0%
After.....	1	100%
About the same time	0	0%
Don't know.....	0	0%
Refused	0	0%

Q41C:

Was the electric clothes dryer removed before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q41A=03

N =	4	100%
Before	0	0%
After.....	3	75%
About the same time	0	0%
Don't know.....	1	25%
Refused	0	0%

Q41D:

Was the freezer removed before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q41A=05

N =	9	100%
Before	3	33%
After.....	6	67%
About the same time	0	0%
Don't know.....	0	0%
Refused	0	0%

Q41E:

Was the extra refrigerator removed before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q41A=05

N =	14	100%
Before	2	14%
After.....	9	64%
About the same time	2	14%
Don't know.....	1	7%
Refused	0	0%

Q41F:

Was the heated waterbed removed before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q41A=06

N =	3	100%
Before	1	33%
After.....	2	67%
About the same time	0	0%
Don't know.....	0	0%
Refused	0	0%

Q41G:

(Was)/(Were) <q41a:o>removed before, after or about the same time you participated in the <PROGRAM NAME>?

=> +1 IF NOT Q41A=96

N =	23	100%
Before	3	13%
After.....	15	65%
About the same time	5	22%
Don't know.....	0	0%
Refused	0	0%

Q42:

Have there been any other changes in your family or your house since 1999 that might have increased your energy consumption? IF YES: Such as?

N =			1000	100%
Yes (SPECIFY):	01	O	0	0%
No	02	X	869	87%
New baby/new family member/added resident of household	03	XN	50	5%
New appliance/device (misc.)	04	XN	23	2%
Television	05	XN	3	0%
Computer	06	XN	10	1%
Dishwasher	07	XN	1	0%
Washer and/or dryer	08	XN	0	0%
Microwave	09	XN	1	0%
Water heater	10	XN	0	0%
Stove/range	11	XN	1	0%
Using low wattage/energy efficient light bulbs	12	XN	2	0%
Refrigerator	13	XN	2	0%
Something broke/old/faulty equipment	15	XN	7	1%
Illness/old age requires more heat/oxygen machine	14	XN	13	1%
Using more lights	16	XN	1	0%
Cooking more	17	XN	1	0%
Room addition, now have 3 bedrooms instead of 2	18	XN	1	0%
Running business/took ownership of apartments, so we're here more..	19	XN	2	0%
Children are older/bigger and using more energy	20	XN	3	0%
Don't know	98	X	15	2%
Refused	99	X	2	0%

Q43:

Have there been any other changes in your family or your house since 1999 that might have decreased your energy consumption? IF YES: Such as?

N =		1000	100%
Yes (SPECIFY):	01 O	0	0%
No	02	787	79%
Family member moved out/fewer residents.....	03 N	53	5%
Conserve more (general).....	05 N	22	2%
Turn off lights.....	06 N	21	2%
Turn down heat.....	07 N	8	1%
Use less air conditioning/use fans more.....	08 N	12	1%
Running appliances at night instead of during peak hours, during the day	10 N	4	0%
Got rid of non-energy efficient appliance.....	11 N	2	0%
Miscellaneous conservation measures (turn off TV, filter, shut doors, use dishwasher less, others)	12 N	39	4%
Disconnecting appliances when not in use	13 N	4	0%
Energy saving appliances/additions.....	20 N	10	1%
Weather stripping.....	21 N	5	1%
Refrigerator.....	22 N	16	2%
Cooler/swamp cooler/fans	23 N	6	1%
CFLs/bulbs.....	24 N	11	1%
New windows	25 N	3	0%
New appliances.....	26 N	2	0%
Got gas appliance.....	27 N	3	0%
Low flow faucet aerators	28 N	1	0%
People not at home as much/go to work/school.....	30 N	18	2%
Don't know.....	98	11	1%
Refused	99	0	0%

Q44:

DO NOT READ! ENTER ALL THAT APPLY. CLARIFY IF UNCLEAR

Now I have a few questions regarding your participation. How did you hear about the<PROGRAM NAME>?

