

**PHASE 4 MARKET EFFECTS  
STUDY OF CALIFORNIA  
RESIDENTIAL LIGHTING AND  
APPLIANCE PROGRAM**

**FINAL**

**Prepared for**

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This report presents the results of the Phase 4 Evaluation of the California Statewide Residential Lighting and Appliance Program. Program years analyzed in this study include 1999, 2000, and 2001.

## **1.1 OVERVIEW OF OBJECTIVES AND APPROACH**

This study was planned as part of a four-phase evaluation effort:

- The Phase 1 report (December 1999) measured key baseline market indicators and characterized the market for the relevant appliances and lighting products.
- The Phase 2 report (September 2000) included a study and documentation of the rationale behind the new PY2000 Program (i.e., what was planned, why it changed, and the reasons for making those changes).
- The Phase 3 report focused on the evaluation of PY2000 and measured the same market indicators addressed in Phase 1, as well as additional relevant indicators, to quantify changes over baseline measurements.
- This Phase 4 effort was designed to address these same indicators, with the focus on measuring market effects attributable to the PY2001 program.

Overall, this evaluation was designed to follow a theory-driven approach. Initial program theories and hypotheses developed in Phase 1 of this effort have formed the basis of the market effects evaluations conducted as part of the Phase 3 and Phase 4 efforts.

The following summarizes key data collection and analysis components of each phase of the evaluation:

- In Phase 1, data were gathered from four sources: customers, retail stores via mystery shoppers, retail stores managers, and in-depth interviews with utility program staff and the implementation contractor.
- The Phase 2 effort involved an extensive review of program materials, utility filings, correspondence, related documentation, and tracking data, and interviews with members of the implementation team.
- Phase 3 involved data collection from three sources: an appliance floor stock survey, a follow-up mystery shopper survey, and a follow-up retail store manager survey.
- Phase 4 data collection included customer surveys, mystery shops, and manufacturer and retailer interviews.

## 1.2 PROGRAM DESCRIPTIONS

### *Lighting Programs*

Over 10 million compact fluorescent lamps (CFLs) were provided at reduced cost or no cost to California residents in 2001. Utilities and the state sponsored ambitious programs, costing over \$40 million, to encourage residents to conserve energy through the replacement of incandescent bulbs with CFLs. Utilities also offered programs that provided free or reduced-cost CFL torchieres and CFL hard-wired fixtures. Table 1-1 summarizes the major CFL programs offered in California in 2001.

**Table 1-1  
Summary of Major 2001 CFL Programs, by Sponsor**

<b>Program Type</b>	<b>PG&amp;E</b>	<b>SCE</b>	<b>SDG&amp;E</b>	<b>Powerwalk</b>	<b>Total</b>
Giveaways	4,500	34,000	18,000	1,900,000	<b>1,956,500</b>
Incentive/Buy-down	7,146,500	357,000	18,000	-	<b>7,521,500</b>
Direct Install (MF)	130,000	439,000	52,000	-	<b>521,000</b>
Other EE Program	0	27,500	700	-	<b>28,200</b>
<b>Total</b>	<b>7,281,000</b>	<b>857,500</b>	<b>88,700</b>	<b>1,900,000</b>	<b>10,127,200</b>

### *Appliance Programs*

About 200,000 ENERGY STAR<sup>®</sup> appliances were rebated by utilities in 2001 through their energy-efficient appliance programs. Many consumers opted to replace an old or inoperable appliance with an ENERGY STAR<sup>®</sup> appliance to aid in statewide conservation efforts and to decrease their utility bills. The utility-provided cash incentives diminished the effect of the higher up-front cost of buying efficient appliances, and helped consumers identify energy-efficient products through promotion and endorsement of the ENERGY STAR<sup>®</sup> label. Statewide promotional efforts by the IOUs assisted retailers in advertising the benefits of purchasing ENERGY STAR<sup>®</sup>-labeled products. Table 1-2 provides a summary of the appliance rebate programs offered by PG&E, SCE, and SDG&E.

**Table 1-2  
Summary of Major 2001 Appliance Rebate Programs, by Sponsor**

<b>Appliance Rebated</b>	<b>PG&amp;E</b>	<b>SCE</b>	<b>SDG&amp;E</b>	<b>Total</b>
Refrigerator	55,593	44,000	30,000	<b>129,593</b>
Clothes washer	30,000	0	8,000	<b>38,000</b>
Dishwasher	24,000	0	7,700	<b>31,700</b>
Room AC	1,400	200	400	<b>2,000</b>
<b>Total</b>	<b>110,993</b>	<b>44,200</b>	<b>46,100</b>	<b>201,293</b>



### 1.3 RESULTS SUMMARY

#### *Market Effects*

Market shares in California have increased substantially over time for ENERGY STAR<sup>®</sup> appliances and lighting products. These increases are ultimate or lagging indicators of market effects, and are summarized below:

- **Appliances:** Market share for ENERGY STAR<sup>®</sup> qualified appliances has steadily increased over time, as shown in Table 1-3:

**Table 1-3**  
**Annual ENERGY STAR<sup>®</sup> Appliance Market Share**  
*1998-2000*

Appliance	Annual Market Share		
	1998	1999	2000
Refrigerators	17%	26%	30%
Clothes Washers	12%	18%	19%
Dishwashers	17%	29%	32%
Room AC	7%	20%	12%

Source: California Residential Efficiency Market Share Tracking: Appliances 2001, RER Inc., September 2001.

- **Lighting:** The average CFL market share in California in 2001 was 5.7 percent, representing a dramatic increase over time. Before 2001, CFL market shares steadily increased from 0.8 percent in the last half of 1998 to 1.2 percent in the last quarter of 2000. In addition, CFL sales in California have significantly outpaced sales in the rest of the U.S – fourth quarter 2001 data show that the national CFL market share is just over 2 percent. Data on compact fluorescent hard-wired fixtures suggest that market share is increasing in the new construction segment, while data on torchiere market share trends is unavailable.

This study was designed to measure changes in proximate or leading indicators, as summarized below:

- Awareness of energy efficiency in general and energy-efficient products and technologies has increased over time.
- Attitudes have improved towards energy efficiency in general, energy efficiency as a product attribute, and energy-efficient product performance and cost savings potential.
- Self-reported energy-efficient behaviors have increased over time, including both perceptions of general energy efficiency behavior and with regard to the purchase of specific energy efficient products.

- Availability has increased for energy-efficient products in general and with a broad array of features and brands.
- Exposure of energy-efficient products has improved over time through retailer in-store promotions and salesperson discussions.

Many outside influences acted on consumers in 2001 to make them more aware of energy efficiency, to improve their attitudes and inclinations towards energy conservation behavior, and to encourage energy efficient purchases. These same influences also encouraged manufacturers, distributors, and retailers to stock more energy efficient units, to display them more prominently, and to promote them more vigorously through salesperson discussions and in-store advertising.

The major outside influences that affected market behavior during 1998-2001 are as follows:

- California's energy crisis
- The ENERGY STAR<sup>®</sup> labeling program
- State of California energy-efficiency programs
- Retailer promotions
- Utility rebate programs
- Utility upstream programs.

While the energy crisis and its accompanied media attention clearly led to heightened awareness of conservation, other external factors acted to take full advantage of consumers' increased willingness to invest in energy efficiency, which ultimately resulted in increased market shares. While the State's intensive Flex Your Power campaign influenced the general population to "do their part" in undertaking easy, common sense-based behavioral actions at home, ultimately retailer exposure, rebates, and the threat of higher electricity bills caused most appliance purchasers to invest in energy efficiency because they were convinced that such investments were financially sound.

Supplier ability to meet the increased demand was key to turning consumer willingness to purchase efficient products into actual purchases, as ENERGY STAR<sup>®</sup>-labeled appliances and CFLs were available to all who sought them, and also were available with desirable features and would meet most applications. Prior and current utility programs directed at the upstream market are to be credited with ensuring adequate availability of energy-efficient products and equipping local retailers with the tools necessary to effectively promote these products.

## 2.1 BACKGROUND

In 1997, the California Public Utilities Commission (CPUC) declared that the purpose of energy-efficiency programs should be to transform the market so that individual customers and suppliers in the future competitive market will make more rational choices. Pacific Gas & Electric (PG&E), Southern California Edison (SCE), Southern California Gas Company (SoCalGas), and San Diego Gas & Electric (SDG&E) developed designs for the 1999 portfolio of energy-efficiency programs, with the major programs being statewide. One of these statewide market transformation programs was the California Residential Lighting and Appliance Program (CRLAP), which was designed to improve the availability, promotion, and sales of energy-efficient residential lighting and appliances by inducing sustained changes in the behavior of market participants. This program continued through December 2001.

To supplement this statewide effort, utility-specific programs and strategies were introduced in PY2001 to achieve the more immediate-term objective of energy savings. While the statewide effort was not discontinued, it was severely reduced in terms of its scope and budget. The programs (both statewide and utility-specific), as implemented in PY2001, are the focus of this XENERGY-led market effects evaluation.

## 2.2 OVERVIEW OF OBJECTIVES AND APPROACH

### 2.2.1 Objectives

This evaluation represents the final phase of a four-phase effort. To some extent, it has been designed to address many of the same market barriers and market effects that were the focus of the Phase 1 and Phase 3 efforts. The specific objectives of this Phase 4 effort are to:

- Characterize the market for energy-efficient residential appliance and lighting products, as well as the utility and non-utility programs delivered in PY2001 to influence these markets
- Support the determination of energy savings and demand-reduction impacts attributable to PY2001 utility program interventions
- Report results related to the statewide and utility-specific milestones and performance indicators.

### **2.2.2 Approach**

XENERGY completed a number of activities and data collection tasks designed to provide insight for addressing the three core objectives of this Phase 4 effort. Key elements of the scope of work included:

- A characterization of PY2001 activities, including utility and non-utility programs
- A revised market characterization for residential lighting and appliance markets
- Intensive primary data collection activities, including:
  - Interviews with manufacturers and major retail chains
  - Mystery shop surveys
  - Consumer surveys
  - CFL adopter surveys
- An assessment of changes over time in market effects indicators, with a focus on attribution to the PY2001 program interventions.

## **2.3 ORGANIZATION OF REPORT**

This section has provided background for this study, including an overview of the objectives and approach for this four-phase evaluation effort.

Section 3 describes the Phase 4 research methodology, including the sample design, data collection, and analysis plan. Section 4 presents a characterization of the relevant lighting and appliance markets, and Section 5 provides detailed PY2001 lighting and appliance program descriptions. Section 6 presents the market effects results, including changes in consumer attitudes, knowledge, and practices with respect to energy efficiency, as well as changes in relevant market barriers. In Section 7, XENERGY summarizes its conclusions regarding the changes observed in the market over the PY1999-2001 period. Finally, Section 8 discusses the results of specific analyses completed for the CFL programs delivered in 2001.

A number of appendices are also attached to this report. Appendix A contains the Phase 4 mystery shopping survey protocols. Appendix B provides the Phase 4 general population consumer survey and Appendix C contains the CFL adopter survey.

This section presents the methodologies employed for data collection in support of this evaluation. The following tasks comprised the data collection efforts:

- Program characterization
- Market characterization
- CFL survey
- General population survey
- Mystery shopper surveys.

### **3.1 PROGRAM CHARACTERIZATION**

This task involved completing a characterization of PY2001 efforts to promote and deliver to California's residential sector energy-efficient appliances (refrigerators, clothes washers, dishwashers, and room air conditioners) and lighting products (CFLs, torchieres, fixtures). This included documenting investor-owned utility program interventions, and other state, regional, or local activities. For each activity identified through this research, XENERGY documented:

- Program goals vs. accomplishments (i.e., number of units, financial incentives, administrative/marketing expenditures, etc.)
- Program design and delivery elements (i.e., buy-downs, point-of-purchase [POP] incentives, giveaways, turn-ins, upstream activities, etc.)

This was accomplished by interviewing utility program managers to refine our current knowledge of the PY2001 programs and collect relevant program data and documentation. XENERGY also investigated other non-utility program activities and other efforts targeting California residential lighting and appliance markets.

### **3.2 MARKET AND PRODUCT CHARACTERIZATION**

This task involved revising Sections 6 and 7 of XENERGY's Phase 1 evaluation report. This involved updating the descriptions of distribution channels and market shares by manufacturer for appliances and lighting products. In addition, this included updating information on the availability of qualifying energy-efficient products (via the ENERGY STAR<sup>®</sup> web site) as well as applicable market shares for energy-efficient products (from an RER study and other sources).

### **3.3 CFL SURVEY**

Customers who received or purchased CFLs in 2001 through utility and non-utility programs were identified and surveyed through this effort. Its objective was to gather self-reported inputs to CFL impact calculations, including installation rates, hours of use, and peak usage.

### 3.3.1 Sample Frame

#### Population of Major CFL Program Participants

The major CFL programs offered by utilities and non-utilities in 2001 can be organized into four<sup>1</sup> delivery strategies:

- Targeted event giveaway programs—giveaway and turn-in “event” programs
- Door-to-door giveaway programs—such as the Powerwalk program
- Leveraging CFLs delivered via other energy-efficiency programs (SCE’s refrigerator recycling program, SDG&E’s energy audit programs)
- Reduced-price programs—manufacturer buydown POP/instant consumer rebate.

Table 3-1 summarizes the individual programs that comprised these delivery mechanisms.

**Table 3-1**  
**Population of Major CFL Program Participants**

Delivery Mechanism		PG&E	SCE	SDG&E
Targeted Event Giveaways/ Turn-in Programs	Program Description	PG&E sponsored San Francisco CFL Giveaway Event	SCE sponsored CFL Giveaway Exhibits (16) at County Fairs, Ethnic Festivals, and Senior Events	SDG&E sponsored over 60 CFL Giveaway/ Incandescent Turn-in Events at senior centers
	Number of Participants	4,500 residents received one bulb each	>33,000 event attendees received one bulb each	>18,000 seniors received one bulb each
Door-to-door giveaway	Program Description	Statewide Powerwalk Program targeted at low income neighborhoods		
	Number of Participants	500,000 homes received 4 bulbs each		
Leveraging Other Programs	Program Description	N/A	SCE Refrigerator Recycling Program: participants who opted for 5-pack of CFLs instead of \$35 cash incentive	SDG&E’s Mail-in audit participants each received a CFL
	Number of Participants	N/A	5,500 participants received five bulbs each	700 participants received one bulb each
Reduced Price Programs	Program Description	CFL POP Program (\$3 off at the cash register)	CFL Buydown program (\$3 to manufacturer)	CFL Buydown program (\$3 to manufacturer)
	Number of CFLs Sold/ Discounted	7 million bulbs discounted at the register	> 350,000 bulbs shipped	>18,000 bulbs shipped

<sup>1</sup> Originally, the intent was to collect survey data for a fifth category of CFL delivery strategies, Multi-Family Direct Installation programs. However, after an exhaustive effort attempting to collect program participant data (i.e., tenants), it was determined that locating participants would be cost prohibitive. In addition, it was learned that the level of participation in these types of programs was minimal in comparison to the other four major delivery strategies.

### Sample Design

Our sample design included stratification at the program delivery level such that installation rates and other impact-related results could be determined with confidence for various delivery mechanisms. Stratification at this level (i.e., multiple program categories across three service territories) required a significant survey effort. As such, the quotas presented in Table 3-2 were established for each program category/utility combination.

**Table 3-2**  
**Survey Completion Quotas for Each CFL Delivery Mechanism**

Delivery Mechanism	Utility Program Quotas			Quota by Delivery Mechanism
	PG&E	SCE	SDG&E	
Targeted event giveaway programs	67	67	67	201
Door-to-door giveaway programs	67	67	67	201
Leveraging other energy-efficiency programs	na	101	101	202
Reduced-price programs	67 (POP)	67 (buydown)	67 (buydown)	201
<b>Total</b>	<b>201</b>	<b>302</b>	<b>302</b>	<b>804</b>

Note: A minimum sample size of 67 within each of the 11 utility-specific quota cells of this design ensures 90/9 precision. A sample size of 201 per program delivery type ensures approximately 95/6.5 precision.

### 3.3.2 Questionnaire Design

The main challenge of designing the CFL survey instrument was to effectively design survey questions to determine whether the respondent participated in a CFL program. The screening portion of the survey consisted of several modules, one per program delivery channel, each designed to first, determine participation, and second, to collect program-specific information. For two of the four program delivery strategies targeted by the survey, XENERGY obtained lists of program participants from utilities, enabling us easily to confirm their participation.

For the remaining two program delivery channels, confirmation of participation was more complex. For reduced-price programs, XENERGY determined whether the respondent purchased CFLs at a participating retailer during the program period. For door-to-door programs, attempts were made to reach participants of the State of California's Powerwalk program. The contact approach consisted of calling residents who lived in low-income ZIP codes, using the same thresholds used by the Powerwalk to target neighborhoods.<sup>2</sup> XENERGY then asked respondents if they had received bulbs through the Powerwalk, describing to residents what they would have received and from whom. As the program targeted around 10 percent of low-income households, this survey method was a fairly cost-effective approach to surveying Powerwalk participants, given that the program administrators were unwilling to provide XENERGY with participant data.

<sup>2</sup> Through its work in targeting the CARE program, SCE provided ZIP codes that were likely to include low-income households.

The main body of the survey was much simpler, collecting impact-related data on CFL installation, hours of usage, and peak usage from all survey respondents. Additionally, a short battery of questions was added to ascertain energy-efficiency awareness of program participants, for comparison over program delivery channels.

### **Questionnaire Pre-test**

XENERGY personnel pre-tested the survey instrument by calling a sample of program participants representing each program delivery channel, including targeted calls for the reduced-price programs and the Powerwalk program. As a result of the test, they refined their screeners for determining participation. The main body of the survey was also modified slightly, with minor wording changes incorporated to improve the flow.

### **3.3.3 Survey Implementation**

Survey implementation involved full-scale implementation of the survey research effort. This section describes the implementation process.

#### **Data Collection**

XENERGY selected a qualified survey research firm, Quantum Consulting, through a competitive bid process, to conduct the CFL surveys.

To achieve the sample targets cost effectively, they relied on participant lists provided by utilities and information regarding the geographic targets of the programs to maximize the incidence rate for each cell. As described previously in this section, for the reduced-price programs and the Powerwalk program, XENERGY included only those ZIP codes that were targeted by these programs in their sample frame, improving the incidence with which they could identify consumers who purchased/received CFLs through these programs. Table 3-3 presents the available sources for each target cell in the sample frame.

**Table 3-3  
Customer Contact Approach for Each CFL Delivery Type, by Utility**

<b>Delivery Mechanism</b>		<b>PG&amp;E</b>	<b>SCE</b>	<b>SDG&amp;E</b>
<b>Targeted Event Giveaway Programs</b>	<b>Program</b>	San Francisco CFL giveaway	CFL/torchiere promotional events	CFL/torchiere giveaways for seniors
	<b>Approach</b>	List of participants		
<b>Door-to-Door Giveaway Programs</b>	<b>Program</b>	Powerwalk program		
	<b>Approach</b>	Targets by county / ZIP code based on household income data		
<b>Leveraging Other Programs</b>	<b>Program</b>	N/A	SCE refrigerator recycling program	SDG&E's mail-in audit program
	<b>Approach</b>	List of participants		
<b>Reduced Price Programs</b>	<b>Program</b>	CFL POP program	CFL Buydown program	
	<b>Approach</b>	List of participating retailers matched with ZIP codes		



### *Final Disposition*

Table 3-4 displays the actual survey completions for each cell. Note that the quota for each utility's delivery mechanism combination was met or exceeded.

**Table 3-4**  
**Actual Survey Completions for Each CFL Delivery Mechanism**

Delivery Mechanism	Utility Program Quotas			Quota by Delivery Mechanism
	PG&E	SCE	SDG&E	
Targeted event giveaway programs	67	67	68	202
Door-to-door giveaway programs	67	69	67	203
Leveraging other energy-efficiency programs	na	101	102	203
Reduced-price programs	67 (POP)	67 (buydown)	67 (buydown)	201
<b>Total</b>	<b>201</b>	<b>304</b>	<b>304</b>	<b>809</b>

## **3.4 GENERAL POPULATION SURVEY**

A general population survey was conducted as part of this research effort. The general population survey was intended to address consumer awareness and attitudes towards energy efficiency and utility programs.

The effort involved surveying a random sample of PG&E, SCE/SoCalGas, and SDG&E customers to measure consumer attitudes, awareness, and behaviors toward energy efficiency. This survey also measured consumer awareness of and satisfaction with utility programs. Results from this random survey were compared to prior California and national awareness and market effects study results to identify trends and patterns in awareness and behavior.

### **3.4.1 Sample Frame**

#### ***Population***

The sample frame for the general population survey consisted of PG&E, SCE/SoCalGas, and SDG&E customers. As the survey was designed to reach lighting and appliance purchasers, they also targeted recent (within the last 2 years) purchasers of the following products:

- Refrigerators
- Clothes washers
- Dishwashers
- Room air conditioners
- Light bulbs
- Floor lamps
- Hard-wired lighting fixtures.

Table 3-5 describes the population of households by utility service territory.

**Table 3-5**  
**Population of Households by Utility**

Utility	Population
PG&E	4,509,870
SCE	3,890,878
SDG&E	942,941
Total	9,343,689

Tables 3-6 and 3-7 describe the population of appliance and lighting equipment purchasers. The total population of purchasers was calculated based on the proportion of survey respondents who purchased such products within the last 2 years. XENERGY collected data on each potential survey respondent, even after meeting quotas for specific product purchase categories, allowing us to estimate the total number of purchasers in each utility service territory.

**Table 3-6**  
**Self-Reported Annual Household Appliance Purchases<sup>1</sup> and Purchase Rates by Utility**

Utility	Refrigerator		Room Air Conditioner		Clothes Washer		Dishwasher	
	#	%	#	%	#	%	#	%
PG&E	292,306	6.5%	41,758	0.9%	238,021	5.3%	212,966	4.7%
SCE	277,405	7.1%	28,821	0.7%	187,339	4.8%	97,272	2.5%
SDGE	78,578	8.3%	3,492	0.4%	64,609	6.9%	58,497	6.2%
Total	683,474	7.3%	63,445	0.7%	527,745	5.6%	418,159	4.5%

<sup>1</sup>Purchases “within the last 2 years” (between January 2000 and December 2001) divided by 2.

**Table 3-7**  
**Self-Reported Annual Household Lighting Equipment Purchases<sup>1</sup> and Purchase Rates by Utility**

Utility	Hard Wired Fixtures		Torchieres	
	#	%	#	%
PG&E	317,361	7.0%	292,306	6.5%
SCE	237,776	6.1%	187,339	4.8%
SDGE	72,467	7.7%	68,101	7.2%
Total	648,867	6.9%	576,771	6.2%

<sup>1</sup>Purchases “within the last 2 years” (between January 2000 and December 2001) divided by 2.

### **Sample Design**

XENERGY attempted to reach 800 survey respondents—300 PG&E customers, 300 SCE/SoCalGas customers, and 200 SDG&E customers. The sample design was split into two general categories—(1) purchasers, respondents who had purchased at least one product within

the last 2 years, except light bulbs, and (2) non-purchasers, respondents who had not purchased any product within the last 2 years, except light bulbs. Within the purchaser category, 50 purchasers per product were targeted, distributed proportionally across utilities. Table 3-8 presents the quotas for the purchaser and non-purchaser categories.

**Table 3-8**  
**Survey Completion Quotas by Utility**

<b>Purchaser Targets<sup>1</sup></b>	<b>PG&amp;E</b>	<b>SCE/SCG</b>	<b>SDG&amp;E</b>	<b>Total</b>
Refrigerator	20	20	10	50
Clothes washer	20	20	10	50
Dishwasher	20	20	10	50
Room AC	20	20	10	50
Light bulb	20	20	10	50
Floor lamp	20	20	10	50
Fixture	20	20	10	50
Purchasers (of at least one product, except light bulbs)	100	100	100	300
Non-purchasers (of any product, except light bulbs)	200	200	100	500
Total	300	300	200	800

<sup>1</sup> Purchaser targets by product add to more than the total quota for the purchaser category as one respondent may have purchased more than one product.

### **3.4.2 Questionnaire Design**

The general population survey consisted of a purchaser battery for each product and a general population attitudes and awareness section. The purchaser battery was modeled after the Phase 1 survey that was conducted as part of the CRLAP effort in 1998. As the Phase 1 survey was focused on purchasers, and to a lesser extent on determining general population attitudes and awareness, the general population battery was modeled after the CBEE Baseline Study<sup>3</sup> (1998 Hagler Bailly), asking broad awareness, attitudes, and behavioral questions. The Phase 4 effort was also intended to determine the effects of the energy crisis and related program efforts, and, as such, an energy crisis and crisis-related program module was added.

#### **Questionnaire Pre-test**

XENERGY pre-tested both the purchaser and general population modules of the survey instrument, by calling a sample of purchasers and a random sample of the population. As a result, the instrument was modified slightly, changing the wording slightly to improve the flow.

<sup>3</sup> Hagler Bailly, *CBEE Baseline Study on Public Awareness and Attitudes Toward Energy Efficiency*, prepared for California Board for Energy Efficiency (CBEE), June 1999.

### 3.4.3 Survey Implementation

Survey implementation involved full-scale implementation of the survey research effort. This section describes this process.

#### **Data Collection**

As for the CFL surveys, XENERGY selected a qualified survey research firm, Quantum Consulting, through a competitive bid process to conduct the general population surveys.

Random-digit dialing within the ZIP codes that define the PG&E, SCE/SoCalGas, and SDG&E service territories was employed to achieve the quotas for each utility's service territory. As mentioned previously, XENERGY collected "screener" data on each and every potential survey respondent, allowing an estimate of the total purchaser population by utility service territory.

#### **Final Disposition**

Table 3-9 displays the actual survey completions for each cell. It was difficult to reach room air conditioner purchasers, as the annual purchase rate is less than 1 percent (as shown in Table 3-6). As a result, the survey completion targets were adjusted accordingly to control survey costs. A total of 721 surveys were conducted.

**Table 3-9**  
**Actual Survey Completions<sup>1</sup> by Utility**

Purchaser Completions <sup>1</sup>	PG&E	SCE/SCG	SDG&E	Total
Refrigerator	18	19	13	50
Clothes washer	19	19	12	50
Dishwasher	20	20	10	50
Room AC	10	8	3	21
Light bulb	18	21	26	65
Floor lamp	19	20	11	50
Fixture	20	20	9	49
Purchasers (of at least one product, except light bulbs)	95	83	52	227
Non-purchasers (of any product, except light bulbs)	170	171	150	494
Total	265	202	254	721

<sup>1</sup> Purchaser completions by product can add to more than the total completions for the purchaser category as one respondent may have purchased more than one product.

#### **Weights**

No weighting was done when examining the data within a given stratum. However, when examining the entire group composed of the seven strata (or products), two different types of weights were used: expansion weights and relative weights. The expansion weight is simply the reciprocal of the selection probability and is calculated as follows:

$$\text{Expansion Weight} = \frac{N}{n} \quad (3-1)$$

where

$N =$  Population

$n =$  Sample

Equation 3-1 is used when examining a single stratum. When examining all strata, Equation 3-2 is used and applied to each stratum:

$$\text{Expansion Weight} = \frac{N_h}{n_h} \quad (3-2)$$

where

$N_h =$  Population in stratum h

$n_h =$  Sample in stratum h

While the expansion weight appears reasonable for the estimator of the population total, it may play havoc with the average and other statistical measures. To deal with this, the expansion weight was adjusted to produce a relative weight  $rw_i$ , which is defined as the expansion weight divided by the mean of the expansion weights:

$$\text{Relative Weight} = \frac{w_i}{\bar{w}} \quad (3-3)$$

where

$$\bar{w} = \frac{\sum w_i}{n} \quad (3-4)$$

Table 3-10 presents both the resulting expansion weights as well as the relative weights for each strata. Note that the general population weights are applied to light bulb purchasers.

**Table 3-10**  
**Relative and Expansion Weights Employed by Strata**

Strata	PG&E		SCE/SCG		SDG&E	
	Relative	Expansion	Relative	Expansion	Relative	Expansion
Refrigerator	1.335	11,692	1.021	8,949	0.498	4,365
Clothes washer	1.316	9,918	0.956	7,205	0.571	4,307
Dishwasher	1.391	9,680	0.699	4,864	0.764	5,318
Room AC	1.184	4,176	1.021	3,603	0.330	1,164
Light bulb	1.313	17,018	1.182	15,318	0.360	4,668
Floor lamp	1.170	11,243	0.975	9,367	0.644	6,191
Fixture	1.427	11,334	0.880	6,993	0.537	4,263
General Population	1.313	17,018	1.182	15,318	0.360	4,668

### 3.5 MYSTERY SHOPPER SURVEYS

Mystery shopper surveys were conducted as part of Phases 1, 3, and 4 of this study. The following describes the sample frame construction, sample selection, and achieved sample for each phase, followed by a summary of the data collection and analysis protocols.

#### 3.5.1 Sample Frame Construction

##### *Phase 1*

The sample frame for the Phase 1 mystery shopper surveys was constructed from two main data sources: retailers with specific SIC codes from the *Dun & Bradstreet (D&B) Marketplace (July - September 1999)* database and a list of retailers known to have participated in utility programs in the past.

The D&B list of appliance retailers was drawn using the following SIC codes:

- 5722-0000 Household appliance stores
- 5722-0201 Air conditioning room units, self-contained
- 5722-0202 Electric household appliances, major.

The D&B list of lighting retailers was drawn using the following SIC codes:

- 5251-0000 Hardware stores
- 5719-0200 Lighting, lamps, and accessories
- 5211-0000 Lumber and other building materials.

The sample was stratified by chain versus independent. Chains were considered high-volume retailers and independent stores were considered low-volume retailers. Finally, retailers were further stratified by close versus remote. The close and remote stratification was done because XENERGY believed at the time that the services provided the program would vary geographically, with those stores in densely populated areas receiving greater attention than those in sparsely populated areas.

There were 1,563 retail stores in the appliance sample frame. However, many of these retailers provided only repair services or sold only used appliances. Random samples were taken from the sample frame and screened by telephone to make certain that they sold new appliances and sold at least two of the following four appliances:

- Refrigerators
- Dishwashers
- Clothes washers
- Room air conditioners.

The lighting sample frame was made up of 2,670 retail stores. Again, many of these retailers provided only repair services or sold only used lighting equipment. Random samples were taken

from the sample frame and screened by telephone to make certain that they sold new lighting equipment and sold at least two of the following three lighting products:

- Light bulbs
- Torchieres
- Hard-wired lighting fixtures.

### **Phase 3**

The construction of the sample frames for appliance and lighting retailers was far easier in Phase 3 than in Phase 1 because over the 18-month period between the two studies, the program implementation team had identified all known retail stores in the service territories of PG&E, SCE, SDG&E, and SoCalGas. As in Phase 1, stores were stratified by utility and chain vs. independent. Tables 3-11 and 3-12 present these sample frames.

**Table 3-11**  
**Phase 3 Sample Frame of Appliance Retailers, by Utility and by Chain vs. Independent**

<b>Strata</b>	<b>Number of Appliance Retailers</b>	<b>Percent of All Appliance Retailers</b>
PG&E Chain	230	27%
PG&E Independent	228	27%
SCE/SCG Chain	229	27%
SCE/SCG Independent	85	10%
SDG&E Chain	57	7%
SDG&E Independent	26	3%
Total	855	

**Table 3-12**  
**Phase 3 Sample Frame of Lighting Retailers, by Utility and by Chain vs. Independent**

<b>Strata</b>	<b>Number of Appliance Retailers</b>	<b>Percent of All Appliance Retailers</b>
PG&E Chain	341	40%
PG&E Independent	65	8%
SCE/SCG Chain	338	40%
SCE/SCG Independent	13	2%
SDG&E Chain	86	10%
Total	843	

Note that independent lighting retailers were not targeted by the program in SDG&E's service territory, and were not included in the sample frame. Only chain lighting retailers were targeted.

### **Phase 4**

The construction of the sample frames for appliance and lighting retailers in Phase 4 followed the approach used for Phase 3. All targeted retailers were stratified by utility and chain vs. independent, and the resulting frames are presented in Tables 3-13 and 3-14.

**Table 3-13****Phase 4 Sample Frame of Appliance Retailers, by Utility and by Chain vs. Independent**

<b>Strata</b>	<b>Number of Appliance Retailers</b>	<b>Percent of All Appliance Retailers</b>
PG&E Chain	236	31%
PG&E Independent	218	29%
SCE/SCG Chain	139	19%
SCE/SCG Independent	84	11%
SDG&E Chain	47	6%
SDG&E Independent	26	3%
Total	750	

**Table 3-14****Phase 4 Sample Frame of Lighting Retailers, by Utility and by Chain vs. Independent**

<b>Strata</b>	<b>Number of Appliance Retailers</b>	<b>Percent of All Appliance Retailers</b>
PG&E Chain	342	40%
PG&E Independent	74	9%
SCE/SCG Chain	342	40%
SCE/SCG Independent	13	2%
SDG&E Chain	89	10%
Total	860	

**3.5.2 Sample Selection**

Sample selection in Phases 1, 3, and 4 were identical. In each phase, once the sample frames were formed, stratified random samples were drawn from each of the utility cells. First, stores that were located in extremely remote locations (e.g., Eureka, Rancho Mirage) were eliminated because it was not cost effective to send shoppers to these areas. Selected stores were then sorted randomly and called to confirm that the store sold at least two of the new appliances or new lighting measures. This was done because each mystery shopper was to collect information on two appliances or two lighting measures, thus providing adequate coverage of the seven measures addressed in this study. The stores that passed this screening were then eligible to be shopped. Randomly sorted lists of qualified appliances and lighting stores were then provided to the research firm conducting the mystery shopper surveys.

**3.5.3 Achieved Sample**

The achieved samples for Phases 1, 3, and 4 are presented in Tables 3-15, 3-16, and 3-17. The achieved samples are presented both in terms of the number of stores and the number and types of lighting products and appliances.



**Table 3-15**  
**Achieved Samples of Appliance and Lighting Retail Stores, by Store Type and Utility**

Phase	Utility	Equipment	Chain	Independent	Total
1	PG&E	Appliance	25	4	29
	PG&E	Lighting	25	8	33
	SCE	Appliance	24	6	30
	SCE	Lighting	25	6	31
	SDG&E	Appliance	23	6	29
	SDG&E	Lighting	23	8	31
	<b>Total</b>			<b>145</b>	<b>38</b>
3	PG&E	Appliance	24	7	31
	PG&E	Lighting	25	8	33
	SCE	Appliance	24	6	30
	SCE	Lighting	24	8	32
	SDG&E	Appliance	24	9	33
	SDG&E	Lighting	33	N/A	33
	<b>Total</b>			<b>154</b>	<b>38</b>
4	PG&E	Appliance	25	5	30
	PG&E	Lighting	23	5	28
	SCE	Appliance	25	2	27
	SCE	Lighting	26	4	30
	SDG&E	Appliance	26	5	31
	SDG&E	Lighting	33	N/A	33
	<b>Total</b>			<b>158</b>	<b>21</b>

**Table 3-16**  
**Achieved Sample of Lighting Products Shopped in Retail Stores**

Phase	Utility	Chain			Independent			Total
		Hardwired Fixture	Light Bulb	Torchiere	Hardwired Fixture	Light Bulb	Torchiere	
1	PG&E	14	15	19	4	8	2	62
	SCE	15	18	15	4	4	4	60
	SDG&E	17	15	14	3	8	2	59
	<b>Total</b>		<b>46</b>	<b>48</b>	<b>48</b>	<b>11</b>	<b>20</b>	<b>8</b>
3	PG&E	17	16	17	6	6	4	66
	SCE	13	19	15	5	5	5	62
	SDG&E	16	23	19	N/A	N/A	N/A	58
	<b>Total</b>		<b>46</b>	<b>58</b>	<b>51</b>	<b>11</b>	<b>11</b>	<b>9</b>
4	PG&E	13	15	14	5	1	2	50
	SCE	13	20	18	3	3	1	58
	SDG&E	14	27	23	N/A	N/A	N/A	64
	<b>Total</b>		<b>40</b>	<b>62</b>	<b>55</b>	<b>8</b>	<b>4</b>	<b>3</b>

**Table 3-17**  
**Achieved Sample of Appliances Shopped in Retail Stores**

Phase	Utility	Chain				Independent				Total
		Refrigerator	Dish-washer	Clothes Washer	Room AC	Refrigerator	Dish-washer	Clothes Washer	Room AC	
1	PG&E	7	14	7	5	3	3	1	0	40
	SCE	12	10	10	5	4	1	6	1	49
	SDG&E	9	12	8	7	4	3	4	1	48
	<b>Total</b>	<b>28</b>	<b>36</b>	<b>25</b>	<b>17</b>	<b>11</b>	<b>7</b>	<b>11</b>	<b>2</b>	<b>137</b>
3	PG&E	14	14	14	5	4	5	4	1	61
	SCE	13	12	15	7	5	2	4	1	59
	SDG&E	14	15	12	5	5	6	6	1	64
	<b>Total</b>	<b>41</b>	<b>41</b>	<b>41</b>	<b>17</b>	<b>14</b>	<b>13</b>	<b>14</b>	<b>3</b>	<b>184</b>
4	PG&E	13	17	18	2	3	4	3	0	60
	SCE	13	15	18	4	1	1	2	0	54
	SDG&E	13	19	18	2	2	4	3	1	62
	<b>Total</b>	<b>39</b>	<b>51</b>	<b>54</b>	<b>8</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>1</b>	<b>176</b>

### 3.5.4 Data Collection

For Phases 1, 3, and 4, a member firm of the Mystery Shopping Providers Association (MSPA)<sup>4</sup> was selected through a competitive bidding process to conduct the mystery shops. Separate sets of data collection protocols and an accompanying questionnaire were then developed for appliance and lighting stores.<sup>5</sup>

#### ***Shopper Training***

Prior to actually collecting the data in each phase, shopper training sessions were conducted in several locations across the state. For Phase 4, shopper training was conducted in Oakland, Burbank, and San Diego to make sure that the mystery shoppers understood the objectives of the study, the data collection protocols, and the survey instrument. It was also important that shoppers could identify the equipment being shopped for and the types of POP materials that they might encounter. XENERGY then pre-tested and implemented the mystery shopping data collection protocols and survey instruments.

<sup>4</sup> The MSPA was formed in 1998 with the purpose of strengthening the mystery shopping industry through out the world. The MSPA's goal is to improve and stimulate the acceptance, performance, reputation, and use of mystery shopping services, both regionally and internationally.

<sup>5</sup> See Appendix A for a copy of the protocols and questionnaires.

### ***Shopping Protocols***

The following describes the shopping protocols and the kinds of information collected during the mystery shops.

- **POP Materials.** As the mystery shoppers entered the stores, they were instructed to observe the POP advertising and note which types of appliances or lighting were advertised, the organizational sponsor (e.g., manufacturer, utility, retailer, etc.) and the type of materials used in the advertising (e.g., banner, flyer, poster, sticker, etc.). The shoppers also observed where the information was displayed, whether it was easy to see and read, and whether the display was attractive.
- **Product Exposure and Share of Sales Floor.** Depending on whether they were shopping in an appliance store or a lighting store, mystery shoppers were instructed to look for two different appliances or lighting products in each store they visited. When approached by a salesperson, the mystery shopper was to explain that he/she was shopping for these two appliances or lighting products. Mystery shoppers were further instructed to look for three different models of each of the two appliance types or lighting products. Depending on which two appliances the mystery shopper was looking for, he/she was directed to indicate interest in:
  - A white, standard-size dishwasher
  - A white 40-gallon gas water heater<sup>6</sup>
  - A white, standard-size (not greater than 3 cubic feet) clothes washer
  - A room air conditioner between 8,000 and 9,000 BTUs
  - A white, 22-cubic foot refrigerator with either top or side freezer and no through-the-door icemaker (icemaker inside the freezer was optional).

Depending on which two lighting products the mystery shopper was looking for, he/she was directed to indicate interest in:

- A basic floor lamp (nothing too fancy) that would direct light upward toward the ceiling
- A basic (no fan) hard-wired ceiling fixture for the bathroom
- A 100-Watt screw-in light for a table lamp (75 or 60 Watts also acceptable).

As the salesperson began showing the three selections per appliance or per lighting product, the mystery shopper was instructed to pay particular attention to whether the salesperson mentioned specific aspects of the product, such as energy use, energy efficiency, rebates, life-cycle costs, etc. and what, exactly, the salesperson said about such attributes. The mystery shopper was also to note whether the ENERGY STAR<sup>®</sup> label was on the appliance or lighting equipment itself or its packaging.

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<sup>6</sup> Water heaters were only shopped in Phase 1 and thus are not included in the analysis of the awareness and knowledge milestone.

If energy use or energy efficiency were not mentioned for any of the three appliance models or pieces of lighting equipment, the mystery shopper was to ask, “Do all three use the same amount of electricity?” or, “Are all three equally energy efficient?” If the ENERGY STAR<sup>®</sup> designation was on the label or packaging and the salesperson did not discuss it, the mystery shopper was instructed to ask, “What does the ENERGY STAR<sup>®</sup> label mean?” In addition, if shopping for an appliance with an Energy Guide label on it, mystery shoppers were instructed to ask the salesperson, “Can you explain the Energy Guide label to me?”

Finally, if after raising the energy-efficiency issue, the salesperson offered to show more products, mystery shoppers were instructed to shop for a maximum of two additional appliance or lighting models. The maximum number of models shown to most mystery shoppers, therefore, was five (three initially, plus two additional).

Mystery shoppers were also instructed to collect data on appliance prices and rebates for each of the models they were shown (up to five).

- **Salesperson Knowledge.** Finally, mystery shoppers were instructed to evaluate the extent to which salespeople were knowledgeable about energy efficiency, the ENERGY STAR<sup>®</sup> program, and various rebate programs.

The appliance and lighting data collection instruments, shopping protocols, and codebooks are provided in Appendix A.

### 3.5.5 Attitude/Knowledge Index

This section describes our approach to constructing an awareness/knowledge index (AKI) to measure the awareness and knowledge of sales associates regarding energy-efficient lighting and appliance technologies. This index was constructed to document one of the utility-specific milestones for this program, but it also serves as a useful indicator of short-term market effects attributable to the training component of the program.

The index is derived from questions on the mystery shopper surveys (Phases 1 and 3) that assess the awareness and knowledge of sales associates regarding energy efficiency, as well as the ENERGY STAR<sup>®</sup> program and label. The questions selected to create the AKI are presented below:

5. How many units did the sales person *initially* show you?  
Number of units: \_\_\_\_\_
6. Of the units that you were *initially* shown, how many were *voluntarily described* by the sales person as being energy efficient?  
Number described by sales person as energy efficient: \_\_\_\_\_

7. Of the units that you were *initially* shown, how many had the ENERGY STAR<sup>®</sup> label?  
Number of units having the ENERGY STAR<sup>®</sup> label: \_\_\_\_\_
8. After you explicitly asked the sales person about energy efficiency, how many of the units *initially shown* to you were *now* described by the salesperson as being energy efficient?<sup>7</sup>  
Number described by salesperson as energy efficient: \_\_\_\_\_
12. Please indicate the extent to which the sales person was knowledgeable about energy efficiency. Record your answer on a scale of 1 to 4, with a 1 meaning not at all knowledgeable and a 4 meaning very knowledgeable.  
Answer: \_\_\_\_\_
13. Please indicate the extent to which the sales person mentioned energy efficiency as a *positive feature* in his/her sales pitch. Record your answer on a scale of 1 to 4, with a 1 meaning not at all and a 4 meaning a great deal.  
Answer: \_\_\_\_\_
14. Please indicate the extent to which the sales person appeared knowledgeable about the *ENERGY STAR<sup>®</sup> Program*. Record your answer on a scale of 1 to 4, with a 1 meaning not at all knowledgeable and a 4 meaning very knowledgeable.  
Answer: \_\_\_\_\_

Each of these questions has face validity, meaning that they appear on their face to be measuring what they are intended to measure, i.e., awareness and knowledge of energy efficiency and the ENERGY STAR<sup>®</sup> program and label.

Because the scales of questions 6, 7, and 8 were not on the same 4-point scale as questions 12, 13, and 14, they had to be transformed. This was necessary to construct an AK index using all five questions (6 or 8, 7, 12, 13, and 14). This transformation involved two steps. First, because not everybody was initially shown three units (as was planned) of a given appliance or lighting product, questions 6, 7, and 8 were first transformed into a percent by dividing each by the answer to question 5. That is, question 6 was converted to the share of the units initially shown that were voluntarily described as efficient, question 7 was converted to the share of the units initially shown that had the ENERGY STAR<sup>®</sup> label, and question 8 was converted to the share of the units initially shown that are *now* described by the sales person as being energy efficient (after explicitly asking the sales person about energy efficiency). Next, these percentages were normalized to a 4-point scale, the same scale as questions 12, 13, and 14.

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<sup>7</sup> Note that it was only necessary to respond to Q.8 when the answer to Q.6 was zero. In such cases, only Q.8 was used in the calculation of the index. If the answer to Q.6 was not zero, then the answer to Q.6 was used in the calculation.

### ***Reliability***

Before using the five questions (6 or 8, 7, 12, 13, and 14), an assessment of the reliability<sup>8</sup> of the AKI was conducted using Cronbach's alpha (Hair et al., 1998), which measures the consistency of the entire AKI. The generally agreed-upon lower limit for Cronbach's alpha is 0.70. For the Phase 1 data, Cronbach's alpha for the five items forming the AKI was 0.79 for appliances and 0.87 for lighting, both well above 0.70. For the Phase 3 data, Cronbach's alpha for the five items forming the AKI was 0.76 for appliances and 0.80 for lighting, both well above 0.70. For the Phase 4 data, Cronbach's alpha for the five items forming the AKI was 0.80 for appliances and 0.85 for lighting, both well above 0.70.

### ***Weights***

To facilitate the comparison of the results for Phases 1, 3, and 4, the same weighting scheme was used as in Phase 1. This approach is described in detail in Section 4 of the Phase 1 report.