N =		1000	100%
Someone knocked on my door.....	01	291	29%
Someone left a flyer on my doorstep/door knob.....	02	59	6%
Utility bill insert/mailer	03	156	16%
Neighbor/friend/family member	04	232	23%
I called the Utility	05	47	5%
The utility called me	06	56	6%
TV/radio.....	07 N	12	1%
Newspaper	08 N	20	2%
Manager/apartment office/landlord	09 N	28	3%
Was in the program before.....	10 N	3	0%
Clubhouse/ homeowners association	11 N	6	1%
Gas company/gasman	12 N	4	0%
Senior Center	13 N	6	1%
Other (SPECIFY):	97 O	21	2%
Don't know.....	98 X	103	10%
Refused	99 X	2	0%

RECED:

Number of measures received non-CFL

N =	1000	100%
..... 0	124	12%
..... 1	190	19%
..... 2	303	30%
..... 3	218	22%
..... 4	112	11%
..... 5	33	3%
..... 6	13	1%
..... 7	5	1%
..... 8	2	0%
..... 9	0	0%

Q45A:

Can you describe your satisfaction with the following elements of the program. First, the process to sign you up for the program, where you filled out forms and provided income documents? Were you completely satisfied, somewhat satisfied, not very satisfied or not at all satisfied?

N =	1000	100%
Completely satisfied	754	75%
Somewhat satisfied	144	14%
Not very satisfied	15	2%
Not at all satisfied	10	1%
Don't know/Not sure	72	7%
Refused	5	1%

Q45B:

What about your experience with the outreach workers who collected the forms? IF NEEDED: Were you completely satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?

N =	1000	100%
Completely satisfied	745	75%
Somewhat satisfied	115	12%
Not very satisfied	10	1%
Not at all satisfied	8	1%
Don't know/Not sure	120	12%
Refused	2	0%

Q45C:

And the amount of time it took from being first contacted to receiving measures? IF NEEDED: Were you completely satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?

=> +1 IF RECED<1

N =	876	100%
Completely satisfied	619	71%
Somewhat satisfied	142	16%
Not very satisfied	27	3%
Not at all satisfied	10	1%
Don't know/Not sure	76	9%
Refused	2	0%

Q45D:

And your experience with the people who came to your home to install the measures? IF NEEDED: Were you completely satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?

=> +1 IF RECED<1		
N =	876	100%
Completely satisfied	719	82%
Somewhat satisfied	84	10%
Not very satisfied	24	3%
Not at all satisfied	21	2%
Don't know/Not sure	27	3%
Refused	1	0%

Q45E:

And the free measures that were installed in your home? IF NEEDED: Were you completely satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?

N =	1000	100%
Completely satisfied	805	81%
Somewhat satisfied	127	13%
Not very satisfied	19	2%
Not at all satisfied	14	1%
Don't know/Not sure	33	3%
Refused	2	0%

Q46:

DO NOT READ! ONE RESPONSE ONLY!

Next, what do you feel was the MOST IMPORTANT benefit from participating in the<PROGRAM NAME>? IF MULTIPLE, CLARIFY: Which do you feel is the MOST important benefit? IF EQUIPMENT/FREE EQUIPMENT, PROBE: How did you benefit from the equipment you received?

N =		1000	100%
Free equipment/home improvement/measures/free stuff.....	01	296	30%
Lower utility bill/save money	02	368	37%
Education on energy usage	03	44	4%
Goal-setting session on how to reduce energy usage.....	04	8	1%
More comfortable home/warmer/less drafty.....	05	110	11%
Safer home/secure.....	06	23	2%
Healthier home.....	07	4	0%
Weather stripping/caulking.....	08 N	6	1%
Insulation	09 N	3	0%
Saving energy/more energy efficient	10 N	18	2%
Save, use less electricity	11 N	4	0%
Save, use less gas	12 N	1	0%
Light bulbs/brighter light bulbs/free light bulbs	13 N	5	1%
Keep cooler/evaporative cooler	14 N	0	0%
New Refrigerator	15 N	2	0%
Fixed door.....	16 N	4	0%
Fixed window	17 N	0	0%
Clean furnace/filter/duct	18 N	3	0%
Showed concern/caring.....	19 N	7	1%
None/nothing/no benefit/same as before	20 N	6	1%
All of the benefits are important/everything	30 N	3	0%
Other (SPECIFY):	97 O	16	2%
Don't know.....	98	68	7%
Refused	99	1	0%

Q47:**DO NOT READ! PROBE AND ENTER ALL THAT APPLY.**

How else did you benefit?

=> +1 IF Q46=98-99

N =		931	100%
Free equipment/home improvement/measures/free stuff.....	01	190	20%
Lower utility bill/save money	02	154	17%
Education on energy usage	03	38	4%
Goal-setting session on how to reduce energy usage.....	04	18	2%
More comfortable home/warmer/less drafty.....	05	141	15%
Safer home/secure.....	06	27	3%
Healthier home.....	07	19	2%
Weather stripping/caulking.....	08 N	4	0%
Insulation	09 N	1	0%
Saving energy/more energy efficient	10 N	7	1%
Save, use less electricity	11 N	1	0%
Save, use less gas.....	12 N	0	0%
Light bulbs/brighter light bulbs/free light bulbs	13 N	9	1%
Keep cooler/evaporative cooler	14 N	3	0%
New Refrigerator	15 N	2	0%
Fixed door.....	16 N	3	0%
Fixed window	17 N	3	0%
Clean furnace/filter duct	18 N	2	0%
showed concern/caring	19 N	3	0%
Nothing/no same/same as before	20 N	0	0%
Use less water/conserve water	21 N	2	0%
NONE/No other benefits	88 X	219	24%
Other (SPECIFY):	97 O	13	1%
Don't know.....	98 X	153	16%
Refused	99 X	5	1%

Q48:

Have you noticed any change in the comfort levels in your home as a result of the <PROGRAM NAME>home improvements? IF YES: Has your comfort increased or decreased?

N =		1000	100%
Yes, increased comfort	1	583	58%
Yes, decreased comfort.....	2	19	2%
No	3	362	36%
Don't know.....	4	36	4%
Refused	5	0	0%

Q50:

Have you noticed any change in your utility bill since participating in the program? IF

YES: Has your bill gone up or gone down?

N =		1000	100%
Yes, bill has gone UP.....	1	100	10%
Yes, bill has gone DOWN	2	592	59%
No	3	244	24%
Don't know.....	4	64	6%
Refused	5	0	0%

Q51:

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

N =	1000	100%
Yes	740	74%
No	194	19%
Don't know.....	64	6%
Refused	2	0%

Q53:**READ 1-4**

How informative did you find the energy education information, including the packet with brochures that you received? Was it...

N =	1000	100%
Very informative.....	634	63%
Somewhat informative.....	215	22%
Not very informative.....	15	2%
or, Not at all informative?.....	10	1%
Don't remember receiving education/packet-DO NOT READ.....	85	9%
Don't know-DO NOT READ.....	41	4%
Refused-DO NOT READ	0	0%

Q54:**READ 1-4**

How knowledgeable do you feel the <UTILITY NAME> representative was about how you could save energy? Would you say. . .

N =	1000	100%
Very knowledgeable.....	715	72%
Somewhat knowledgeable	172	17%
Not very knowledgeable.....	13	1%
or, Not at all knowledgeable?	11	1%
Don't know - DO NOT READ.....	89	9%
Refused - DO NOT READ	0	0%

Q55:

Do you continue to use the information you received in the energy education portion of the program?

N =	1000	100%
Yes	770	77%
No	157	16%
Don't know.....	69	7%
Refused	4	0%

Q57:

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

N =	1000	100%
Yes	545	55%
No	441	44%
Don't know.....	11	1%
Refused	3	0%

Q58:

Please describe what you have done.

=> +1 IF NOT Q57=1

N =		545	100%
Close/fix/seal doors	19 N	11	2%
Turn off lights	02 NO	212	39%
Replace light bulbs	03 NO	43	8%
Turn off/unplug electrical appliances/use less (non-specific).....	04 NO	42	8%
Turn off/unplug appliance/use less (misc.)	05 NO	26	5%
Turn off TV	06 NO	22	4%
Change/fix/close/seal/cover windows.....	07 NO	47	9%
Turn down heat/turn off heat at night	08 NO	53	10%
Turn down air conditioning/use fans instead	09 NO	25	5%
Turn down fridge/freezer	10 NO	3	1%
Do Laundry/use appliances in early morning, late night	11 NO	37	7%
Use more energy efficient refrigerator, other appliance	12 NO	18	3%
Hang clothes out to dry	13 NO	9	2%
Wear more clothes/use extra blankets.....	14 NO	13	2%
Use less water/install efficient fixtures	20 NO	8	1%
Use less hot water/turn down water heater	15 NO	17	3%
Careful/watch/save energy consumption (general).....	16 NO	56	10%
Convert to gas/propane	17 NO	2	0%
Cook less.....	18 NO	19	3%
Other	97 NO	59	11%
Don't know.....	98 X	8	1%
Refused	99 X	5	1%

Q59A:

We're nearly done... I'd like you to rate the following services that you may have received through participating in the<PROGRAM NAME>. Please rate each service in terms of value on a scale from 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 . . . The information about other utility and state assistance programs? IF RESPONDENT CAN'T REMEMBER IF THEY RECEIVED SERVICE, RECORD AS "DON'T KNOW".