When comparing Phases 1, 3, and 4 with respect to the AKI, the data were weighted to reflect the population of appliance and lighting stores included in the sample frame. Weights were based on the familiar expansion weight, which is the reciprocal of the selection probability:

$$N_h/n_h$$

where

N = Population of appliances stores

n = Achieved sample of appliance stores

h = Stratum membership (i.e., chain versus independent and utility)

The expansion weights are designed to return the number of retail appliance stores in the sample frame, the number of lighting stores in the sample frame, and the total number of retail appliance and lighting stores in the sample frame.

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<sup>8</sup> Reliability is defined as the extent to which a variable or set of variables is consistent in what it is intended to measure. If multiple measurements are taken, reliable measures will all be very consistent in their values. It differs from validity in that it does not relate to what should be measured, but instead to how it is measured.

# 4

## MARKET AND PRODUCT CHARACTERIZATION

This section defines the total market size for the specific lighting and appliance types under discussion, and examines the market share of ENERGY STAR<sup>®</sup> equipment within each type.

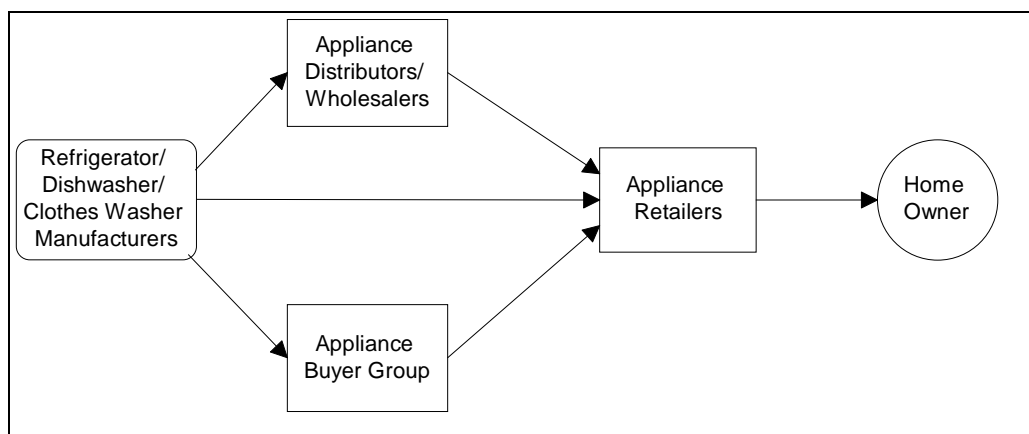
### 4.1 APPLIANCES

#### 4.1.1 Distribution Channels

Figure 4-1 shows the distribution channels for major residential appliances in the existing homes market.<sup>1</sup> Major residential appliances can flow to the homeowner through one of three different routes. The upper path is the traditional channel through an appliance distributor or wholesaler. Some manufacturers are vertically integrated with their own distributors.

The other two pathways do not include a typical distributor or wholesaler. Large retailers often have direct relationships with a manufacturer. For smaller retailers, many are members of aggregate buyer groups, which provide increased pricing leverage with the manufacturer. The channels vary somewhat depending on the appliance. In particular, the channels in the clothes washer market have been considerably consolidated so that distributors play almost no role.<sup>2</sup>

**Figure 4-1**  
**Major Residential Appliance Products Distribution Channels**



Source: Phase I Baseline Assessment for the Statewide Residential Lighting and Appliance Program, prepared by XENERGY Inc. for San Diego Gas & Electric, December 1999.

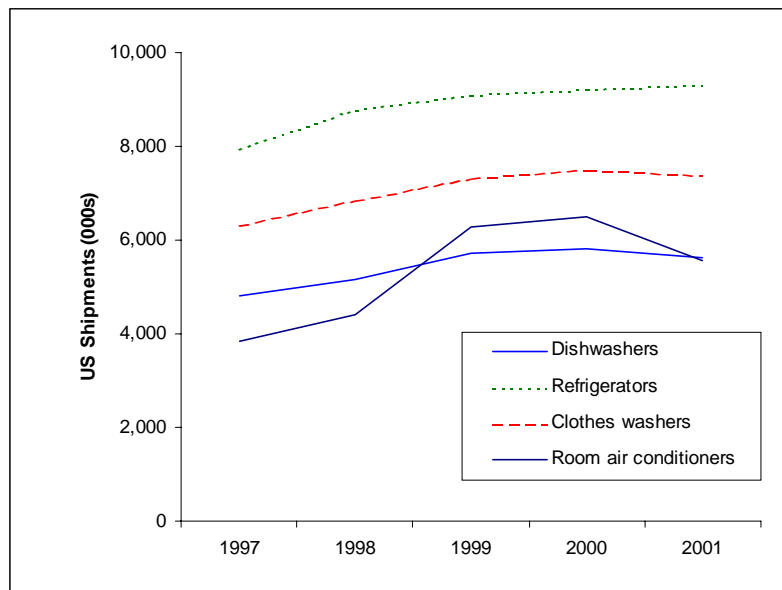
<sup>1</sup> Note that this diagram excludes the channel that would be used in the case of new homes for refrigerators and dishwashers.

<sup>2</sup> RER. 1999. *Efficiency Market Share Needs Assessment and Feasibility Scoping Study*. Prepared for California Board for Energy Efficiency/San Diego Gas and Electric and Southern California Gas.

### 4.1.2 Sales Trends

Figure 4-2 illustrates the trends in U.S. appliance shipments from 1997 through 2001. As shown, refrigerator shipments increased somewhat in 2001 over 2000, whereas clothes washer, dishwasher and, most notably, room air conditioner shipments decreased between 2000 and 2001.

**Figure 4-2**  
**US Appliance Shipments**  
*1997-2001*



Source: *Appliance Manufacturer Magazine*, March 2002 Shipments/Forecasts Tables, page 2 (<http://www.ammagazine.com/AM/FILES/HTML/PDF/0302shipments.pdf>).

Table 4-1 shows annual appliance sales in California during 1998-2000. As shown, appliance sales trends are fairly similar in California and the rest of the U.S. during this period, with the exception of room air conditioners. There appears to have been a much more dramatic increase in sales nationally compared to the experience in California.

**Table 4-1**  
**California Appliance Sales**  
*1998-2000*

	1998	1999	2000	Change from 1998-2000	
				CA	US
Dishwashers	509,000	566,800	579,100	14%	14%
Refrigerators	949,400	975,700	1,025,300	8%	5%
Clothes washers	702,000	721,100	731,500	4%	10%
Room air conditioners	231,100	278,600	279,600	21%	48%

Source: *California Appliance Trends*, RER.



### 4.1.3 ENERGY STAR® Refrigerators

#### Product Specification

The ENERGY STAR® specification and the federal minimum efficiency standards (NAECA) vary depending on the size and configuration of the refrigerator. Currently, to qualify for the ENERGY STAR® label, models must use 10 percent less energy than the 2001 NAECA standard for a refrigerator of that size and configuration. The 2001 ENERGY STAR® specifications changed on January 1, 2001. Table 4-2 shows the changes in the NAECA standards on July 1, 2001.

**Table 4-2**  
**Old and New NAECA Standards**

Product class	Current NAECA maximum energy use (kWh/year)	New NAECA maximum (kWh/year)
Top mount freezer, no through-door ice	16.0 * AV + 355	9.8 * AV + 276
Side mount freezer, no through-door ice	11.8 * AV + 501	4.91 * AV + 507.5
Bottom mount freezer, no through-door ice	16.5 * AV + 367	4.6 * AV + 459
Top mount freezer, through-door ice	17.6 * AV + 391	10.2 * AV + 356
Side mount freezer, through-door ice	16.3 * AV + 527	10.1 * AV + 406

Note: AV stands for "adjusted volume" (fresh volume \* (1.63 \* freezer volume))

Currently, there are a total of 312 refrigerator models listed in the ENERGY STAR® qualifying appliances database. The majority of these (77 percent) are listed as 10 percent more efficient than the 2001 NAECA standard. About 23 percent of the qualifying models (or 71) are over 10 percent more efficient, with two models currently listed at 20 percent more efficient.

#### Product Diversity

There are currently more refrigerator models that are ENERGY STAR® qualified than there were in May 1999, despite more stringent program requirements and higher federal efficiency standards. As mentioned above, 312 refrigerator models currently qualify for the ENERGY STAR® program. In May 1999, only 223 refrigerator models qualified for the ENERGY STAR® program.

There are limited data available to estimate what percentage the new ENERGY STAR®-qualified refrigerator models represent of all currently available models. AHAM's Directory of Certified Refrigerators and Freezers indicated that in July 2001 there were 515 refrigerator models that complied with the new NAECA standard.<sup>3</sup> If in April 2002 there are 312 ENERGY STAR®-qualified refrigerator models, this could represent about 50 to 60 percent of all currently available models.

<sup>3</sup> RER, Inc., *California Residential Efficiency Market Share Tracking: Appliances 2001*, prepared for Southern California Edison, September 26, 2001, page 5-3.

Table 4-3 compares the manufacturers and brands of refrigerators that currently qualify for the ENERGY STAR<sup>®</sup> program with those that qualified in May 1999.

**Table 4-3**  
**Comparison of ENERGY STAR<sup>®</sup>-Qualified Refrigerator Manufacturers and Brands**  
*April 2002 vs. May 1999*

Manufacturer	Brand	Number of Qualified Products	
		Apr-02	May-99
Whirlpool	Kenmore	64	59
	Kitchen Aid	54	36
	Whirlpool	51	22
	Kirkland	3	
	Roper	2	10
	Estate	1	
Frigidaire	Frigidaire	42	1
	Kenmore	14	
	Amana	4	
General Electric	General Electric	29	11
	Hotpoint	1	3
	Monogram	1	
	RCA		2
Maytag	Maytag	10	22
	Jenn-Air	5	17
	Magic Chef	4	5
	Performa	3	
Amana	Amana	9	34
	Kenmore	3	
	General Electric	1	
	Modern Maid		1
LG Electronics	LG Electronics	4	
Camco	General Electric	3	
Diversified Refrigeration Inc.	Monogram	3	
Sub-Zero Freezer Co. Inc.	Sub-Zero Freezer Co. Inc.	1	
Total		312	223

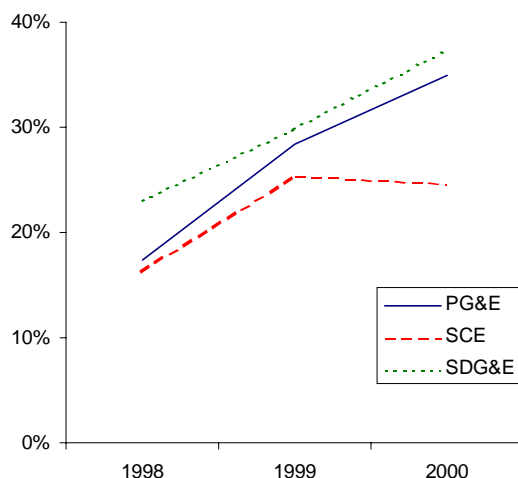
Source: [www.energystar.gov/products/qualifying\\_appliances.xls](http://www.energystar.gov/products/qualifying_appliances.xls) (April 2002) and [www.energystar.gov](http://www.energystar.gov) (May 1999).

### **Market Share**

Data available from the California RMST Project is only available through 2000; thus, it only illustrates trends in qualified products complying with the old ENERGY STAR<sup>®</sup> specifications. However, these data illustrate a sharp rise in the market share for ENERGY STAR<sup>®</sup> refrigerators late in 2000, perhaps in anticipation of the new program specifications and the impending change in the federal standards. For example, market share held fairly steadily in the 25-to-30-percent range from the second quarter of 1999 through the second quarter of 2000. Market share picked

up in the third and fourth quarter, reaching 35 percent at year-end. Figure 4-3 shows market share by utility.

**Figure 4-3**  
**Market Share for ENERGY STAR<sup>®</sup> Compliant Refrigerators by Utility**  
 1998-2000



Source: California Residential Efficiency Market Share Tracking: Appliances 2001, RER, Inc., September 2001.

#### 4.1.4 ENERGY STAR<sup>®</sup> Clothes Washers

##### Product Specifications

The ENERGY STAR<sup>®</sup> specifications for clothes washers were slightly modified on January 1, 2001, changing from an energy factor (EF) to a modified energy factor (MEF). MEF is a new equation for Energy Factor that takes into account the amount of dryer energy used to remove the remaining moisture content in washed items ( $D_E$ ). The precise algorithm used to calculate the MEF is as follows:

$$\text{MEF} = C / (\text{HE}_T + \text{ME}_T + D_E)$$

where  $C$  = capacity (cubic feet)

$\text{HE}_T$  = total weighted hot water energy consumption (in kWh per cycle)

$\text{ME}_T$  = total weighted machine electrical energy consumption (in kWh per cycle)

$D_E$  = per-cycle energy consumption for removal of moisture from test load (in kWh per cycle, includes RMC)

The new specification requires a minimum MEF of 1.26, which according to the ENERGY STAR<sup>®</sup> website is very similar to the old specification of a minimum EF of 2.5. As a result, only a few products have been affected by this specification change.

Table 4-4 shows the percent of qualified clothes washer models currently participating in the ENERGY STAR<sup>®</sup> program according to MEF and EF categories.

**Table 4-4**  
**ENERGY STAR<sup>®</sup>-Qualified Clothes Washer Efficiency Levels<sup>1</sup>**  
*April 2002*

Modified Energy Factor	Percent of Qualified Models	Energy Factor <sup>2</sup>	Percent of Qualified Models
1.26 to less than 1.50	34%	2.50 to less than 3.00	31%
1.50 to less than 1.80	53%	3.00 to less than 4.00	20%
1.80 or greater (max 2.20)	13%	4.00 or greater (max 5.3)	43%

<sup>1</sup> A total of 91 clothes washer models are listed in the ENERGY STAR<sup>®</sup>-qualified products database in April 2002.

<sup>2</sup> Six models are listed in the ENERGY STAR<sup>®</sup>-qualified products database with energy factors less than 2.50.

Source: [www.energystar.gov/products/qualifying\\_appliances.xls](http://www.energystar.gov/products/qualifying_appliances.xls) (April 2002)

The federal minimum efficiency standards (NAECA) for clothes washers currently require a minimum EF of 1.18, and this national standard will not be changing to incorporate the modified energy factor until 2004.

### ***Product Diversity***

The number of ENERGY STAR<sup>®</sup>-qualified clothes washer models has increased nearly two-fold from May 1999 to April of 2002. According to the ENERGY STAR<sup>®</sup> website, as of April 2002, 91 clothes washer models qualified for the program. As reported in the Phase 1 report, as of May 1999, there were only 32 clothes washer models with energy factors of 2.50 or greater.

XENERGY estimated at that time that this represented 4 to 6 percent of all models produced. Over time, this percentage has grown to over 13 percent of all models currently available.<sup>4</sup>

In addition, the number of manufacturers and brands producing ENERGY STAR<sup>®</sup>-qualified clothes washers has increased over time, another indicator that product features—including energy efficiency—have diversified. In May 1999, there were 12 manufacturers producing 14 unique brands of qualified clothes washers. In April 2002, there are 15 manufacturers producing 22 unique brands of qualified models. A comparison of manufacturers and brands is provided in Table 4-5.

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<sup>4</sup> RER, Inc., *California Residential Efficiency Market Share Tracking: Appliances 2001*, prepared for Southern California Edison, September 26, 2001, page 3-1 and 3-2.

**Table 4-5**  
**Comparison of ENERGY STAR<sup>®</sup>-Qualified Clothes Washer Manufacturers and Brands**  
*April 2002 vs. May 1999*

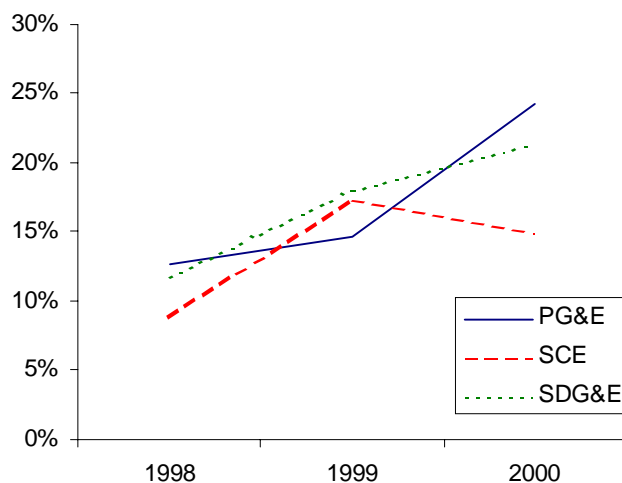
Manufacturer	Brand	Number of Qualified Models	
		April 2002	May 1999
Frigidaire	Frigidaire	27	5
	Kenmore	6	0
	Gibson	4	1
	General Electric	2	0
	Imperial	1	0
	White-Westinghouse	1	0
Asko	Asko	8	4
Maytag	Maytag	8	5
Whirlpool	Kenmore	8	3
	Whirlpool	4	1
Miele, Inc.	Miele	6	4
Amana	Amana	1	0
Appliances International	Quietline	1	0
Bosch	Bosch	3	1
Samsung	Avanti	3	0
General Electric	General Electric	2	2
Fisher & Paykel Appliances Inc.	Fisher & Paykel	1	0
LG Electronics	LG Electronics	1	0
Philco	Equator	1	1
	Splendide	1	0
Staber	Staber	1	1
Thor	Thor	1	0
Other		0	4
Total		91	32

Source: [www.energystar.gov/products/qualifying\\_appliances.xls](http://www.energystar.gov/products/qualifying_appliances.xls) (April 2002) and [www.energystar.gov](http://www.energystar.gov) (May 1999).

### **Market Share**

Data available from the California Residential Market Share Tracking (RMST) Project is only available through 2000; thus, it only illustrates trends in qualified products using the old ENERGY STAR<sup>®</sup> specification (minimum 2.50 EF). These data indicate that the overall market share for ENERGY STAR<sup>®</sup> compliant clothes washers in California rose from under 9 percent in early 1998 to over 20 percent by the end of 2000. Figure 4-4 illustrates changes in market share by utility.

**Figure 4-4**  
**Market Share for ENERGY STAR®-Qualified Clothes Washers by Utility**  
 1998-2000



Source: California Residential Efficiency Market Share Tracking: Appliances 2001, RER, Inc., September 2001.

#### 4.1.5 ENERGY STAR® Dishwashers

##### Product Specifications

A new specification for ENERGY STAR®-qualified dishwashers came into effect in January 2001. This specification requires a minimum of 0.58 EF, which is 25 percent above the federal minimum efficiency standard (NAECA) of 0.46 EF. The previous ENERGY STAR® specification was 0.52 EF, which was only 13 percent above the federal standard. Table 4-6 shows the dishwasher energy factors.

**Table 4-6**  
**Dishwasher Energy Factors**

	Energy factor
Normal cycle	$1 / E_n$
Truncated normal cycle	$1 / (0.5 * E_n + E)$

$E_n$  = total energy consumption per normal cycle

$E$  = total energy consumption per truncated cycle

Source: Federal Register vol. 66 no. 243 (December 18, 2001)

Table 4-7 shows the percent of qualified dishwasher models currently participating in the ENERGY STAR® program according to EF categories. As shown, of the 267 dishwasher models listed as “active” in the ENERGY STAR® qualifying appliances database in April 2002, 10 percent do not meet the minimum specification of 0.58 EF. The majority of qualified models fall between 0.58 and less than 0.65 EF, although 30 percent have an EF of 0.65 or greater.

It is important to note that in 1999, CRLAP was first designed to promote two tiers of dishwasher efficiency. In addition to ENERGY STAR<sup>®</sup> compliance, Tier 1 efficiency required an EF greater than or equal to 0.52 and less than 0.58; Tier 2 efficiency required an EF above Tier 1.

In May 1999, 35 percent of the dishwasher models listed in the ENERGY STAR<sup>®</sup>-qualifying appliances database were Tier 1 compliant; 65 percent fell within the Tier 2 efficiency requirements. Clearly, the efficiency levels of ENERGY STAR<sup>®</sup>-qualifying dishwashers have risen dramatically.

**Table 4-7**  
**ENERGY STAR<sup>®</sup>-Qualified Dishwasher Efficiency Levels<sup>1</sup>**  
*April 2002*

Energy Factor	Percent of Qualified Models
Less than 0.58	10%
0.58 to less than 0.60	20%
0.60 to less than 0.65	40%
0.65 to less than 0.70	19%
0.70 or greater (max 1.05)	11%

<sup>1</sup> A total of 267 dishwasher models are listed as "active" in the ENERGY STAR qualified products database in April 2002. Twenty-six models have an EF of less than 0.58.

Source: [www.energystar.gov/products/qualifying\\_appliances.xls](http://www.energystar.gov/products/qualifying_appliances.xls) (April 2002)

### ***Product Diversity***

As stated above, the number of ENERGY STAR<sup>®</sup>-qualified dishwasher models has increased from 185 in May 1999 to 267 in April of 2002. While this increase may appear modest, one needs to keep in mind the change in the ENERGY STAR<sup>®</sup> minimum efficiency specification that took place in January 2001. Taking this change into account, it is estimated that ENERGY STAR<sup>®</sup>-qualified dishwasher models represented approximately 22 percent of the available models prior to the specification change and currently represent over 30 percent of the available models<sup>5</sup>.

In addition, several new manufacturers have introduced new products; existing manufacturers have offered additional brands. In May 1999, there were 13 manufacturers producing 22 unique brands of qualified clothes washers. In April 2002, there are 15 manufacturers producing 34 unique brands of qualified models. Table 4-8 compares manufacturers and brands.

<sup>5</sup> RER, Inc., *California Residential Efficiency Market Share Tracking: Appliances 2001*, prepared for Southern California Edison, September 26, 2001, page 4-1 and 4-2.

**Table 4-8**  
**Comparison of ENERGY STAR®-Qualified Dishwasher Manufacturers and Brands**  
*April 2002 vs. May 1999*

Manufacturer	Brand	Number of Qualified Models	
		April 2002	May 1999
Bosch	Bosch	45	35
	Gaggenau	5	0
	Thermador	5	4
Frigidaire	Frigidaire	22	15
	Amana	7	0
	Kenmore	4	0
	Gibson	3	12
	Multi-flex	2	0
	Tappan	0	9
	White-Westinghouse	0	8
	Kelvinator	0	8
	Roper	0	1
	Whirlpool	Whirlpool	19
Kitchen Aid		11	0
Kenmore		4	3
Inglis		2	0
Kirkland		1	0
General Electric	General Electric	28	30
	Kenmore	4	0
	Hotpoint	3	0
Asko	Asko	17	8
	Viking	3	0
Miele, Inc.	Miele	19	13
Fagor	Crosley	5	0
	Creda	4	0
	Fagor	4	0
	Euroline	2	0
Electrolux	GE/Monogram	11	3
	General Electric	2	0
Equator	Equator	10	6
Maytag	Maytag	4	9
	Jenn-Air	2	4
	Amana	1	0
Email Ltd Major Appliances	Regency	6	6
Amana	Amana	5	5
Smeg	Smeg	4	0
Fisher & Paykel Appliances Inc.	Fisher & Paykel	2	1
Electrolux Compact Appliances	ORIGO	1	0
Bonferraro	Bonferraro	0	4
Total		267	185

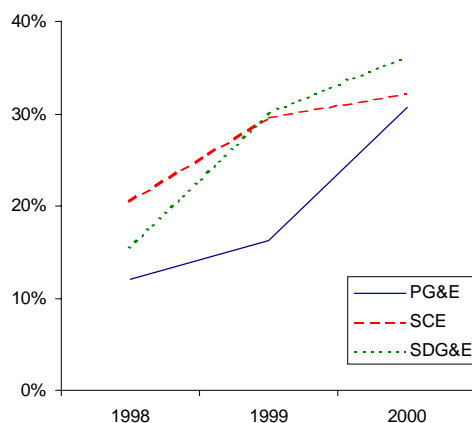
Source: [www.energystar.gov/products/qualifying\\_appliances.xls](http://www.energystar.gov/products/qualifying_appliances.xls) (April 2002) and [www.energystar.gov](http://www.energystar.gov) (May 1999).



### Market Share

ENERGY STAR<sup>®</sup>-qualified dishwashers sold in California gained market share from about 17 percent in early 1998 to 38 percent at the end of 2000. Figure 4-5 illustrates changes in market share by utility.

**Figure 4-5**  
**Market Share for ENERGY STAR<sup>®</sup>-Qualified Dishwashers by Utility**  
 1998-2000



Source: California Residential Efficiency Market Share Tracking: Appliances 2001, RER, Inc., September 2001.

### 4.1.6 ENERGY STAR<sup>®</sup> Room Air Conditioners

#### Product Specifications

Both the federal minimum efficiency standards and the ENERGY STAR<sup>®</sup> specifications changed on October 1, 2000 for room air conditioners. The latter new ENERGY STAR<sup>®</sup> specifications are 10 percent above the new federal standards for all cooling capacities and apply only to models manufactured after October 1, 2000. Table 4-9 shows the change in both the federal (NAECA) and the ENERGY STAR<sup>®</sup> standards.

**Table 4-9**  
**Room Air Conditioner EER standards**

Product Class (Btu / Hr)	Old NAECA criteria	Old Energy Star criteria	New NAECA criteria	New Energy Star criteria
< 6,000	8	9.2	9.7	10.7
6,000 - 7,999	8.5	9.75	9.7	10.7
8,000 to 13,999	9	10.35	9.8	10.8
14,000 to 19,999	8.8	10.1	9.7	10.7
> 20,000	8.2	9.4	8.5	9.4

The EER is the steady-state rate of heat energy removal by the unit (in Btu/h) divided by the steady-state rate of energy input to the unit (in watts). Thus, the EER is represented in Btus/Wh. Table 4-10 shows the percent of qualified room air conditioners by efficiency level category.

**Table 4-10**  
**Efficiency Levels of ENERGY STAR<sup>®</sup>-Qualified Room Air Conditioners**  
*April 2002*

Efficiency Level	Percent of Qualified Products
10% more efficient than new standard	51%
11-12% more efficient than new standard	26%
13% or more efficient than new standard (max 20%)	20%

<sup>†</sup> A total of 159 room AC models were listed in the ENERGY STAR-qualified appliances database (April 2002).

Source: [www.energystar.gov/products/qualifying\\_appliances.xls](http://www.energystar.gov/products/qualifying_appliances.xls) (April 2002)

### ***Product Diversity***

As stated above, currently 159 room air conditioner models qualify for the ENERGY STAR<sup>®</sup> program. In May 1999, 81 models met the program specifications in place at that time. The diversity of products available, prior to the standard change in October 2000, appears to have increased—in 1998, approximately 41 percent of all available models were ENERGY STAR<sup>®</sup>-compliant, and in 2000 this percentage grew to 50 percent.

In addition, a number of new manufacturers have introduced new products, and existing manufacturers have offered additional brands. In May 1999, there were 12 manufacturers producing 16 unique brands of qualified clothes washers. In April 2002, there are 14 manufacturers producing 24 unique brands of qualified models. Table 4-10 compares manufacturers and brands.

### ***Market Share***

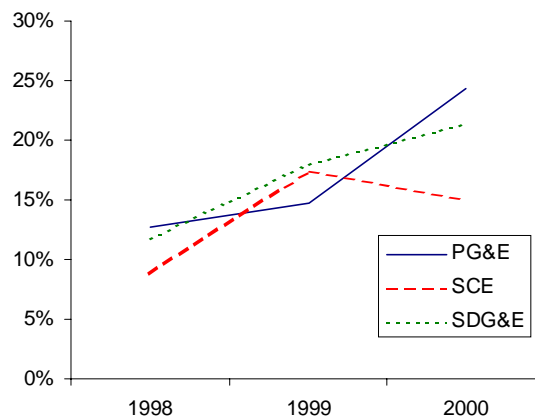
Again, data from the California RMST project is only available through 2000 and will not reflect sales of ENERGY STAR<sup>®</sup>-qualified room air conditioners once the standards change went into effect in October 2000. However, prior to this change, market share for ENERGY STAR<sup>®</sup>-qualified room air conditioners increased dramatically, from less than 2 percent in early 1998 to 31 percent in the third quarter of 1999. However, sales in 2000 have decreased and remained flat throughout the year (12 percent on average), despite the anticipated standards change in October 2000. Figure 4-6 depicts market share trends by utility.

**Table 4-11**  
**Comparison of ENERGY STAR® Qualified Room AC Manufacturers and Brands**  
*April 2002 vs. May 1999*

Manufacturer	Brand	Number of Qualified Models	
		April 2002	May 1999
LG Electronics	LG Electronics	40	0
	General Electric	6	3
	Kenmore	5	9
Fedders	Airtemp	6	0
	EQK	6	0
	Fedders	6	0
	Maytag	6	0
Frigidaire	Frigidaire	15	6
	Kenmore	5	0
	Gibson	1	5
	White-Westinghouse	1	8
Friedrich	Friedrich	21	15
Sharp	Sharp	8	3
Whirlpool	Whirlpool	6	6
	Crosley	2	3
Samsung	Samsung	6	0
	General Electric	1	0
Panasonic	Panasonic	7	2
Carrier	Carrier	4	3
Quasar	Quasar	3	2
Amana	Amana	1	4
Cold Point	Cold Point	1	1
Comfort-Aire	Comfort Aire	1	4
Danby	Danby	1	0
Other	Other	0	7
Total		159	81

Source: [www.energystar.gov/products/qualifying\\_appliances.xls](http://www.energystar.gov/products/qualifying_appliances.xls) (April 2002) and [www.energystar.gov](http://www.energystar.gov) (May 1999).

**Figure 4-6**  
**Market Share for ENERGY STAR®-Qualified Room Air Conditioners by Utility**  
 1998-2000



Source: *California Residential Efficiency Market Share Tracking: Appliances 2001*, RER, Inc., September 2001.

## 4.2 LIGHTING

### 4.2.1 Distribution Channels

The present lighting industry distribution system evolved after World War II from a system in which manufacturers sold mostly through hardware stores to one where manufacturers sold through a variety of retail outlets. The current distribution channels differ primarily depending on whether the product is hard-wired or free-standing (replaceable by CFLs or energy-efficient torchieres). Most hardwired lighting products are installed when the home is built or renovated, and usually by a construction contractor. However, end users do replace some existing hard-wired fixtures and install new ones over the life of a home. Freestanding lighting equipment, on the other hand, is usually purchased exclusively by owner-occupants from retail outlets that can be one of the giant home center chains, mass merchant chains, or independent stores.<sup>6</sup>

The wholesale/distributor segment of the residential lighting market is not an important leverage point for promoting energy efficiency because it sells less than 10 percent of their product to retail stores.<sup>7</sup> Wholesalers play only a minor role in the CFL market because most CFLs are sold through large discount chains that purchase directly from manufacturers. Hard-wired lighting equipment (fixtures), on the other hand, are sold mainly through wholesalers. This channel is relevant mainly to the new construction market.

<sup>6</sup> XENERGY, Inc. 1999, *Phase 1 Baseline Assessment for the Statewide Residential Lighting and Appliance Program*, prepared for San Diego Gas and Electric Company.

<sup>7</sup> XENERGY, Inc. 1998. *PG&E and SDG&E Commercial Lighting Market Effects Study*, prepared for Pacific Gas and Electric Company and San Diego Gas and Electric Company.

### 4.2.2 CFLs

According to the latest reports available from the California Residential Market Share Tracking (RMST) project,<sup>8</sup> the total market for CFLs in the U.S. rose from just over 6 million bulbs in 1999 to nearly 20 million in 2001. Sales of CFLs in CA increased from just under 1 million bulbs in 1999 to nearly 5 million bulbs by the end of 2001. CFL market share in California significantly increased during this timeframe, rising from just under 1 percent in 1999 to nearly 6 percent in 2001. This trend is considerable, given that in the rest of the U.S. CFL market share only grew to less than 2 percent by year-end 2001. Table 4-12 summarizes these data.

**Table 4-12**  
**Total CFL Sales and CFL Market Share (Percent of Total Residential Sales of Medium Screw-Based Bulbs), U.S. vs. California**  
*1999 to 2001*

<b>CFL Sales</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
U.S.	6,117,000	7,041,000	19,837,000
California	973,000	1,257,000	4,974,000
<b>CFL Market Share</b>			
U.S.	0.47%	0.53%	1.58%
California	0.92%	1.18%	5.67%

*Source: California Lamp Trends 2001, Volume 2. RER, Inc., April 2002.*

It is important to note that the data on CFL sales from the RMST project does not include sales through the major retail chain CostCo. As mentioned in Section 5, 7 million CFLs were discounted through PG&E's incentive program alone, the majority of which were distributed through CostCo. PG&E program managers have indicated that, during 2001, CostCo reportedly provided discounts for CFLs sold in PG&E's service territory once the utility's program funding was depleted.

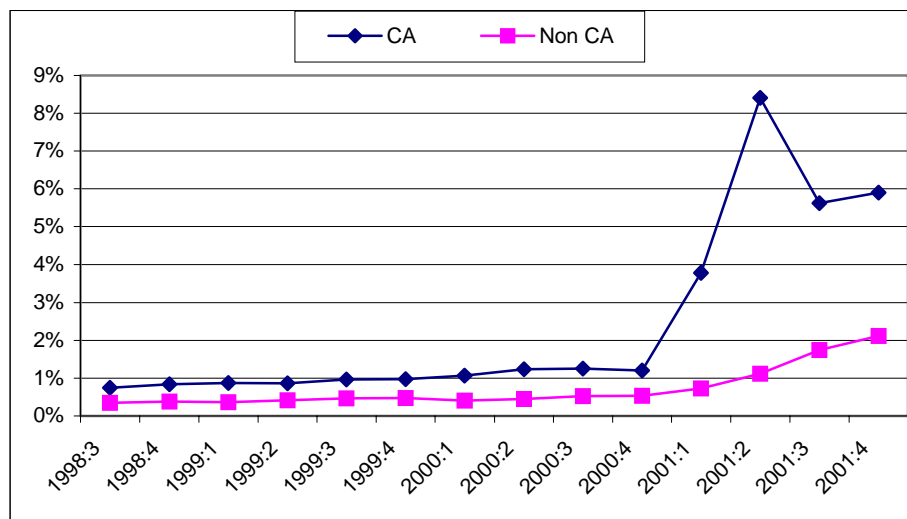
Figure 4-7 illustrates how CFL sales in California outpaced the rest of the country. At its peak during 2001, CFL market share had reached 8.4 percent. This figure depicts a slowdown in California CFL sales between the 2<sup>nd</sup> and 3<sup>rd</sup> quarters of 2001, but then a slight increase moving into year-end.

### 4.2.3 Torchieres

Ideally, data from the California RMST project would have been used to report on changes in market share over time for CFL torchieres. However, due to budgetary constraints, the RMST project does not include data on torchieres.

<sup>8</sup> RER, Inc., *California Lamp Trends 2001, Volume 2*, prepared as part of the Residential Market Share Tracking Project, managed by Southern California Edison.

**Figure 4-7**  
**Quarterly CFL Market Share**  
*U.S. vs. California, 1998-2001*



Source: *California Lamp Trends 2001, Volume 2*, RER, Inc, April 2002.

According to secondary research,<sup>9</sup> halogen torchieres account for the vast majority of torchiere sales to date. About 100 million units have been sold nationwide since the mid-1980s, and approximately 50 million units remain in use today. Incandescent torchieres have been available for a much longer time, but their annual sales were modest until safety concerns caused many manufacturers and retailers to shift from halogen to incandescent and fluorescent light sources after 1997.

About 12 million torchieres of all types are currently being sold each year nationwide, with California accounting for at least 11 percent of national sales, or 1.32 million units per year. Table 4-13 shows an estimate for torchiere market shares in California at approximately 10 percent for CFLs, 35 percent for incandescents, and 55 percent for halogen.

**Table 4-13**  
**Annual Torchiere Sales in California (2000)**

Torchiere type	Number sold	Market share
Halogen	726,000	55%
Incandescent	462,000	35%
CFL	132,000	10%

Source: *Proposal for Inclusion of a Torchiere Power Use Standard in the California Energy Commission's Title 20 Rulemaking*, NRDC and Ecos Consulting, November 2000.

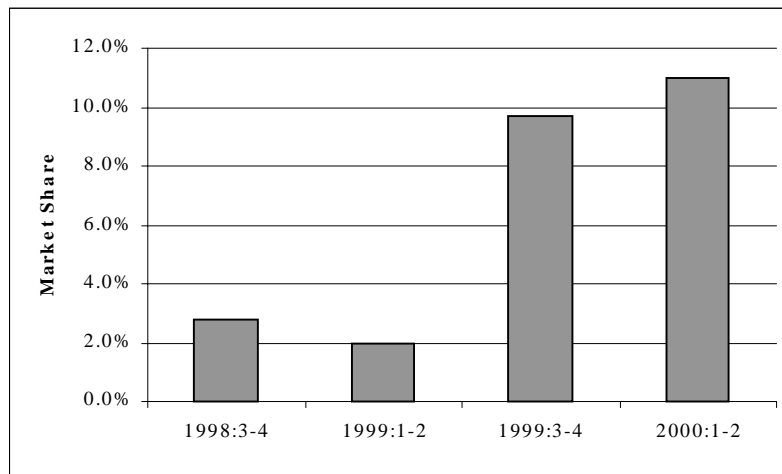
<sup>9</sup> Noah Horowitz, NRDC, and Chris Calwell, Ecos Consulting, *Proposal for Inclusion of a Torchiere Power Use Standard in the California Energy Commission's Title 20 Rulemaking*, November 2000.

#### 4.2.4 Fixtures

Again, ideally, data from the California RMST project would have been used to report on changes in market share over time for compact fluorescent hard-wired fixtures. However, due to budgetary constraints, the RMST project does not include data on retail purchases of these products. Instead, this project incorporates data from annual on-site surveys of residential new home construction in California.

Figure 4-8 presents data from the RMST new construction survey covering the second half of 1998 through the first half of 2000. Clearly, market share for compact fluorescent hard-wired lighting fixtures increased during this time in the new construction segment.

**Figure 4-8**  
**Compact Fluorescent Hard-Wired Interior Fixtures Market Share**  
*(New Construction Segment)*



Source: *California Residential Efficiency Market Share Tracking: New Construction 2000*, RER, Inc., July 2001.





This section provides an overview of investor-owned-utility-, state-, and municipal-utility-sponsored lighting and appliance programs offered to California residents in 2001. Lighting programs are presented first, followed by appliance programs. Other complementary programs, such as the Governor's 20/20 rebate program, are described at the end of this section.

## **5.1 LIGHTING PROGRAMS**

Over 10 million compact fluorescent lamps (CFLs) were provided at reduced cost or no cost to California residents in 2001. Utilities and the state sponsored ambitious programs, costing over \$40 million, to encourage residents to conserve energy through the replacement of incandescent bulbs with CFLs. Utilities also offered programs that provided free or reduced-cost CFL torchieres and CFL hard-wired fixtures. Table 5-1 summarizes the major lighting programs offered in California in 2001.

The major lighting programs targeted to California residents in 2001 are described in detail in the following subsections.

### **5.1.1 SCE Lighting Programs**

SCE offered four programs in 2001 that provided free or reduced-cost energy-efficient lighting equipment to residential customers. The utility teamed with CFL, torchiere, and fixture manufacturers to reduce the cost of equipment and to provide cooperative advertising. Approximately 200,000 reduced-cost CFLs were shipped to retailers through this program. Free compact fluorescent bulbs and torchieres were also provided to SCE customers at various giveaway events held at county and regional fairs, cultural, senior-citizen events, and festivals through SCE's Third-Party Initiative CFL and torchiere promotions. Over 25,000 CFLs have been given out and 5,000 torchieres have been exchanged through this program to date. In addition, over 400,000 CFLs were directly installed in multi-family complexes. Finally, through SCE's refrigerator recycling program, SCE customers could opt to take a five-pack of CFLs instead of a \$35 cash incentive for turning in their old refrigerator for recycling. Approximately 5,500 customers to date have opted for the CFLs instead of cash.

#### ***Upstream CFL, Torchiere, Fixture Buy Down***

SCE provided energy-efficient lighting equipment manufacturers with a buydown through this upstream residential lighting program. Eight manufacturers participated, representing 70 percent of the retail market. SCE bought down lighting equipment at the following amounts:

- \$3 off CFLs
- \$10 off CFL torchieres
- \$10 off CFL fixtures.

**Table 5-1**  
**Summary of Major Lighting Programs Offered in California in 2001**

<b>Lighting Program Description</b>	<b>Approx. # CFLs</b>	<b>Approx. # Torchieres</b>	<b>Approx. # Fixtures</b>
<b>PG&amp;E</b>			
Torchiere Buydown	-	35,000	-
POS CFL Rebate	7,085,500	-	-
Sub CFL Pilot Buydown	61,000	-	-
Torchiere/Fixture Mail-in Rebates	-	450	300
CFL Giveaway/Turn-in Events	4,500	-	-
MF Direct Install of CFLs	130,000	-	-
<i>Subtotal</i>	<i>7,281,000</i>	<i>35,450</i>	<i>300</i>
<b>SDG&amp;E</b>			
Torchiere, Fixture, CFL Buydown	18,000	16,000	7,000
CFL/Torchiere Giveaway/Turn-in Events for Seniors	18,000	1,000	-
MF Direct Install of CFLs	52,000	-	-
CFL Incentive through Mail-in Audit Program	700	-	-
<i>Subtotal</i>	<i>88,700</i>	<i>17,000</i>	<i>7,000</i>
<b>SCE</b>			
Torchiere, Fixture, CFL Buydown	357,000	59,000	16,000
CFL/Torchiere Giveaway/Turn-in Events for Hard-to-Reach	34,000	5,000	-
CFL Incentive through Refrigerator Recycling Program	27,500	-	-
MF Direct Install of CFLs	439,000	-	-
<i>Subtotal</i>	<i>857,500</i>	<i>64,000</i>	<i>16,000</i>
Powerwalk Program			
Door-to-door distribution of CFLs	1,900,000	-	-
<b>TOTAL</b>	<b>10,127,200</b>	<b>116,450</b>	<b>23,300</b>

SCE budgeted \$1.5 million towards this program effort and expended those funds by June of 2001. Over 430,000 reduced-price lighting products were ultimately shipped to retailers through this effort, broken down as follows:

- 356,533 CFLs
- 59,394 CFL torchieres
- 8,141 indoor CFL-only hardwired fixtures
- 8,141 outdoor CFL-only hardwired fixtures.

***Third Party Initiative — CFL and Torchiere Promotional Events***

SCE sponsored CFL giveaway and torchiere turn-in promotional events through a third-party initiative. Organizational Support Services (OSS) operated promotional exhibits on behalf of SCE at existing events such as county fairs, ethnic-related festivals, and senior-citizen events. At

these events, free CFLs and/or torchieres were distributed to “under-served” residents — non-English speakers, moderate-income residents, seniors, and those living in rural communities.

The promotional events offered residents free CFLs or free CFL torchieres upon turning in a halogen torchiere. Participants were also provided with educational materials, informing them of the best fixtures and applications for CFLs. Other literature was available to the public, including energy guides, energy-efficient lighting tip sheets, and information regarding residential rebates, ENERGY STAR<sup>®</sup> products, and other SCE programs such as CARE, LIEE, and energy audits. OSS set up CFL promotional exhibits at 18 county fairs, festivals, cultural, and retailer events throughout SCE territory during June 2001 - January 2002. As shown in Table 5-2, they distributed over 33,000 CFLs and exchanged 5,000 torchieres.

**Table 5-2**  
**Number of CFLs Distributed and Torchieres Exchanged Per Event**  
*(June 2001 – January 2002)*

Event	Location	Month	Target	# CFLs distributed	# Torchieres distributed
Beaumont Cherry Festival	Beaumont	June	Rural	2,160	0
Kaiser Permanente	Pasadena	June	Moderate Income	155	0
AQMD	Montclair	June	Seniors	127	0
Forever Honeymooners	El Monte	July	Chinese	612	0
King's Fair	Hanford	July	Rural	2,135	0
Energy Technology Fair	Victorville	July	Rural	450	162
Century TV Sales Event	Garden Grove	August	Vietnamese	5,040	0
Howard's TV Sales Event	San Gabriel	August	Chinese and Spanish-speaking	1,736	737
Energy Fair	San Fernando	August	Spanish-speaking	474	0
Green Schools Program	Rialto Area	Aug – Dec	Moderate Income	1,000	0
Tri-County Fair	Bishop	Aug – Sep	Rural	893	0
Desert Empire Fair	Ridgecrest	September	Rural	1,351	0
Tulare County Fair	Tulare	September	Rural	1,800	0
Sales Weekend – Superco	Monterey Park	October	Chinese	3,360	2,136
Halogen Lamp Exchange	Garden Grove	October	Korean	4,307	1,899
Senior Information Expo	San Dimas	November	Seniors	880	0
Festival of the Trees	Torrance	November	Seniors	1,280	66
Korean Market Fair	Garden Grove	Jan 2002	Korean	5,964	0
<b>TOTAL</b>				<b>33,724</b>	<b>5,000</b>

### ***Statewide Upstream Promotional Activities***

SCE promoted CFL lighting products through a cooperative advertising program with manufacturers and retailers. Forty-five manufacturer-retailer partners were formed through the program and provided with point-of-purchase materials from SCE. Field representatives from OSS and ECOS placed shelf talkers, verified signage, and replenished point-of-purchase inventory.

### ***Hard-to-Reach Multi-Family Direct Install (Summer Initiative) Program***

This statewide program, approved as part of the Public Utility Commission's (Commission) Summer 2000 Energy Efficiency Initiative, sought to achieve peak demand savings through the installation of energy-efficiency measures at multi-family apartment complexes, mobile home parks, and condominium complexes. Nine contractors implemented the program in 2001 in SCE's service territory, installing between 170,000 and 175,000 CFLs.