N =		1000	100%
1-Little value.....	1	33	3%
2	2	30	3%
3	3	91	9%
4	4	133	13%
5-Very high value	5	377	38%
Didn't receive.....	6	229	23%
Don't know/Not sure	7	107	11%
Refused	8	0	0%

Q59B:

(Please rate the following services that you may have received through participating in the<PROGRAM NAME>.) And how would you rate the brochures on general ways to save energy in your home? IF RESPONDENT CAN'T REMEMBER IF THEY RECEIVED SERVICE, RECORD AS "DON'T KNOW".

N =	1000	100%
1-Little value..... 1	22	2%
2..... 2	16	2%
3..... 3	86	9%
4..... 4	204	20%
5-Very high value 5	553	55%
Didn't receive..... 6	64	6%
Don't know/Not sure..... 7	54	5%
Refused..... 8	1	0%

Q59C:

(I'd like you to rate the following services that you may have received through participating in the<PROGRAM NAME>.) And how would you rate the discussion with the <UTILITY NAME> representative on specific things you can do to save energy in your home? IF RESPONDENT CAN'T REMEMBER IF THEY RECEIVED SERVICE, RECORD AS "DON'T KNOW".

=> +1 IF NOT UTILY=1 3

N =	500	100%
1-Little value..... 1	15	3%
2..... 2	8	2%
3..... 3	37	7%
4..... 4	95	19%
5-Very high value 5	279	56%
Didn't receive..... 6	34	7%
Don't know/Not sure..... 7	31	6%
Refused..... 8	1	0%

Q59D:

(I'd like you to rate the following services that you may have received through participating in the<PROGRAM NAME>.) And how would you rate your enrollment in CARE? IF NEEDED: The CARE program gives a special rate for low income residents on their energy bills. IF RESPONDENT CAN'T REMEMBER IF THEY RECEIVED SERVICE, RECORD AS "DON'T KNOW".

N =	1000	100%
1-Little value..... 1	11	1%
2..... 2	19	2%
3..... 3	64	6%
4..... 4	149	15%
5-Very high value 5	587	59%
Didn't receive..... 6	109	11%
Don't know/Not sure..... 7	61	6%
Refused..... 8	0	0%

Q59E:

(Please rate the following services that you may have received through participating in the<PROGRAM NAME>.) And how would you rate the energy survey report containing recommendations that you received in the mail one to two weeks after the initial visit? IF RESPONDENT CAN'T REMEMBER IF THEY RECEIVED SERVICE, RECORD AS "DON'T KNOW".

=> +1 IF NOT UTILY=1		
N =	250	100%
1-Little value..... 1	6	2%
2..... 2	4	2%
3..... 3	15	6%
4..... 4	38	15%
5-Very high value 5	122	49%
Didn't receive..... 6	29	12%
Don't know/Not sure..... 7	36	14%
Refused..... 8	0	0%

Q59F:

(Please rate the following services that you may have received through participating in the<PROGRAM NAME>.) Finally, how would you rate the installation of energy saving measures. IF RESPONDENT CAN'T REMEMBER IF THEY RECEIVED SERVICE, RECORD AS "DON'T KNOW".

N =	1000	100%
1-Little value..... 1	27	3%
2..... 2	28	3%
3..... 3	63	6%
4..... 4	158	16%
5-Very high value 5	689	69%
Didn't receive..... 6	9	1%
Don't know/Not sure..... 7	26	3%
Refused..... 8	0	0%

GENDR:

DO NOT ASK!

RECORD GENDER

N =	1000	100%
Male..... 1	279	28%
Female..... 2	721	72%

LANG:

THE INTERVIEWER WAS DONE IN:

N =	1000	100%
English..... 1	771	77%
Spanish..... 2	229	23%