### ***Multi-family Residential Contractor Program (RCP)***

SCE's RCP Program budget was nearly \$6.5 million in 2001, which included \$3,850,000 in SBx1-5 funding. In this program, over 200 multi-family complexes were treated and 263,467 CFLs were installed. Also installed through this program were 128 room air conditioners and 60 gas boiler controllers.

### ***CFL Incentives Offered Through the Refrigerator Recycling Program***

In March of 2001, SCE introduced an option for its refrigerator recycling participants. Instead of receiving the \$35 cash incentive, participants could opt to receive a five-pack of CFLs, worth about \$50. The CFL incentive was actively marketed through the refrigerator recycling program. A total of \$170,000 was budgeted for this component of the refrigerator recycling program. Once the CFL option was introduced, 10% percent of participants opted to take the CFLs, or a total of 5,500 participants.

## ***5.1.2 PG&E Lighting Programs***

PG&E offered a number of lighting programs in 2001, consisting of point-of-purchase rebates, manufacturer buydowns, customer mail-in rebates, manufacturer buydowns, and giveaways.

PG&E rebated over seven million CFLs in 2001 through its point-of-purchase rebate program. Additionally, the price for over 30,000 torchieres was reduced by \$10 through a manufacturer buydown. Consumer incentives for about 1,100 torchieres, fixtures, and motion sensors were provided through PG&E's 1-2-3 Cashback home improvement rebates. Finally, about 4,500 CFLs were given away at community events held in PG&E's service territory.

### ***Upstream Torchiera Buy Down***

PG&E provided energy-efficient lighting equipment manufacturers with a buydown through this upstream residential lighting program. A \$10 buydown was provided to participating manufacturers for CFL torchieres.

PG&E budgeted \$400,000 towards this program effort, spending just over \$350,000 through April, when the program ended. A total of 35,085 discounted torchieres were ultimately shipped to retailers through this program.

### ***Point-of-Sale CFL Rebate***

PG&E discounted an unprecedented amount of CFLs in 2001 through its point-of-sale rebate program. Approximately seven million bulbs were discounted by \$3 at the register of participating retailers. Over 340 stores participated, representing more than 30 retail companies. Costco by far discounted the most bulbs—over 80 percent. PG&E originally budgeted \$6 million for incentives and allocated an additional \$15 million from SBx1-5 funds.

Participating retailers were required to post signage indicating to customers that qualifying CFLs would be discounted by \$3 at the register. Some stores, like Home Depot, incorporated PG&E's message into their own signage.

### ***1-2-3 Cashback Home Improvement Rebates***

PG&E introduced its 1-2-3 Cashback program in 2001 to encourage residential customers to adopt energy-efficient measures. One of the program's components is a mail-in rebate for various energy-efficient home improvement measures, including the following ENERGYSTAR lighting products:

- Compact fluorescent torchieres
- Indoor CFL-only hard-wired fixtures
- Outdoor CFL-only hardwired fixtures
- Motion sensors.

PG&E residential customers could receive \$10 per lighting product by mailing in the 1-2-3 Cashback Home Improvement rebate application. The home improvement rebates were marketed through several vehicles:

- Over 500,000 applications were mass-mailed to PG&E customers
- Applications were posted on-line at [www.pge.com](http://www.pge.com)
- Applications were available at local Home Depot stores
- The Residential Contractor Program promoted the program
- Five community-based organizations promoted the program by providing customers with applications through various local events and neighborhood canvassing

- Large retailers such as Sears, Home Depot, and ACE stores signed agreements with PG&E to display signs and posters promoting the program in over 120 stores.

The total number of lighting products rebated in 2001 is as follows:

- 464 fluorescent torchieres
- 219 indoor hard-wired fluorescent fixtures
- 98 outdoor hardwired fluorescent fixtures
- 346 motion sensors.

The total budget dedicated to rebates for this program component was \$11,270.<sup>1</sup>

### ***Sub-CFL Pilot Manufacturer Buy-Down Program***

This residential lighting program was designed to encourage the production and sales of sub-CFLs, an emerging energy-efficient lighting technology. The program consisted of a manufacturer buydown pilot, with a goal to reduce the product price to less than \$5, and included distributor education. Apartment associations were provided with information on the benefits of sub-CFLs to encourage them to buy the product. The unit goals for the buydown were 89,000, and PG&E discounted 61,398 bulbs in 2001 (30,000 were sold at the end of 2000).

### ***CFL Giveaway Events***

PG&E gave away CFLs to its residential customers through three giveaway events held in 2001. About 1,500 bulbs were given away to San Francisco residents at a City Hall event held by PG&E. Residents were required to turn in an incandescent bulb to receive one free CFL. This event was well publicized and as a result very well attended.

CFLs were also given away at a CFL exchange event, sponsored by PG&E, Marin County Community Development Agency, and Yardbirds. PG&E provided Yardbirds an allocation of \$3 per bulb, and Yardbirds distributed 2,850 CFLs at this event.

The final giveaway event was sponsored by PG&E and the Northern California Diversity Council, where PG&E gave away 500 free CFLs.

### ***Statewide Upstream Promotional Activities***

PG&E promoted CFL lighting products with point-of-purchase materials, advertising campaigns, and through its field representative activities. Cooperative promotional activities consisted of special displays and signs, highlighting PG&E's point-of-sale rebate opportunity. RHA/ECOS provided point-of-purchase promotional and field services support throughout the first part of 2001. PG&E had agreements with 40 retailers (representing over 400 storefronts) to promote various Energy Star lighting products. Retailers made decisions as to which products were promoted and over 22 different manufacturers were represented.

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<sup>1</sup> The accomplishments and budgets reported here do not include the multi-family program component.

### ***Hard-to-Reach Multi-Family Direct Install (Summer Initiative) Program***

This statewide program, described above for SCE, was designed to achieve peak demand savings through the installation of energy-efficiency measures at multi-family apartment complexes, mobile home parks, and condominium complexes. About 100,000 CFLs were directly installed through this program.

### ***Multi-family Residential Contractor Program (RCP)***

Eight contractors implemented the program in 2001 on behalf of PG&E, treating 280 complexes. A total of 29,506 CFLs and lighting fixtures were installed through the program. Contractors identify potential complexes for treatment and offer the proper owners rebated ENERGY STAR<sup>®</sup> equipment to install in common areas and individual tenant dwellings. PG&E budgeted \$1.5 million for this program in 2001.

#### ***5.1.3 SDG&E Lighting Programs***

SDG&E offered three programs in 2001 that provided free or reduced-cost energy-efficient lighting equipment to residential customers. The utility teamed with compact fluorescent bulb, torchiere, and fixture manufacturers to reduce the cost of equipment and to provide cooperative advertising. Over 40,000 reduced-cost CFLs, torchieres, and fixtures were shipped to retailers through this program. About 20,000 free compact fluorescent bulbs and torchieres were also provided to the elderly at turn-in events held at dozens of senior centers in San Diego. Finally, through the Statewide Hard-to-Reach Multi-Family Program, over 500 complexes were provided with ENERGYSTAR lighting equipment, appliances, water heaters, and HVAC equipment. Many of these complexes received CFLs for common areas and for individual tenant homes.

#### ***Upstream CFL, Torchiere, Fixture Buydown***

SDG&E provided energy-efficient lighting equipment manufacturers with a buydown through this upstream residential lighting program. SDG&E bought down lighting equipment at the following amounts:

- \$3 off CFLs
- \$10 off CFL torchieres
- \$10 off indoor CFL fixtures
- \$7 off outdoor CFL fixtures.

SDG&E budgeted \$1.6 million towards this program effort and expended those funds by July of 2001. Over 40,000 reduced-price lighting products were ultimately shipped to retailers through this effort, broken down as follows:

- 18,432 CFLs
- 16,164 CFL torchieres
- 7,050 fixtures.



### ***Turn-In Events for Seniors***

As a continuation of its PY2000 Summer Initiative efforts, SDG&E incorporated senior center turn-in events into its 2001 umbrella residential lighting program. A waiting list was created mid-way through the year as word of mouth traveled and centers throughout San Diego expressed interest in the program. The initial budget of \$50,000 (plus leftover PY2000 Summer Initiative funds) was exhausted in June of 2001, and SBx1-5 funds provided supplemental funding of \$524,000 allowing wait-listed centers the opportunity to participate.

Over 60 events were held in 2001, where more than 18,000 incandescent bulbs were exchanged for CFLs, and more than 1,000 halogen torchieres were exchanged for ENERGY STAR<sup>®</sup> torchieres.

### ***Statewide Upstream Promotional Activities***

In addition, SDG&E promoted CFL lighting products with point-of-purchase materials, advertising campaigns, and through its field representative activities.

### ***Multi-Family Direct Install Programs***

SDG&E also implemented the multi-family direct install program that was part of the Statewide Summer Initiative Program. Ten contractors implemented the program in 2001 on behalf of SDG&E, treating over 500 complexes. Just over \$1 million was budgeted by SDG&E for this program in 2001, which was exhausted in May of 2001. A total of 24,591 CFLs were installed through this effort. In addition, SDG&E installed 22,653 CFLs in multi-family complexes through the multi-family RCP.

### ***CFL Incentive Offered Through the Mail-in Audit Program***

SDG&E's mail-in audit program has traditionally provided one free CFL to all participants. Historically, the program has had high participation levels, giving away tens of thousands of CFLs each year. However, in 2001, the program was scaled back and approximately 700 of SDG&E's customers participated in the mail-in audit program and received a free CFL for their participation.

#### ***5.1.4 State of California's Powerwalk Program***

A major lighting program was administered by the state in 2001, whereby 1.9 million CFLs were given away to approximately 475,000 low-income residents in California. The California Conservation Corps (CCC) implemented the program, which began on May 19, going door to door, handing out four CFLs per home in low-income neighborhoods. The program ended on August 31, 2001.

The CCC was awarded \$20 million to deliver the program. The final per-unit cost of bulbs procured by CCC was roughly \$5.25. Initially, CCC estimated that they could distribute 1.5 million bulbs, expecting a per-bulb cost ranging from \$6 to \$8.34. As more distributors learned



of the program, per-bulb cost decreased to as little as \$2.75 per bulb. CCC reportedly had some difficulty ensuring timely delivery by CFL distributors, but there were no major problems ensuring that manufacturers could provide a total of 2 million bulbs.

The CCC allocated a percentage of the total number of bulbs the program would deliver to each county in California based on the number of households in each county living at 200-percent Federal poverty level or below. Once a certain amount of bulbs was allocated to a county, county-based organizations familiar with their low-income communities identified low-income areas in the county by ZIP code, census track, or street boundaries. CCC representatives then canvassed the identified neighborhoods, providing four CFLs to residents that were home and wanted to receive the bulbs. Households could opt to receive fewer than four bulbs, but residents rarely chose not to take all four.

### 5.1.5 Municipal Utility Lighting Programs

Most of California's municipal utilities offered lighting programs to their customers in 2001, providing discounted or no-cost energy efficient lighting products. Table 5-3 describes some of the municipal utility lighting programs.

**Table 5-3**  
**2001 Municipal Utility Lighting Programs**

<b>Municipal Utility</b>	<b>Program Name</b>	<b>Lighting Product</b>	<b>Program Delivery</b>	<b>Other</b>
Alameda Power & Telecom	Great White Light Sale	CFL	\$5 Rebate	Mail-in
Anaheim Public Utilities	Dusk to Dawn Lighting	High pressure sodium lamp w/ photocell	Giveaway	
Pasadena Water & Power	Compact Fluorescent Lamp Coupons	CFL	6 free (for low-income)	For low-income residents who receive the Utility Assistance Rebate
Roseville Electric	CFL Rebate Program	CFL, CFL fixtures	Rebate	
Sacramento MUD	Security Lighting Program	High pressure sodium lamp w/ photocell	Bill credit	Purchase from SMUD or local retailers
Sacramento MUD	Compact Fluorescent Lamp Coupons	CFL	Coupon	Coupons mailed out this month- program will run through Sept. 2002; \$1.6m budget

## 5.2 APPLIANCE PROGRAMS

About 200,000 ENERGY STAR<sup>®</sup> appliances were rebated by utilities in 2001 through their energy-efficient appliance programs. Table 5-4 provides a summary of the appliance rebate programs offered by PG&E, SCE, and SDG&E.

**Table 5-4  
Summary of Utility Appliance Programs**

<b>Appliance Rebated</b>	<b>PG&amp;E</b>	<b>SCE</b>	<b>SDG&amp;E</b>	<b>Total</b>
Refrigerator	55,593	44,000	30,000	129,593
Clothes washer	30,000	0	8,000	38,000
Dishwasher	24,000	0	7,700	31,700
Room AC	1,400	200	400	2,000
<b>Total</b>	<b>110,993</b>	<b>44,200</b>	<b>46,100</b>	<b>201,293</b>

In 2001, many consumers opted to replace an old or inoperable appliance with an ENERGY STAR<sup>®</sup> appliance to aid in statewide conservation efforts and to decrease their utility bills. The utility-provided cash incentives diminished the effect of efficient appliances' higher up-front costs, and helped consumers identify energy-efficient products through promotion and endorsement of the ENERGY STAR<sup>®</sup> label. Statewide promotional efforts by the IOUs assisted retailers in advertising the benefits of purchasing ENERGY STAR<sup>®</sup>-labeled products. The major appliance programs offered in California in 2001 are described below, including municipal utility programs.

### **5.2.1 SCE Appliance Programs**

SCE appliance programs in 2001 consisted mainly of rebates for ENERGY STAR<sup>®</sup> refrigerators and room air conditioners. SCE also provided cooperative advertising to manufacturers and retailers and in addition offered incentives to multi-family complex property owners to install ENERGY STAR<sup>®</sup> appliances in tenant dwellings.

#### ***Downstream Appliance Rebates***

SCE offered its residential customers \$50 for ENERGYSTAR room air conditioners, \$100 for 2001 DOE-compliant refrigerators (through June 30, 2001), and \$125 for 2001 ENERGY STAR<sup>®</sup>-qualified refrigerators. SCE customers obtained rebate applications by calling the utility and subsequently receiving an application in the mail. SCE advertised the availability of rebates through bill inserts and mailers, and the local media also focused on the program, increasing customer exposure.

SCE budgeted \$1.6 million for incentives, and funds were fully subscribed as of June 2001. The program was extended due to additional funds provided by SBx1-5. A total of 213 room air conditioners, 20,145 DOE-compliant refrigerators, and 23,732 ENERGYSTAR-qualified refrigerators were rebated through the program, for a total of just under \$5 million in incentives.

#### ***Statewide Upstream Promotional Activities***

SCE budgeted \$250,000 for cooperative advertising activities for manufacturers and retailers to complement the downstream appliance rebate program. This program component was standardized statewide. In SCE territory, community-based organizations were used to assist retailers with in-store promotions, to verify that a sufficient stock of materials was available, and

to verify that materials were being displayed properly. This activity was intended to target hard-to-reach markets.

SCE teamed with five refrigerator manufacturers (GE, Amana, Maytag, Whirlpool, and Electrolux) for its Appliance Coop program. The manufacturers teamed with retailers to accomplish sales and determine advertisements. SCE also had agreements with over 200 retailers in their service territory who agreed to use point-of-purchase materials for refrigerators and room air conditioners.

### ***Multi-family Residential Contractor Program (RCP)***

As mentioned above, SCE installed 128 room air conditioners through the multi-family component of the RCP.

### **5.2.2 PG&E Appliance Programs**

PG&E appliance programs in 2001 consisted rebates for ENERGY STAR<sup>®</sup> appliances, cooperative advertising to manufacturers and retailers.

#### ***Downstream Appliance Rebates***

PG&E offered its residential customers between \$50 and \$125 for purchasing ENERGY STAR<sup>®</sup> appliances between the end of March and September of 2001.<sup>2</sup> Rebate applications were available at 411 participating retailers. The relevant rebate amounts are shown below:

- ENERGY STAR<sup>®</sup> clothes washer - \$75
- ENERGY STAR<sup>®</sup> dishwasher - \$50
- ENERGY STAR<sup>®</sup> room air conditioner - \$50
- 2001 DOE-compliant refrigerator - \$75 (through June 30)
- ENERGY STAR<sup>®</sup> refrigerator - \$200 (June 1 – July 31)
- ENERGY STAR<sup>®</sup> refrigerator - \$125 (August 1 and after).

PG&E budgeted a total of \$7.4 million for this effort. Per-unit achievements are as follows:

- Clothes washer rebates—29,887
- Dishwasher rebates—24,243
- Room air conditioner rebates—1,413
- 2001 DOE-compliant refrigerator rebates—15,632
- ENERGY STAR<sup>®</sup> refrigerator rebates (\$200)—39,076
- ENERGY STAR<sup>®</sup> refrigerator (\$125)—885.

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<sup>2</sup> DOE-compliant refrigerator rebates expired on June 30, 2001.

### ***Statewide Upstream Promotional Activities***

PG&E budgeted \$900,000 for co-operative advertising activities for manufacturers and retailers to complement the statewide standardized downstream appliance rebate program.

#### ***5.2.3 SDG&E Appliance Programs***

SDG&E appliance programs in 2001 consisted mainly of rebates for ENERGY STAR<sup>®</sup> refrigerators, clothes washers, dishwashers, and room air conditioners. SDG&E also provided co-operative advertising to manufacturers and retailers, and in addition offered incentives to multi-family complex property owners to install ENERGY STAR<sup>®</sup> appliances in tenant dwellings.

### ***Downstream Appliance Rebates***

SDG&E offered its residential customers between \$50 and \$125 for purchasing ENERGY STAR<sup>®</sup> appliances between April and September of 2001.<sup>3</sup> Rebate applications were available at participating retailers. The amount of rebate per appliance is shown below:

- ENERGY STAR<sup>®</sup> clothes washer—\$75
- ENERGY STAR<sup>®</sup> dishwasher—\$50
- ENERGY STAR<sup>®</sup> room air conditioner—\$50
- 2001 DOE-compliant refrigerator—\$100
- ENERGY STAR<sup>®</sup> refrigerator—\$100.

SDG&E budgeted \$1.4 million for this effort, and funds were exhausted in July of 2001. The program was extended by \$4,098,556 in additional funds from SBx1-5. Rebates were provided as follows:

- Clothes washer rebates—8,081
- Dishwasher rebates—7,671
- Room air conditioner rebates—386
- Refrigerator rebates—29,934.

### ***Statewide Upstream Promotional Activities***

SDG&E budgeted just under \$250,000 for co-operative advertising activities for manufacturers and retailers to complement the downstream appliance rebate program. This program component was standardized statewide.

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<sup>3</sup> Clothes washer rebates were available from January through June of 2001. DOE-compliant refrigerator rebates expired on June 30, 2001.

***Statewide Hard-to-Reach Multi-Family Program***

As stated previously, this statewide program targeted multi-family apartment complexes, mobile home parks, and condominium complexes. Ten contractors implemented the program in 2001 on behalf of SDG&E, treating over 500 complexes.

**5.3 OTHER RELATED PROGRAMS**

Two major non-utility programs, Flex Your Power and the 20/20 Program, were very visible in California this year, complementing most of the lighting and appliance programs described above. Flex Your Power is an advertising campaign sponsored by the state's Department of Consumer Affairs. The campaign is intensive and consisted of televisions, radio, and print advertisements informing California residents of the energy crisis and encouraging low-cost conservation activities. The 20/20 Program was initiated by the Governor and provides residents with a 20-percent bill reduction if they conserved 20 percent over last year's consumption for 3 consecutive months in the summer of 2001. About 30 percent of customers of investor-owned utilities participated in 20/20 Program.



This section presents data from consumer surveys, mystery shops, and market tracking studies that describe and explain changes over time in the market for energy-efficient lighting equipment and appliances. The consumer survey data consists of primary data collected in support of this study in late 2001 and baseline data compiled from several prior consumer survey and mystery shopper efforts, including:

- CBEE Baseline Study on Public Awareness and Attitudes Toward Energy Efficiency (1998)
- California Residential Lighting and Appliance Study—Phase 1 (1998) and Phase 3 (2000).

### 6.1 ENERGY EFFICIENCY PRODUCT MARKET SHARE

As described in Section 4, market share for energy-efficient appliances and lighting products has increased over time:

- **Appliances:** Market share for ENERGY STAR<sup>®</sup> qualified appliances has steadily increased over time, as shown in Table 6-1.

**Table 6-1**  
**Annual ENERGY STAR<sup>®</sup> Appliance Market Share**  
*1998-2000*

Appliance	Annual Market Share		
	1998	1999	2000
Refrigerators	17%	26%	30%
Clothes Washers	12%	18%	19%
Dishwashers	17%	29%	32%
Room AC	7%	20%	12%

Source: California Residential Efficiency Market Share Tracking: Appliances 2001, RER Inc., September 2001.

- **Lighting:** The average CFL market share in California in 2001 was 5.7 percent, representing a dramatic increase over time. Before 2001, CFL market shares steadily increased from 0.8 percent in the last half of 1998 to 1.2 percent in the last quarter of 2000. In addition, CFL sales in California have significantly outpaced sales in the rest of the U.S.—fourth quarter 2001 data show that the national CFL market share is just over 2 percent. Data on compact fluorescent hard-wired fixtures suggest that market share is increasing in the new construction segment, while data on torchiere market share trends is unavailable.

## 6.2 LEVEL OF CONSUMER ENERGY-EFFICIENCY AWARENESS AND KNOWLEDGE

The general population's level of awareness and knowledge concerning energy efficiency is a key factor that ultimately affects energy-efficient equipment market shares. General awareness of conservation and energy efficiency is an important indicator of whether someone may be aware of and would consider purchasing energy-efficient products. Whether or not someone is familiar with a specific energy-efficient product technology can present a barrier to increasing market shares of that energy-efficient product. Over time, XENERGY has seen an increase in the overall awareness of energy conservation and the product-specific awareness of energy-efficient technologies. The report presents changes in these various dimensions of awareness:

- **General Awareness.** Respondent self-rating of knowledge of ways to save energy at home and lower energy bills
- **Unaided Awareness.** Respondent suggestions for energy-efficiency improvements to lower household energy bills
- **Product-Specific Awareness.** Respondent awareness of energy-efficiency technologies and the ENERGY STAR<sup>®</sup> label.

General self-reported awareness of ways to save energy in the home has increased moderately over the past few years, as shown in Table 6-2. Whereas in 1998, 42 percent rated themselves to be very knowledgeable about ways to save energy in their home (a rating of between 8 and 10 on a scale from 1 to 10), in 2001, 57 percent rated themselves to be very knowledgeable. Very few rate themselves as having no or very little knowledge.

Knowledge and awareness of energy improvement possibilities for the home has increased, while the types of improvements that people cite has changed. Almost every survey respondent in the 2001 survey could name at least one valid improvement they could adopt in their home to save energy, up from two-thirds in 1998. However, while in 1998 many people mentioned insulation or other energy-efficiency investments, in 2001 most people thought of behavioral measures such as turning off lights and adjusting thermostats. In 2001, a significant portion of the population also mentioned low-cost measures such as CFLs and caulking/weatherstripping.

Table 6-3 shows the change over time in the percentage of the population that is aware of at least one improvement they could adopt in their home to save energy, while Table 6-4 shows the top five improvements cited in both 1998 and 2001.



**Table 6-2**  
**General Knowledge Levels**

*How knowledgeable are you about ways to save energy in your home?*

	2001	1998
1 Not at all knowledgeable	1%	3%
2	1%	2%
3	1%	3%
4	1%	4%
5	11%	22%
6	8%	8%
7	21%	15%
8	30%	22%
9	11%	7%
10 Extremely Knowledgeable	16%	13%
Don't Know	1%	1%
Top Box (>7)	57%	42%
Mean	7.6	6.7
Base	721	1,170

Source: Phase 4 CRLAP (2001), CBEE (1998)

**Table 6-3**  
**Percentage of General Population That Could Cite at Least One Energy Efficiency Improvement**

Cited at least one EE improvement	2001	1998
Yes	99%	67%
No	1%	33%
Base	721	1,170

Source: Phase 4 CRLAP (2001), CBEE (1998)

**Table 6-4**  
**Top Five Energy Efficiency Improvements Cited by General Population—Unprompted**

Rank	2001		1998	
	Measure	Percent	Measure	Percent
1	Turning off lights	29%	Insulation of ceilings, walls, or floors	31%
2	Adjusting thermostats	24%	Weatherstripping	23%
3	Weatherstripping	14%	Turning off lights	20%
4	CFLs	13%	Double pane windows	19%
5	Refrigerator replacement	13%	Insulation of water heater tanks and pipes	14%
	Base	721	Base	1,170

Source: Phase 4 CRLAP (2001), CBEE (1998)

Awareness of CFLs as a technology is high. Two-thirds of the population have heard of CFLs, while around one-third is aware of CFL floor lamps and 15 percent of CFL-dedicated fixtures. CFL awareness has risen 10 percent since 1998. Table 6-5 summarizes CFL technology awareness for 1998 and 2001.

**Table 6-5**  
**Percentage of General Population that is Aware of CFL Technologies**

Technology	2001	1998
CFLs	68%	58%
CFL Floor lamps	31%	na
CFL Fixtures	15%	na
Base	721	334

*Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)*

More people are learning about CFL technologies through the media, by way of TV, the Internet, and newspapers. In-store promotions are still the most frequent means by which the public becomes aware of CFLs. Table 6-6 shows the top three sources by which people became aware of CFLs.

**Table 6-6**  
**Top Three Sources by which Respondent First Became Aware of CFLs**

Rank	2001		1998	
	Source	Percent	Source	Percent
1	In-store point of purchase materials	41%	In-store point of purchase materials	35%
2	Advertising on TV, Internet, newspaper	39%	Friends or family	23%
3	Friends or family	22%	Advertising on TV, Internet, newspaper	18%
	Base	490	Base	1,170

*Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)*

Table 6-7 presents the top five sources that refrigerator purchasers in 1998 and 2001 utilized for determining refrigerator efficiency. Despite the relatively small sample size achieved in 2001, these data show trends similar to that described above for CFL awareness. That is, sources for becoming aware of appliance efficiency have changed since 1998 in that people may be relying more on Consumer Reports and TV, the Internet, and newspaper advertising in 2001. Fewer people report relying on salespeople. The apparent decrease in those who looked to the ENERGY STAR<sup>®</sup> label is coupled with the increase in those relying on the Energy Guide label. This result may suggest that in 2001 people could better differentiate between ENERGY STAR<sup>®</sup> and the Energy Guide label.

Despite the relatively few refrigerator purchasers in 2001 who reported they knew their refrigerator was efficient because of the ENERGY STAR<sup>®</sup> label, awareness of the label among the general population in 2001 is high. According to the survey results, 62 percent of the general population reported being aware of the ENERGY STAR<sup>®</sup> label and nearly all were able to accurately describe what it signifies.

**Table 6-7**  
**Top Five Sources for Determining Refrigerator Efficiency**

Rank	2001		1998	
	Source	Percent	Source	Percent
1	Point-of-purchase materials	33%	Point-of-purchase materials	28%
2	DOE Energy Guide label	29%	ENERGY STAR <sup>®</sup> label	20%
3	Non-utility advertising (TV, Internet, newspaper, magazines)	28%	Salesperson	15%
4	Consumer reports	26%	DOE Energy Guide Label	9%
5	Friends or family	14%	Consumer reports	5%
	Base	38	Base	140

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

### 6.3 CONSUMER ATTITUDES TOWARDS ENERGY EFFICIENCY

Just as consumer awareness of energy efficiency affects energy-efficient product market share, consumer attitudes are also key. Underlying opinions of and inclinations towards efficiency and conservation ultimately effect willingness to purchase energy-efficient equipment. Whether someone will actually purchase energy-efficient products depends upon a complex set of decisions, which are based on an individual or households' overall feelings towards conservation, their relative ranking of all the various product attributes, and any biases they may have towards energy-efficient product performance. This section presents changes in various dimensions of consumer attitudes:

- **General Attitudes.** Respondent self-ranking of general attitudes towards conservation
- **Attitudes Towards Product Attributes.** Respondent ranking of the importance of product attributes
- **Product-Specific Attitudes.** Respondent attitudes towards specific energy-efficient products.

Consumer attitudes towards conservation and energy efficiency have improved over time. People are more likely to say that using less energy is worthwhile due to the positive effects on the environment and are also more likely to agree that energy efficiency doesn't mean sacrifice in comfort. Interestingly, fewer people in 2001 strongly agreed with the statement that we should use less electricity instead of building power plants. Clearly, consumers in 2001 felt that energy efficiency and conservation (demand reduction) went hand in hand with building more power plants (supply increase) in meeting the state's energy needs.

Table 6-8 presents mean scores for several attitude statements from 1998 and 2001. Note that people felt strongly that their conservation efforts over the summer of 2001 helped mitigate the effects of the energy crisis.

**Table 6-8**  
**Mean Agreement Scores for Attitude Statements**

Statement	2001	1998
My life is too busy to worry about making energy-related improvements in my home.	2.7	3.7
It is worth it to me for my household to use less energy in order to help preserve the environment.	8.2	7.7
Instead of building new power plants, customers should use less electricity	5.7	6.2
It is possible to save energy without sacrificing comfort by being energy efficient.	7.9	7.7
Conservation efforts helped reduce the effects of the energy crisis this summer	7.7	NA
Base	721	1,170

*Scale: 1 = "strongly disagree," 10 = "strongly agree"*

*Source: Phase 4 CRLAP (2001), CBEE (1998)*

Consumer attitudes towards various product attributes affect their willingness to purchase an energy-efficient product. For example, brand-conscious consumers would be unlikely to purchase an energy-efficient unit if they had to choose a less desirable brand. Consumers looking for specific appliance or light bulb features are also less likely to purchase an energy-efficient product if it means sacrificing an important feature.

Table 6-9 presents mean scores for various light bulb attributes, such as brand, wattage, and price. Wattage is the most important attribute, followed by purchase price and bulb type. When comparing how the relative importance of light bulb attributes has changed over time, the data is somewhat inconclusive. However, it is clear that brand is less important than it was in 1998, while the importance of purchase price has remained about the same. Electricity operating costs would appear to have seemed more important to 1998 survey respondents as compared to those in 2001, but since bulb wattage was separated out in 2001 it is difficult to make an accurate comparison.

**Table 6-9**  
**Importance of Various Factors When Choosing Between Different Light Bulbs**

Factor	Mean Score	
	2001	1998
Brand	3.6	4.6
Bulb wattage	8.4	na
Purchase price	7.6	7.3
Bulb type (e.g., incandescent, halogen, fluorescent, etc.)	7.3	na
Annual operating cost for electricity	5.6	6.9
Base	58	334

*Scale: 1 = "not at all important," 10 = "extremely important"*

*Source: Phase 4 CRLAP (2001), CBEE (1998)*

While the data is inconclusive for determining whether energy efficiency has become a more important purchase consideration over time for light bulbs, the data does indicate that appliance

purchasers are now much more likely to consider energy efficiency as an important factor. Table 6-10 presents the percentage of appliance purchasers who mentioned energy efficiency when asked about the most important factors they consider when making their purchase.

**Table 6-10**  
**Percentage of Appliance Purchasers Who Consider Energy Efficiency as an Important Factor—Unprompted**

Appliance	Stated EE as an Important Factor	
	2001	1998
Refrigerator	64%	20%
Clothes washer	59%	15%
Dishwasher	41%	14%
Room AC	46%	21%

*Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)*

Even consumers with a strong conservation ethic would be unwilling to buy a product that they felt wouldn't perform well. Perceptions of the performance of energy-efficiency products is a significant potential barrier to increasing market shares.

Consumer satisfaction with CFL performance has been mixed over the years. The first CFLs that were introduced into the market were often inferior to the incandescent bulbs that consumers were used to in terms of performance (e.g., inferior light quality, turn-on delay, color rendering, and flickering). Consumers who used CFLs in 2001 were overall very satisfied with their performance. Only 11 percent were unsatisfied with the CFLs. Another indicator that CFL performance is no longer a barrier in increasing CFL market share is that very few people are *not* purchasing CFLs because of perceived performance issues. Of those who said they were very unlikely to purchase CFLs in the future, only 13 percent said that was because of performance-related issues.

Energy-efficient appliances have not been perceived as having performance problems. In both 1998 and 2001, we asked purchasers who didn't buy energy efficient why not, and none reported performance issues. This is not surprising as energy-efficient appliances are not a particular technology apart from standard appliances, whereas CFLs are perceived by the general public as a new technology, different than the incandescent bulbs to which they have grown accustomed.

While product performance barriers for appliances is insignificant and decreasing for CFLs, perceptions of energy cost savings potential may still pose a hurdle for achieving further increases in market shares. This potential barrier may be more significant as the general public begins adopting energy-efficient products. The early-adopters or innovators were much more likely to be savvy about making payback calculations and being informed about the energy savings implications of their choices. At present, there is a small but significant segment of the population that is uncertain whether the higher incremental costs associated with energy-efficient products are justified through energy savings, particularly in the case of CFLs.

As part of the consumer survey that was conducted for this study, we asked the general population if they would be likely to purchase CFLs in the future at regular price, i.e., between \$5 and \$15. Over one-third said they would be unlikely to do so, and 42 percent of those said they wouldn't be likely to make such a purchase because of the high cost or because the savings would not justify the high cost.

Appliance purchasers are less likely to be concerned about justifying the higher up-front costs of energy-efficient units. This may be because the incremental cost is much smaller than the total cost of the appliance, while for CFLs the incremental cost is several times the cost of one incandescent bulb. Still, XENERGY found in their consumer survey that 10 percent of those who purchased an energy-efficient refrigerator were uncertain of the potential savings they would receive. In 1998, no energy-efficient refrigerator purchasers expressed such concerns. As mentioned above, it is likely as the market shares for energy-efficient products increases, we may see an increase in uncertainty of savings claims as less savvy consumers enter the market.

#### 6.4 SELF-REPORTED CONSUMER ENERGY-EFFICIENCY BEHAVIORS

Self-reported energy-efficiency purchases have increased over time, complementing the trends we see in energy-efficient product market share. The way consumers perceive themselves as far as their energy efficiency efforts and purchases has improved, in that they are more likely to say they have “done a lot” to save energy and are more likely to define their purchases as being energy efficient. Additionally, the reasons that consumers provide for making energy-efficient purchases have changed. Self-reported, or consumer perception, of behavior is one important dimension of market share: XENERGY presents changes for the following behaviors:

- **Rating of General Energy Efficiency Effort.** Respondent self-ranking of their overall conservation efforts
- **Self-Reported Energy Efficiency Purchases.** Respondent reporting of the share of energy efficiency lighting and appliance purchases
- **Rationale for Energy Efficiency Purchases.** Respondent motivation for making energy-efficient purchases.

The general population is more likely in 2001 to say that they have “done a lot” to save energy in their home than in 1998. Very few say they have not done much at all. Table 6-11 shows the distribution and mean of scores (ranging from 1 to 10) of the general population regarding their overall energy efficiency efforts in their home. Note that the “top box” (greater than 7) percentage has risen since 1998 from 37 percent to 60 percent.

Not only do people claim they are making more of an effort to conserve energy in their home, but self-reported energy-efficient product purchases have increased substantially. CFL purchases are up 8 percent since 1998, as one-quarter of the general population purchased a CFL within the last year and a half. Table 6-12 presents CFL purchase rates for 1998 and 2001.

**Table 6-11**  
**Overall Rating of Energy Efficiency “Effort”**

*How would you rate your overall efforts to save energy in your home?*

	<b>2001</b>	<b>1998</b>
1 Not Done Much	1%	5%
2	1%	4%
3	2%	3%
4	2%	4%
5	11%	21%
6	9%	12%
7	15%	14%
8	26%	17%
9	13%	6%
10 Done Almost Everything	21%	13%
Don't Know	0%	1%
“Top Box” (>7)	60%	37%
Mean	7.6	6.5
Base	721	1,170

*Scale: 1 = “not done much,” 10 = “done almost everything”*

*Source: Phase 4 CRLAP (2001), CBEE (1998)*

**Table 6-12**  
**Purchased CFLs in the Last Year and a Half**

	<b>2001</b>	<b>1998</b>
Yes	25%	17%
No	75%	83%
Base	721	334

*Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)*

The reasons for purchasing CFLs have changed over time, as more consumers are now aware and in the market for them. In 2001, CFL purchases were made due to financial reasons—either the energy or cost savings justified the purchase or the incremental cost was minimal, while previously consumers were just as likely to purchase CFLs due to societal or other non-financial benefits as for financial reasons. Table 6-13 presents the motivation behind CFL purchases for 2001 and 1998.

**Table 6-13**  
**Primary Reasons for Purchasing CFLs- Unprompted**

Motivation	CFLs	
	2001	1998
<b>Financial Reasons</b>		
Energy savings worth the extra cost	72%	28%
Cost savings worth the extra cost	21%	12%
Extra cost for efficient unit minimal	7%	0%
<b>Societal Benefits</b>		
It is the right thing to do	8%	5%
<b>Other Benefits</b>		
Product works better- is higher quality	20%	19%
Like to have new/high-tech products	4%	5%
Other benefits made it a worthwhile purchase	0%	35%
# Respondents	251	57

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

The percentage of appliance purchasers that report that their appliance is energy efficient has increased significantly since 1998. Over three-quarters of refrigerator purchasers in 2001 report that their unit is energy efficient. Table 6-14 presents self-reported purchase rates for appliances for 1998 and 2001.

**Table 6-14**  
**Percentage of Appliance Purchasers that Self-Report the Appliance as Energy Efficient**

Appliance	2001	1998
Refrigerator	75%	59%
Clothes washer	61%	40%
Dishwasher	56%	48%
Room AC	69%	59%

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

As the market share for energy-efficient refrigerator purchases has increased over time, the motivations for such purchases have changed somewhat. Similarly to CFL purchasers' rationales, people are more likely now to purchase efficient appliances due to the energy savings. They are also more likely to purchase an energy-efficient unit for other reasons such as brand and features. (This may be due to improvements in product availability, which is discussed later in this section.) A smaller fraction is making such purchases because "it's the right thing to do."

Motivations behind energy-efficient clothes washer and room air conditioner purchases haven't changed significantly over time, while they have changed slightly for dishwashers. More people are buying energy-efficient dishwashers for greater societal benefits. Just under one-third said they bought an efficient dishwasher due to the energy crisis.

Tables 6-15 through 6-17 present the top five reasons that appliance purchasers bought energy efficient.<sup>1</sup>

<sup>1</sup> Room air conditioning is not presented because the sample size was too small.



Table 6-15

## Top Five Reasons Cited for Purchasing and Energy-Efficient Refrigerator- Unprompted

Rank	2001		1998	
	Reason	Percent	Reason	Percent
1	<b>Financial:</b> Energy savings worth the extra cost	41%	<b>Financial:</b> Energy savings worth the extra cost	29%
2	<b>Other:</b> Unit wanted was higher efficiency	26%	<b>Financial:</b> Cost savings worth the extra cost	25%
3	<b>Financial:</b> Cost savings worth the extra cost	23%	<b>Societal:</b> It is the right thing to do	20%
4	<b>Societal:</b> To help in the energy crisis/civic duty	11%	<b>Other:</b> Unit wanted was higher efficiency	16%
5	<b>Societal:</b> It is the right thing to do	10%	<b>Financial:</b> Extra cost for efficient unit minimal	15%
	Base	38	Base	139%

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

Table 6-16

## Top Five Reasons Cited for Purchasing Energy-Efficient Clothes Washer- Unprompted

Rank	2001		1998	
	Reason	Percent	Reason	Percent
1	<b>Financial:</b> Energy savings worth the extra cost	40%	<b>Financial:</b> Energy savings worth the extra cost	40%
2	<b>Financial:</b> Cost savings worth the extra cost	22%	<b>Financial:</b> Cost savings worth the extra cost	33%
3	<b>Other:</b> Unit wanted was higher efficiency	17%	<b>Other:</b> Unit wanted was higher efficiency	13%
4	<b>Societal:</b> It is the right thing to do	16%	<b>Financial:</b> Extra cost for efficient unit minimal	11%
5	<b>Financial:</b> Extra cost for efficient unit minimal	12%	<b>Societal:</b> It is the right thing to do	10%
	Base	31	Base	109

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

Table 6-17

## Top Five Reasons Cited for Purchasing Energy-Efficient Dishwasher- Unprompted

Rank	2001		1998	
	Reason	Percent	Reason	Percent
1	<b>Financial:</b> Cost savings worth the extra cost	31%	<b>Financial:</b> Energy savings worth the extra cost	37%
2	<b>Societal:</b> To help in the energy crisis/civic duty	28%	<b>Other:</b> Unit wanted was higher efficiency	20%
3	<b>Financial:</b> Energy savings worth the extra cost	25%	<b>Societal:</b> It is the right thing to do	19%
4	<b>Other:</b> Unit wanted was higher efficiency	13%	<b>Financial:</b> Cost savings worth the extra cost	18%
5	<b>Financial:</b> Extra cost for efficient unit minimal	10%	<b>Financial:</b> Extra cost for efficient unit minimal	7%
	Base	28	Base	98

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

Complementing the increase we see in self-reported energy-efficient appliance market shares, the share of ENERGY STAR<sup>®</sup>-labeled appliances has also significantly increased over time, as shown in Table 6-18. Currently, half of all refrigerator purchasers report that their unit is designated ENERGY STAR<sup>®</sup>.

**Table 6-18**  
**Percentage of Appliance Purchases With an ENERGY STAR<sup>®</sup> Label (Self-Reported)**

Appliance	2001		1998	
	% w/ Label	N	% w/ Label	N
Refrigerator	50%	50	38%	249
Clothes washer	34%	50	30%	253
Dishwasher	24%	49	32%	186
Room AC	54%	21	37%	66

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

#### 6.4.1 Early Replacement of Appliances

In 2001, California residents were increasingly exposed to the benefits of replacing appliances early (i.e., before breakdown) through utility appliance recycling programs. These programs offered their customers rebates for recycling old appliances, and advertised the benefits in energy cost savings through getting rid of the older energy-wasting appliance. As general awareness and attitudes towards energy efficiency improved during the same time period, residents were more aware of and more likely to replace an appliance before breakdown.

Accordingly, a significant portion of appliance purchasers in 2001 bought their new appliance while their old one was still operating. In particular, 89 percent of refrigerator purchases said that their old refrigerator was still operating when they bought their new unit. Table 6-19 presents statistics describing the age of appliance upon replacement, while Table 6-20 presents the percentage of purchasers that still had an operating appliance upon replacement.

**Table 6-19**  
**Age of Appliance Upon Replacement**

Appliance	Mean	Minimum	Maximum	N
Refrigerator	14.2	1	30	50
Clothes washer	13.7	3	30	50
Dishwasher	10.9	1	28	49
Room AC	16.0	3	28	21

Source: Phase 4 CRLAP.

**Table 6-20**  
**Appliance Still Operating Upon Replacement?**

Appliance	Yes	N
Refrigerator	89%	50
Clothes washer	47%	50
Dishwasher	57%	49
Room AC	33%	21

Source: Phase 4 CRLAP

## 6.5 ENERGY-EFFICIENT PRODUCT AVAILABILITY

The lack of availability of energy-efficient products can be a significant barrier to increasing market shares. Even if consumers are convinced of the benefits of energy efficiency, without sufficient stocking of energy-efficient units, salesperson introduction of efficient units, and availability of a broad array of features and brands, actual purchases of efficient products will be limited. Through mystery shopper surveys, we examined three dimensions of product availability:

- **Number of units shown by salesperson.** Describing the number of units the salesperson initially shows the shopper
- **Number of ENERGY STAR<sup>®</sup>-labeled units shown by salesperson.** Describing the number of ENERGY STAR<sup>®</sup>-labeled units the salesperson initially shows the shopper
- **Share of ENERGY STAR<sup>®</sup>-labeled units shown by salesperson.** The percentage of units shown to the shopper that have the ENERGY STAR<sup>®</sup> label.

The availability of appliances and lighting products in general, ENERGY STAR<sup>®</sup> products in particular, and the ENERGY STAR<sup>®</sup> share have all increased over time. The share of ENERGY STAR<sup>®</sup> products is increasing not only because retail sales staff have received training regarding energy efficiency and ENERGY STAR<sup>®</sup>, but also because consumer demand in part pushed by utility rebates and buy downs have increased shipments to retail stores.

Table 6-21 displays the three dimensions of product availability for appliances. Note that over one-third of appliances that are shown to shoppers have the ENERGY STAR<sup>®</sup> label. Table 6-22 displays the same data for lighting equipment. Of the three units shown to shoppers, one unit on average has the ENERGY STAR<sup>®</sup> label.

**Table 6-21**  
**Appliance Availability**

Measure	2001	2000	1998
Mean number of units initially shown	2.76	2.24	2.57
Mean number of units with ENERGYSTAR logo	1.10	0.62	0.47
ENERGYSTAR units as a share of initial units	39%	28%	17%

Source: Phase 4 CRLAP (2001), Phase 3 CRLAP (2000), Phase 1 CRLAP (1998)

**Table 6-22**  
**Lighting Product Availability**

Measure	2001	2000	1998
Mean number of units initially shown	2.84	2.10	2.56
Mean number of units with ENERGYSTAR logo	0.95	0.60	0.39
ENERGYSTAR units as a share of initial units	34%	29%	15%

Source: Phase 4 CRLAP (2001), Phase 3 CRLAP (2000), Phase 1 CRLAP (1998)

As shown above, mystery shopper survey data illustrates that energy-efficient product availability is increasing over time. According to consumer self-reported data, product availability is not currently a significant barrier to consumer energy efficiency purchases. Of those who purchased energy-efficient products in 2001, very few said that product availability was an issue. About 7 percent of CFL purchasers experienced some difficulty in finding a CFL that would work for their application, while no energy-efficient appliance purchasers experienced difficulties with finding a high-efficiency unit that met all of their needs.

Of those who did *not* purchase energy-efficient products in 2001, product availability was an issue for refrigerator purchasers. Almost half (41 percent) said they didn't purchase an energy-efficient unit because they could not find the type/style/size they wanted with high-efficiency features. However, since there were so few who reportedly purchased an inefficient unit, the percentage of *all* refrigerator purchasers who experienced availability difficulties is small and is the same or less than in 1998. Table 6-23 shows the size of the product availability barrier for appliances. The first two columns show the percentage of non-energy-efficient purchasers who encountered product availability problems; the last two columns show the percentage of *all* purchasers who had such problems.

**Table 6-23**  
**Percentage of Purchasers that Purchased a Non-EE Unit Due to Product Availability**

Appliance	Didn't Purchase EE		Total Purchasers	
	2001	1998	2001	1998
Refrigerator	41%	23%	10%	9%
Clothes washer	0%	17%	0%	5%
Dishwasher	12%	9%	5%	9%
Room AC	0%	40%	0%	16%

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

## 6.6 ENERGY-EFFICIENT PRODUCT EXPOSURE

Once in the retail store, consumers in the market for lighting equipment or appliances may be exposed to energy-efficient product messages through in-store advertising or through speaking with a salesperson. XENERGY measured changes in retailer exposure of energy-efficient products through mystery shopper surveys and the purchaser component of the general population survey. The following dimensions of product exposure were explored:

- **Extent of in-store promotions and displays:** the percentage of purchasers who notice in-store displays on energy-efficient products
- **The amount of salesperson contact with purchasers:** how often purchasers interact with a salesperson
- **Salesperson-purchaser discussion of energy efficiency:** how often the discussion concerns energy efficiency
- **Salesperson exposure of energy-efficient products:** how often, initiated and uninitiated, the salesperson shows a purchaser an ENERGY STAR<sup>®</sup>-labeled product
- **Knowledge of salespeople concerning energy efficiency:** a composite attitude/awareness index of salesperson attitudes towards and knowledge of energy efficiency.

### 6.6.1 In-store Advertising and Displays

According to self-reported purchaser experiences, energy-efficient exposure through advertising and salesperson discussion increased over previous years. Currently, most appliance purchasers discuss energy efficiency with a salesperson and notice some sort of in-store promotion regarding efficient appliances. Very few lighting equipment purchasers speak with a salesperson, with the exception of fixture purchasers, where just under half seek out the expertise of a salesperson.

In 2001, almost half of light bulb purchasers noticed some type of in-store promotions. Table 6-24 illustrates the increase in retailer in-store advertising for CFLs over the last few years. Note that in-store advertising for energy-efficient (CFL) floor lamps and fixtures has remained about the same.

**Table 6-24**  
**Survey Respondent Noticed CF Equipment In-Store Advertising or Displays?**

Lighting Equipment	2001		1998	
	Yes	N	Yes	N
Bulbs	46%	58	18%	325
Floor lamps	16%	49	15%	207
Fixtures	31%	52	32%	202

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

Energy-efficient appliance exposure through in-store displays also increased since 1998, but not as dramatically as that for CFLs. Table 6-25 illustrates the general increase in in-store advertising for energy-efficient appliances.

**Table 6-25**  
**Survey Respondent Noticed Energy-Efficient Appliance In-Store Advertising or Displays?**

Appliance	2001		1998	
	Yes	N	Yes	N
Refrigerator	69%	50	51%	248
Clothes washer	61%	50	46%	254
Dishwasher	57%	49	51%	186
Room AC	39%	21	50%	66

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

They mystery shopper results mirror the population survey results, as shown in Table 6-26, in that light bulb displays are much more prominent, while the prevalence of other lighting equipment displays has stayed the same, or, in the case of floor lamps, has decreased. These data tend to support the reports of consumers with increasing observation of energy-efficient POP materials for light bulbs, which received the most attention from utilities and retail stores.

**Table 6-26**  
**Percent of Mystery Shoppers Observing Energy-Efficient POP Materials**

CF Lighting Equipment	2001		1998	
	Yes	N	Yes	N
Bulbs	62%	66	26%	53
Floor lamps	19%	58	39%	51
Fixtures	30%	47	32%	44

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

The appliance mystery shopper data (Table 6-27) also support the population survey results. There are increases for refrigerators and dishwashers and a reduced percent for room air conditioners. The only difference is that mystery shoppers saw slightly less energy-efficient POP materials for clothes washers from 1998 to 2001.

**Table 6-27**  
**Percent of Mystery Shoppers Observing Energy-Efficient Appliance POP Materials, by Phase**

Appliance	2001		1998	
	Yes	N	Yes	N
Refrigerator	80%	45	69%	39
Clothes washer	71%	62	78%	36
Dishwasher	82%	60	47%	43
Room AC	11%	9	37%	19

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

### 6.6.2 Salesperson Exposure of Energy-Efficient Products

Purchasers in 2001 were slightly more likely or about equally as likely to talk with a salesperson about their purchase, as compared to 1998. Table 6-28 shows the percentage of lighting product purchasers who spoke with a salesperson. As in 1998, fixture purchasers in 2001 were far more likely to talk with a salesperson than floor lamp or bulb purchasers.

**Table 6-28**  
**Whether Lighting Equipment Purchaser Talked With a Salesperson**

Lighting Equipment	2001		1998	
	Yes	N	Yes	N
Bulbs	11%	58	5%	314
Floor lamps	13%	49	18%	198
Fixtures	46%	52	34%	197

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

Table 6-29 shows that most appliance purchasers interact with a salesperson at some point before making their purchase. Room air conditioner purchasers are less likely than other appliance purchasers to consult a salesperson.

**Table 6-29**  
**Whether Appliance Purchaser Talked With a Salesperson**

Appliance	2001		1998	
	Yes	N	Yes	N
Refrigerator	85%	50	88%	248
Clothes washer	82%	50	82%	254
Dishwasher	79%	49	85%	186
Room AC	44%	21	60%	66

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

Table 6-30 illustrates the dramatic increase in the frequency that the salesperson/light bulb purchaser discussion touched on energy efficiency. Note that in 2001 it was also more likely that fixture purchasers spoke with a salesperson about energy efficiency, while it was less likely for floor lamp purchasers to discuss energy efficiency with a salesperson.

**Table 6-30**  
**Whether the Salesperson-Purchaser Discussion Included Energy Efficiency**

Lighting Equipment	2001	1998
Bulbs	81%	17%
Floor lamps	18%	41%
Fixtures	60%	30%

Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)

In 2001, the salesperson-purchaser discussion was likely to touch on energy efficiency, a modest increase over 1998. Table 6-31 presents the frequency that the salesperson-appliance purchaser discussion included energy efficiency.

**Table 6-31**  
**Whether the Salesperson-Purchaser Discussion Included Energy Efficiency**

Appliance	2001	1998
Refrigerator	70%	70%
Clothes washer	68%	71%
Dishwasher	69%	63%
Room AC	100%	79%

*Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)*

The data presented above from the consumer surveys are supported by the mystery shopper data. Recall that when the salesperson began showing the three selections per appliance or per lighting product, the mystery shopper was instructed to pay particular attention to whether the salesperson mentioned (unprompted) specific aspects of the product, such as energy use, energy efficiency, rebates, life-cycle costs, etc. and what, exactly, the salesperson said about such attributes. The mystery shopper was also to note whether the ENERGY STAR<sup>®</sup> label was on the appliance or lighting equipment itself or its packaging.

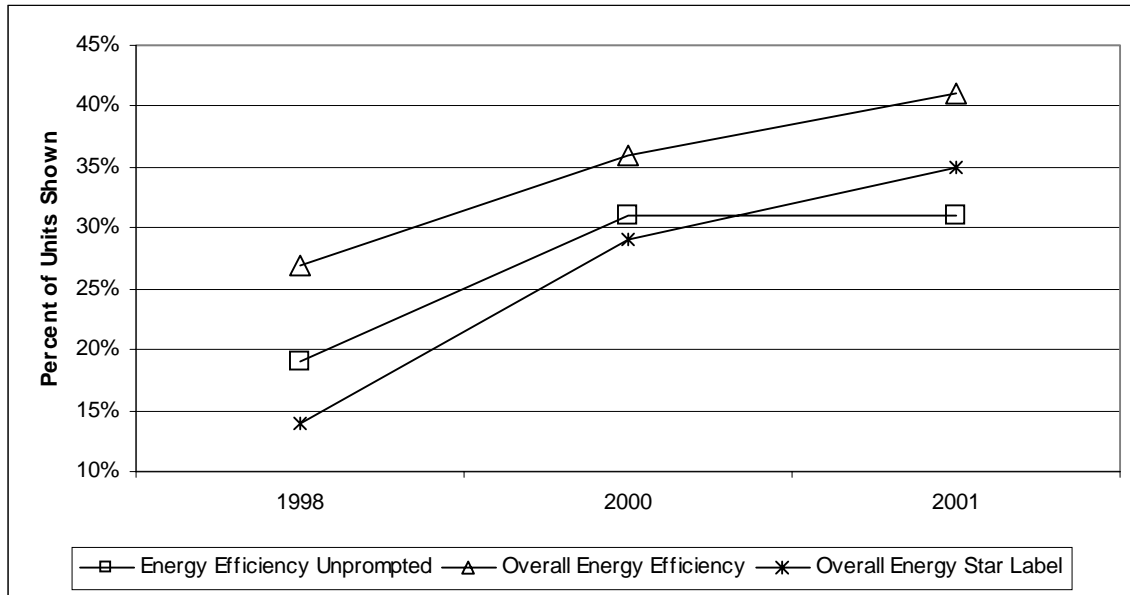
If energy use or energy efficiency were not mentioned for any of the three appliance models or pieces of lighting equipment, the mystery shopper was to prompt the salesperson by asking whether all three use the same amount of electricity or whether all three are equally energy efficient. Finally, if after raising the energy-efficiency issue, the salesperson offered to show more products, mystery shoppers were instructed to shop for a maximum of two additional appliance or lighting models. The maximum number of models shown to most mystery shoppers, therefore, was five (three initially, plus two additional).

Figures 6-1 and 6-2 display the trends for three indicators: 1) the percent of the initial units shown that were voluntarily described by the salesperson as being energy efficient, 2) the percent of all units shown that were described (both prompted and unprompted) as being energy efficient, and 3) the percent of all units shown that had the ENERGY STAR<sup>®</sup> logo on them.

From these two figures, it is clear that there was a substantial increase in all three indicators from 1998 to 2000. From 2000 to 2001, the unprompted mention of energy efficiency was reduced possibly owing to the elimination of sales person training in 2001. However, the prompted and unprompted mention of energy efficiency as well as the presence of the ENERGY STAR<sup>®</sup> logo continued to increase possibly due to the energy crisis in 2001. During the energy crisis, consumers demanded more energy-efficient equipment and utilities shifted a large portion of program funds into rebates.

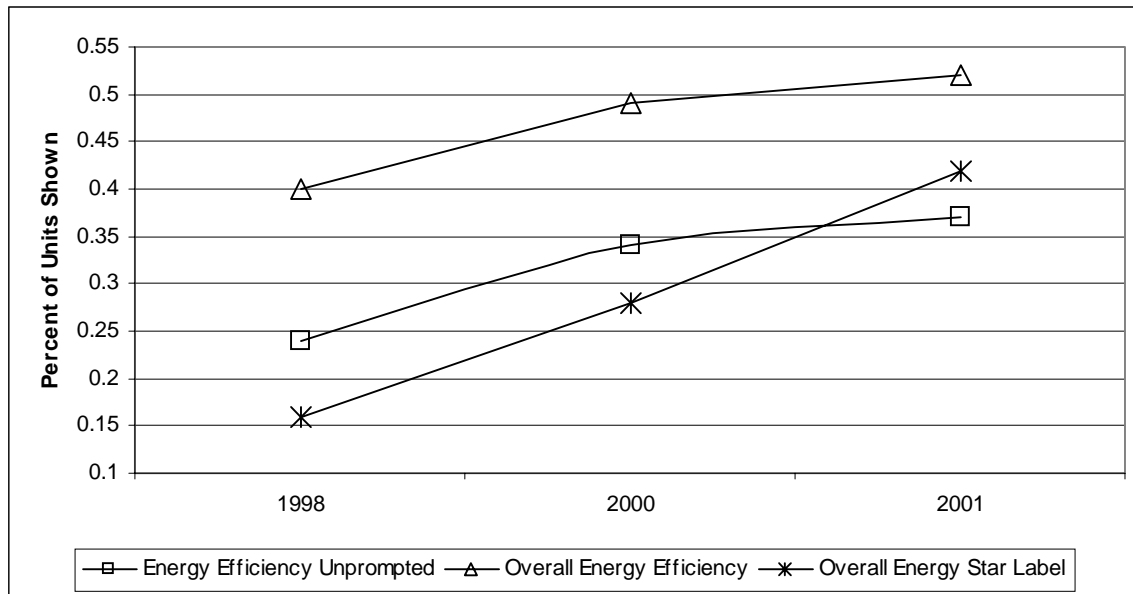


**Figure 6-1**  
**Lighting In-Store Experience for Mystery Shoppers Over Time**



Source: Phase 4 CRLAP (2001), Phase 3 CRLAP (2000), Phase 1 CRLAP (1998)

**Figure 6-2**  
**Appliance In-Store Experience for Mystery Shoppers Over Time**

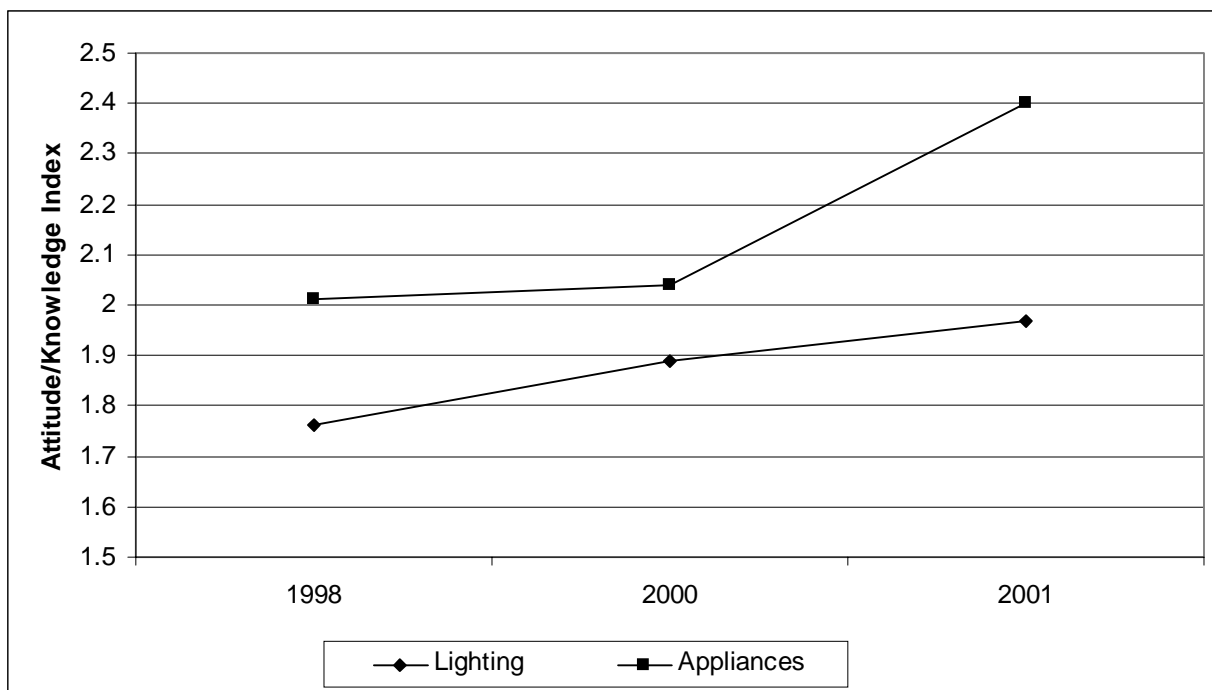


Source: Phase 4 CRLAP (2001), Phase 3 CRLAP (2000), Phase 1 CRLAP (1998)

The results presented above in Figures 6-1 and 6-2 regarding sales staff awareness and knowledge of energy efficiency and energy-efficient products are a collection of single items that are intended to measure a complex underlying construct, awareness and knowledge. A more valid and reliable indicator of awareness and knowledge is one composed of *multiple* items. Recall that an awareness and knowledge index (AKI) of energy-efficiency technologies was created, using a combination of five items from the mystery-shopping questionnaire. The index ranges from 1 to 4, with a 4 indicating the highest level of awareness and knowledge.

Figure 6-3 shows how the AKI has improved over time.

**Figure 6-3**  
**Attitude/Knowledge Index Over Time**



Source: Phase 4 CRLAP (2001), Phase 3 CRLAP (2000), Phase 1 CRLAP (1998)

As one can see, there is steady increase in the AKI over the three phases, with the increase being far more dramatic for appliances. The explanation for these increases involves a number of factors, including utility efforts over the last 20 years,<sup>2</sup> including an enormous effort during the worst of the energy crisis in 2001. Of course, one must include as a factor the energy crisis itself and the impact of rising prices or the fear of rising crisis. Also, the efforts of state agencies such as the California Energy Commission and the State Department of Consumer Affairs and the

<sup>2</sup> "The Public Benefit of California's Investment in Energy Efficiency," Prepared for the California Energy Commission by the RAND Institute (Mark Bernstein, Robert Lempert, David Loughran, and David Ortiz), MR-1212.0-CEC, 2000.

ENERGY STAR<sup>®</sup> program jointly sponsored by the U.S. Department of Energy and Environmental Protection Agency have been critically important.

## 6.7 ATTRIBUTION OF INCREASES IN ENERGY EFFICIENCY PRODUCT MARKET SHARE

In 2001, the market for energy-efficient lighting equipment and appliances was influenced by a variety of external actors, including California's energy crisis, the state's efforts to mitigate the crisis, and the continuation of historic utility energy efficiency programs that were specifically designed in 2001 to achieve maximum savings in light of the crisis. As a result, consumers were influenced in a variety of ways:

- **Awareness.** Overall awareness of energy efficiency, awareness of specific measures, and awareness of specific energy-efficient technologies has increased.
- **Attitudes.** Overall attitudes towards energy efficiency have improved, the relative importance of energy efficiency as a product attribute has increased, and perceptions of energy efficiency technologies and products have improved.
- **Self-Reported Behavior.** Consumer perception of their overall energy conservation efforts has improved, and self-reported energy-efficient product market share has increased.

Retailers, distributors and manufacturers have also been influenced by outside influences:

- **Product Availability.** Availability of energy-efficient products has increased, in that more units are stocked, and a greater variety of units is available.
- **Product Exposure.** In-store advertising and salesperson emphasis of energy efficiency has increased.

A detailed discussion of the various influences and their effects on the market for energy-efficient lighting equipment and appliances follows.

### 6.7.1 California's Energy Crisis

California residents have been influenced by the economic, political, and financial effects of the state's energy crisis since mid-year 2000 through the present. However, electricity market deregulation legislation was enacted back in 1996, setting the stage for surging wholesale prices, rate freezes, blackouts, and higher electricity rates for all classes of customers.

Consumers were primarily affected through blackouts and higher electricity prices. High natural gas prices in 2000 caused by a cold winter and a booming economy also contributed to the consumer perception of an energy market out of control. Moreover, the threat of higher electricity prices made front-page news day after day, alarming the public into expecting huge rate hikes, especially as PG&E filed for bankruptcy. The threat of continual blackouts was equally as pervasive, as businesses expected the worst and residents feared economic turmoil as a result.

In addition to the extensive media attention covering the crisis, the State of California began a intensive campaign called Flex Your Power to encourage residents and businesses to conserve energy. The campaign consisted of repeated mass media advertisements with simple, behavioral conservation steps that people could take to save energy and help mitigate the effects of the crisis. Newspaper columnists and consumer interest segments on the news then began to offer basic conservation tips as well, and California residents were inundated with messages to “do your part” and turn off lights, adjust thermostats, and use appliances off-peak.

Many of the conservation messages that the state and the media disseminated to residents were common-sense-based, reminding people to do what they already knew they should have been doing.<sup>3</sup> In a sense, the crisis encouraged residents to make use of the conservation ethic they had learned from parents, grandparents, and teachers. The utility companies had also been advertising conservation messages for decades, encouraging residents to turn off lights and also promoting energy-efficiency investments. It is likely that those past utility conservation messages resonated with residents as they were encouraged by the media and their government to do their part and conserve.

### ***Influence of the Energy Crisis on Consumer Knowledge and Behavior***

Consumer behavior in late 2000 through 2001 was likely influenced to some degree by the energy crisis and its accompanying media attention. This section discusses consumer perceptions of how the energy crisis influenced them in terms of their energy-efficiency knowledge, general efforts, purchases, and early replacement of appliances.

Table 6-32 shows the distribution of scores that survey respondents provided when asked how much of their energy conservation knowledge has increased due to the crisis. The distribution is fairly even, in that some people gave no credit, others gave limited credit, and still some gave a lot of credit to the energy crisis for their conservation knowledge.

Again, Table 6-33 illustrates the even distribution of the population in attributing credit to the energy crisis. Over one-third said that a lot of their recent energy-saving activity has occurred since the crisis, while 20 percent said they had already done everything they could before the crisis began. The data presented in both tables indicates that there was a significant segment, perhaps just over one-third of the population, who attribute their increase in energy conservation knowledge and behavior to the crisis. It is also clear that there is a significant segment that doesn't attribute any of their knowledge or activity to the crisis. They already knew about energy conservation and had already enacted measures in their home before the crisis began.

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<sup>3</sup> This hypothesis was substantiated through a series of focus groups conducted in January of 2002 in support of an evaluation of PG&E's 1-2-3 Cashback Program. The objective of the focus groups was to identify the sources from which PG&E customers received energy conservation information during 2001.

**Table 6-32**  
**Extent Energy Conservation Knowledge Has Increased Due To Energy Crisis**

	<b>2001</b>
1 Not At All	9%
2	5%
3	6%
4	3%
5	13%
6	7%
7	13%
8	18%
9	10%
10 A Great Deal	13%
Don't Know	3%
"Top Box" (>7)	41%
Mean	6.2
Base	721

Scale: 1 = "not at all," 10 = "a great deal"

Source: Phase 4 CRLAP

**Table 6-33**  
**How Much of Energy-Saving Activity Has Occurred Since the Energy Crisis Began**

<b>Amount of Activity</b>	<b>2001</b>
A lot	38%
Some	28%
A little	13%
None, we did everything we could BEFORE the energy crisis	20%
Refused	0%
Don't Know	1%
Base	721

Source: Phase 4 CRLAP

Consumer attribution of energy-efficient product purchases is similar to that for knowledge and general conservation activities. There is a significant segment that gives all the credit to the crisis, and a similarly sized segment that does not give any credit. And in the middle are purchasers who say the crisis was somewhat influential. Possibly they had already considered purchasing an energy-efficient product, and the crisis "sealed the deal" for them. Table 6-34 displays the mean and "top box" (greater than 7 on a scale from 1 to 10) energy crisis influence on energy-efficient purchase scores for five products.

**Table 6-34**  
**Influence of Energy Crisis on Decision to Purchase Energy-Efficient Appliances and CFLs**

EE Product	Mean Score	"Top Box" (>7)	N
Refrigerator	5.1	14%	38
Clothes washer	5.8	38%	31
Dishwasher	4.8	33%	28
Room AC	6.6	55%	15
CFLs	6.1	46%	251

Scale: 1 = "not at all influential," 10 = "extremely influential"

Source: Phase 4 CRLAP

Consumer early replacement of appliances was widespread in 2001, where the majority of purchasers replaced an appliance that was still operating. The energy crisis was responsible for some of this activity, as shown in Table 6-35. The crisis had the most influence on clothes washer purchasers, where about half reported that the crisis encouraged early replacement.

**Table 6-35**  
**Whether the Energy Crisis Encouraged Early Replacement of Appliance**

Appliance	Yes	"Top Box" (>7)	N
Refrigerator	31%	12%	42
Clothes washer	49%	41%	22
Dishwasher	5%	4%	28
Room AC	48%	25%	4

### 6.7.2 The Governor's 20/20 Program

The Flex Your Power campaign discussed previously included actual programs in addition to mass media advertisements. One of the programs was Governor Davis' 20/20 Program, which provided utility customers with 20-percent discount off their bill if they reduced their electricity consumption by 20 percent over the same period last year. The program was advertised heavily in the media through the broader Flex Your Power campaign, and most of the public was aware of the program and attempted to achieve the rebate.

Table 6-36 shows that almost half of the general public was aware of the program, while Table 6-37 shows that over half of those aware of the program attempted to achieve the rebate.

**Table 6-36**  
**Heard of the 20/20 Rebate Program**

	2001
Yes	46%
No	51%
Don't Know	3%
Base	721

Source: Phase 4 CRLAP

**Table 6-37**  
**Attempted to Reduce Electric Bill by 20 percent as Part of the 20/20 Program**

	Percent
Yes	61%
No	37%
Don't Know	2%
Base	334

Source: Phase 4 CRLAP

### ***Influence of the 20/20 Program on Energy-Efficient Product Purchases***

Although the 20/20 program was widely known and almost one-third of the general population attempted to reduce their bill in order to achieve the rebate, most of the energy-saving activities that participants adopted were behavioral in nature and their effects may not be sustainable in the long run.

Table 6-38 presents the top five energy-reducing activities that 20/20 participants adopted in reduce their bill. Note that 15 percent said they purchased CFLs to install in their home, the one potentially sustainable activity mentioned by participants.

**Table 6-38**  
**Top Five Energy-Reducing Activities that Helped Respondent Reduce Bill**

Rank	Energy-Reducing Activity	Percent
1	Turn off lights when not using	58%
2	Turn down/up thermostats when not at home/going to bed	35%
3	Cut down appliance use	15%
3	Compact Fluorescent Light Bulbs	15%
4	Use appliances off-peak	11%
5	Hang clothes out to dry	10%
	Base	143

Source: Phase 4 CRLAP

### **6.7.3 ENERGY STAR® Program**

The ENERGY STAR® program is a labeling program sponsored by the Department of Energy and the Environmental Protection Agency (DOE/EPA). The ENERGY STAR® label is generally tied to federal standards, in that products receive the ENERGY STAR® label if they exceed the federal standards by a certain prescribed threshold. Many rebate programs are tied to the ENERGY STAR® label, providing an easy way for purchasers to identify qualifying products.

ENERGY STAR<sup>®</sup> specifications have typically encouraged energy efficient product production that is more stringent than the federal minimum efficiency standards (NAECA). As discussed in Section 4, some specifications were established to prompt production of more efficient products prior to the enactment of more stringent federal standards (e.g., refrigerators, clothes washers). Clearly, the promotion of ENERGY STAR<sup>®</sup> specifications has influenced the baseline efficiency of products sold in California over the years. In addition, utility program expenditures have historically been earmarked for supporting more aggressive efficiency codes and standards. Through these efforts, the utilities have participated in the process of raising the baseline efficiency of products sold in California over time.

### ***Influence of the ENERGY STAR<sup>®</sup> Program on Energy-efficient Product Purchases***

Labeling programs such as the ENERGY STAR<sup>®</sup> program may influence purchasers to buy energy-efficient products. As reported previously in this section, XENERGY has seen increases in the purchase of ENERGY STAR<sup>®</sup>-labeled products over time. As part of their consumer survey, they asked consumers who purchased an ENERGY STAR<sup>®</sup>-labeled product to indicate the influence the label had on their purchase decision.

As shown in Table 6-39, a significant segment, but less than half, of consumers who purchased ENERGY STAR<sup>®</sup>-labeled products were significantly influenced by the label.

**Table 6-39**  
**Influence of ENERGY STAR<sup>®</sup> Label on Decision to Purchase Energy-Efficient Appliances and CFLs**

EE Equipment	Mean Score	"Top Box" (>7)	N
Refrigerator	5.1	14%	25
Clothes washer	5.8	38%	17
Dishwasher	4.8	33%	12
Room AC	6.6	55%	11
CFLs	6.1	46%	61

Scale: 1 = "not at all influential," 10 = "extremely influential"

Source: Phase 4 CRLAP

#### **6.7.4 Retailer Promotion**

Retailer promotion of energy-efficient products may influence purchasers to a significant extent. Key to determining the influence of in-store promotions and salesperson discussions is the extent of the retailer efforts in showcasing energy-efficient products. As discussed previously in this section, there has been an increase in energy-efficient product exposure, both through in-store advertising and salesperson discussions. This is especially true for light bulb purchasers, where almost half noticed some sort of in-store promotion on CFLs.



While retailers may have been more likely in 2001 to promote energy-efficient products in light of the energy crisis, utility assistance has played a pivotal role over the years in increasing retailer exposure of energy-efficient products. Over the years, most notably 1999 and 2000, utility “upstream” activities have provided retailers with financial assistance for cooperative advertising and displays promoting energy efficiency. Additionally, the utilities implemented intensive salesperson training effort during 1999 and 2000. Clearly, these efforts have contributed to preparing the upstream market for both the increased supply of and consumer demand for energy efficient products.

### ***Influence of Retailer Promotions on Energy Efficiency Product Purchases***

Retailer promotions clearly influenced a significant segment to purchase energy-efficient products, as reported by purchasers. In-store advertisements and materials seemed to be slightly more influential than salesperson discussions in influencing consumers to purchase energy-efficient appliances, as shown in Tables 6-40 and 6-41, which show the mean and “top box” influence rating. However, for CFLs, in-store promotions were not very influential, as less than 20 percent felt they were very influential in their decision to purchase CFLs over other bulb types.

**Table 6-40**  
**Influence of In-Store Ads and Materials on Decision to Purchase an Energy-Efficient Appliance/CFLs**

EE Equipment	Mean Score	"Top Box" (>7)	n
Refrigerator	6.6	50%	29
Clothes washer	6.2	21%	21
Dishwasher	7.3	44%	18
Room AC	8.1	56%	8
CFLs	4.4	19%	15

Scale: 1 = “not at all influential,” 10 = “extremely influential”

**Table 6-41**  
**Influence of Salesperson Discussion on Decision to Purchase an Energy-Efficient Appliance**

EE Equipment	Mean Score	"Top Box" (>7)	n
Refrigerator	5.7	37%	24
Clothes washer	6.2	32%	20
Dishwasher	5.9	21%	17
Room AC	6.9	51%	9

N too small to report for CFLs

Scale: 1 = “not at all influential,” 10 = “extremely influential”

### **6.7.5 Utility Rebate Programs**

A significant effort has been made over the last two decades by the utilities to implement programs that ultimately increase the market shares for energy-efficient lighting and appliances.

The statewide effort that PG&E, SDG&E, and SCE have participated in since 1997 has introduced measurable change on both the demand and the supply side of the market. While in the late 1990s program dollars were geared towards transforming the market through supply-side interventions, 2001 programs were more focused on immediate energy savings in light of the crisis. The utilities introduced large-scale appliance and lighting equipment rebate programs and large-scale point-of-purchase and buydowns for CFLs. Over 100,000 ENERGY STAR<sup>®</sup>-labeled appliances were rebated; millions of CFLs were discounted by the utilities.

Awareness of these programs is high among the general population; 47 percent are aware of at least one utility energy-efficiency program. Participation is low, at 14 percent, but significant. In part due to the visibility of rebates in 2001, most utility customers think of rebate programs (43 percent of those aware) when asked about utility energy-efficiency programs, and most who have participated in a program have received a rebate (50 percent). Many energy-efficient product purchasers in 2001 received a rebate, a significant increase from 1998, as shown in Table 6-42. Well over half of all refrigerator purchasers last year report receiving a rebate from the manufacturer, retailer, or the utility.<sup>4</sup>

**Table 6-42**  
**Percentage of Energy-Efficient Product Purchasers who Received a Rebate**

EE Equipment	2001		1998	
	Percent	N	Percent	N
Refrigerator	63%	38	37%	147
Clothes washer	41%	31	30%	106
Dishwasher	28%	28	18%	90
Room AC	16%	15	18%	38
CFLs	21%	251	5%	57

*Source: Phase 4 CRLAP (2001), Phase 1 CRLAP (1998)*

### ***Influence of Rebate Programs on Energy-Efficient Product Purchases and Early Replacement of Appliances***

Appliance and CFL rebates were influential for a significant percentage of energy-efficient product purchasers. Just under one-third of energy-efficient refrigerator purchasers would have been very unlikely to purchase an energy-efficient unit had there not been a rebate available. For clothes washers and CFLs, the rebate was even more influential, in that around one-half reported they would have been unlikely to make purchase an efficient unit in absence of the rebate. Table 6-43 displays the mean and “top box” (>7) score given by respondents.

<sup>4</sup> Although the survey instrument was designed to determine the rebate sponsor, analysis of the data indicated that purchasers who received rebates were uncertain of whom the sponsor actually was.

**Table 6-43**  
**Likelihood of Purchasing Energy-Efficient Appliance/CFL if Rebate was Unavailable**

EE Equipment	Mean Score	"Top Box" (>7)	N
Refrigerator	7.6	71%	29
Clothes washer	6.4	46%	20
CFLs	7.1	51%	53

*N too small to report for dishwashers and room AC*

*Scale: 1 = "not at all likely," 10 = "extremely likely"*

*Source: Phase 4 CRLAP*

Rebates also influenced early appliance replacement, as shown in Table 6-44. As we saw with energy-efficient purchases, clothes washer purchasers were more likely to be influenced by a rebate to replace their old unit before it broke down, where 71 percent said the rebate was very influential. Just over one-third of those who replaced an old refrigerator before it broke down said the rebate was very influential in their decision.

**Table 6-44**  
**Influence of Rebate on Decision to Early Replace Appliance**

QA28-Appliance	Mean Score	"Top Box" (>7)	N
Refrigerator	5.2	35%	25
Clothes washer	8.1	71%	9

*N too small to report for dishwashers and room AC*

*Scale: 1 = "not at all influential," 10 = "extremely influential"*

*Source: Phase 4 CRLAP*

### 6.7.6 Utility Upstream Programs

As stated previously, the utilities have spent millions of dollars over the last two decades influencing the market for energy-efficient appliances and lighting equipment. Much of the spending was directed towards influencing the supply-side of the market, i.e., encouraging manufacturers to produce more efficient units with a broad array of features and influencing retailers to stock an adequate supply of efficient units and promote them through salesperson discussion and in-store advertising.

As such, increases in product availability and exposure have been influenced to a significant degree by utility upstream programs. Utility supply-side efforts laid the groundwork prior to the energy crisis, so that in 2001 the increase in demand fueled by the crisis, its resulting media attention, and the availability of utility rebates could be met. Not only were consumers able to find one or two efficient units, but also they could choose from several models and almost always were able to find an efficient unit with the brand and features they desired. Retailer promotions through in-store displays and salesperson discussion helped to inform the consumer at the time of their purchase of the benefits of energy efficiency and, coupled with substantial utility and retailer/manufacturer rebates, potentially swayed undecided consumers to choose efficient units.



This section first presents conclusions drawn from our analyses of market effects. As discussed in Section 4, market shares have increased substantially over time for ENERGY STAR<sup>®</sup> appliances and lighting products. These increases are ultimate or lagging indicators of market effects, while this study was designed to measure changes in proximate or leading indicators, such as:

- **Awareness** of energy efficiency in general and energy-efficient products and technologies
- **Attitudes** towards energy efficiency in general, energy efficiency as a product attribute, and energy-efficient product performance and cost savings potential
- **Self-Reported Behavior**, or perceptions of energy-efficiency behavior in general and with regard to the purchase of energy-efficient products
- **Availability** of energy-efficient products in general and with a broad array of features and brands
- **Exposure** of energy-efficient products through retailer in-store promotions and salesperson discussions.

In the sections that follow, XENERGY presents evidence that these indicators have increased or improved over time, complementing the increases seen in market shares for energy-efficient products. This section concludes with a discussion of the various influences that caused these indicators to improve.

## 7.1 AWARENESS

Over the past few years, energy efficiency has gained tremendous visibility among the general public. A few years ago, many households were aware of energy-efficiency investments they could undertake, such as replacing windows and installing insulation. Currently, *all* households are aware of at least behavioral measures they should be taking in their home, such as turning off lights and adjusting thermostats.

Additionally, product-specific awareness has significantly increased. Most people are aware of CFLs and are knowledgeable about the ENERGY STAR<sup>®</sup> label. Accompanied with the increase in energy-efficient product awareness, the means by which people learn about such products has changed. Instead of relying just on retailers and word of mouth, increasingly the public is learning about energy-efficient products through various media, including TV, the Internet, and newspaper advertisements.

## 7.2 ATTITUDES

Consumer attitudes about implementing energy-efficient measures in their home have dramatically improved over the last few years. General consumer attitudes towards conservation and energy efficiency have significantly improved over time, in that most households feel that the financial and environmental benefits make it worthwhile for them to conserve energy. Furthermore, most households feel that they don't have to give up comfort to gain efficiency.

Consumers are also much more likely to consider the energy efficiency of a product before making a purchase. Presently, half or more of appliance purchasers mention energy efficiency (unprompted) as one of the most important factor that weighs into their purchase decision.

Attitudes about energy-efficient product performance have also improved; concerns about performance are minimal to non-existent. CFL performance issues have declined over time as the technology has improved; only a small fraction of CFL users are not satisfied with their performance or are unwilling to purchase them in the future due to performance concerns. There have not been and currently are not concerns about the performance of energy-efficient appliances.

The one dimension of consumer attitudes about energy efficiency that remains a barrier and that could potentially increase over time is consumer concern about the energy savings potential of efficient products. The main reason people are unwilling to buy CFLs at regular price is concern over whether the future energy savings will justify the immediate higher incremental cost. Also, one of the few difficulties that appliance purchasers reported having during their purchase experience was uncertainty of energy savings claims.

As more of the general public enters the market for efficient products, uncertainty about energy savings claims may increase. The early adopters who bought CFLs several years ago were more savvy consumers who were often used to buying products that were new on the market. Often, such consumers purchased new products for non-financial reasons, such as being the first to try a new technology or for its positive effect on the environment. As the general population considers purchasing energy-efficient products, the financial implications of such purchases will be more often and more closely under scrutiny. Moreover, as the threats of increasing electricity rates subside and/or rebate programs are scaled back, the financial motivation to purchase energy-efficient products will diminish.

## 7.3 SELF-REPORTED CONSUMER BEHAVIOR

Perceptions of overall efforts to save energy in the home have improved, in that the majority of the population says they have done a lot or have done almost everything they can in their home to conserve. Self-reported shares of CFLs and energy-efficient appliances have increased significantly, where one-quarter of the population has purchased at least one CFL within the last year and a half, and more than half of appliance purchasers report that their unit is energy efficient.

As discussed above, the reasons people provide for making energy-efficient purchases have changed as more and more of the general public begins making such purchases. Previously, when energy-efficient market shares were lower and early adopters and innovators comprised the majority of the energy-efficiency market, such purchases were often made for non-financial or greater societal benefits. Currently, most people are making energy-efficient purchases for financial reasons, in that they expect the energy savings to make up for the higher up-front cost.

Another behavior seen in 2001 that indicated a strong willingness to make energy-efficiency improvements was the overwhelming majority of appliance purchasers replacing an older, *working* unit. Specifically, 89 percent of refrigerator purchasers reportedly replaced their old unit before it broke down. This trend underscores the increased motivation of consumers to make energy-efficient investments, as they perceive the financial gains over time will make their investment worthwhile.

#### **7.4 PRODUCT AVAILABILITY**

As discussed in Section 4, it would appear that most ENERGY STAR<sup>®</sup> appliances and lighting products have experienced significant improvements in product diversity. In addition, steady increases in market shares imply that qualified products have been readily available with the features consumer desire, in addition to being energy efficient. Further, our consumer research suggests a reduction in this barrier and that the lack of availability of energy-efficient products has not impacted recent purchasers in any significant way.

#### **7.5 PRODUCT EXPOSURE**

Exposure of energy-efficient products has increased over time, most notably for CFLs. In 2001, most appliance and light bulb purchasers noticed displays in retail stores promoting energy-efficient appliances and CFLs. Exposure through salesperson discussion, particularly for lighting equipment, has increased substantially. Almost all light bulb purchasers and over half of fixture purchasers who spoke with a salesperson discussed CFLs. Salesperson discussion of efficiency with appliance purchasers has not increased as dramatically as that for lighting because in the past a very high percentage of such discussions already concerned energy efficiency.

#### **7.6 INFLUENCES ON MARKET SHARE**

Many outside influences acted on consumers in 2001 to make them more aware of energy efficiency, to improve their attitudes and inclinations towards energy conservation behavior, and to encourage energy-efficient purchases. These same influences also encouraged manufacturers, distributors, and retailers to stock more energy-efficient units, to display them more prominently, and to promote them more vigorously through salesperson discussions and in-store advertising.

The major outside influences that affected market behavior during 1998-2001 are as follows:

- California's energy crisis
- The ENERGY STAR<sup>®</sup> labeling program
- Retailer promotions
- Utility rebate programs
- Utility upstream programs.

### **7.6.1 Energy Crisis**

California's energy crisis, which received prominent media coverage from the middle of 2000 through early 2001, increased awareness of energy conservation considerably. Through subsequent news stories, newspaper columns, and the State's Flex Your Power campaign, California residents were inundated with messages to "do your part" and to conserve through turning off lights and adjusting thermostats. Most consumers had heard such messages in the past, through utility bill inserts and advertisements and through teachers and parents. The general feeling was the crisis and its subsequent media attention reminded consumers to do what they already knew they should have been doing all along.

The heightened attention to conservation sparked by the crisis likely can be credited with inducing changes in awareness, attitudes, and behaviors. However, as the focus of the media and the Flex Your Power campaign was on conservation rather than energy efficiency, resultant changes were mostly behavioral in nature. Most consumers focused on turning off lights and other equipment that they weren't using, adjusting thermostats to decrease heating and cooling loads, and using major appliances off-peak. Neither the media nor the state's broad-based mass media campaign promoted investments in energy efficiency that could yield the same or higher energy savings without sacrificing comfort.

However, although consumers were most likely to conserve energy through behavioral actions as a result of the crisis and its high profile, its effect on perceptions of ever-increasing electricity rates spurred some consumers to invest in energy efficiency. Investment activity was motivated by financial considerations, whereas behavioral actions were motivated by messages to "do your part" to avoid blackouts and to "help out the state."

However, it is not clear that the fears of rising electricity rates alone led to increases in the market shares of energy-efficient appliances and CFLs. Prominent retailer promotions coupled with utility and retailer/manufacturer rebates (both of which are discussed in detail below) were also key factors in encouraging consumers to purchase higher efficiency products.



## 7.7 ENERGY STAR<sup>®</sup> LABEL

The ENERGY STAR<sup>®</sup> labeling program, sponsored by the DOE and EPA, provides consumers with an easy way to identify energy-efficient products. Additionally, it simplifies rebate programs significantly by allowing product eligibility requirements to be tied to the label.

The ENERGY STAR<sup>®</sup> labeling program affects the purchases of energy-efficient products by signifying energy efficiency and all the positive attributes with which that is associated. Also, the credibility of its sponsors carries much more weight than retailer or manufacturer claims. Consumers who feel that energy efficiency is important but have little knowledge about energy usage of appliances can easily select an efficient product via the label. In absence of the label, uninformed consumers would be less likely to purchase efficient products because they would have to interpret energy savings claims made by manufacturers and retailers.

The overall effect of the ENERGY STAR<sup>®</sup> label on the market in 2001 was moderate. In particular, the label significantly influenced almost half of energy-efficient room air conditioner purchasers. For other products, its influence was lower; either fewer people purchased ENERGY STAR<sup>®</sup>-labeled units or those who did reported its influence to be less than other factors such as the crisis and rebates.

## 7.8 RETAILER PROMOTIONS

Retailers heavily promoted energy-efficient products in 2001, giving them prominent shelf space, stocking an adequate amount of efficient units, providing displays and promotional materials, and encouraging salespeople to use energy efficiency as a selling point. While the increased consumer demand for energy-efficient products and the crisis-provoked media attention likely influenced retailer product exposure, utilities provided financial assistance to retailers with their in-store displays and promotions. In 2000, an intensive salesperson training effort was undertaken through a joint effort between retailers and utilities. While the significant effort made by utilities through historical and current upstream programs is discussed in a subsequent section, it should be considered here that past utility efforts likely helped shape retailer messages, while current co-operative advertising assistance likely helped retailers expand their promotional efforts, allowing for widespread promotions in stores.

Given the intensive exposure given to energy-efficient products in stores, retailers significantly influenced the market for energy-efficient appliances and lighting equipment. Not only were promotions and salesperson discussion of energy efficiency affecting the majority of purchasers, but also the influence of such promotions was reported to be significant.

In particular, retailer promotions of energy efficiency through displays and salespeople significantly influenced half or more purchasers of efficient refrigerator and room air conditioner. Slightly less efficient clothes washer and dishwasher purchasers were influenced by retailer promotions. While retailers played a significant role in efficient appliance sales, they are not credited with influencing consumers to purchase CFLs. While so many light bulb purchasers

noticed in-store ads and displays on CFLs, those who ultimately purchased CFLs were not likely to credit those displays and were more likely to report that the energy crisis and rebates/discounts influenced their decision.

## 7.9 UTILITY REBATE PROGRAMS

Utilities have been spent millions of dollars each year over the last two decades in an attempt to increase market shares of energy-efficiency products. In the late 1990s, programmatic efforts shifted from rebates to a market transformation focus that included supply-side interventions, such as salesperson training, emerging market support, and retailer advertising support. In 2001, the state's energy crisis led to a shift back to rebate programs to obtain maximum, immediate energy savings potential. Thus, 2001 programs consisted of large-scale rebate and buydown programs, providing discounts on ENERGY STAR<sup>®</sup>-labeled appliances and lighting products. Approximately 7.5 million CFLs and 200,000 ENERGY STAR<sup>®</sup>-labeled appliances were ultimately discounted by the utilities.

Of energy-efficient appliance purchases in 2001, a significant percentage were rebated either by utilities and/or by retailers and manufacturers: half or more of refrigerators and clothes washers, over one-quarter of dishwashers, and one-sixth of room air conditioners. Many CFLs were discounted or rebated through ambitious buydown and rebate programs offered by the utilities. Such discounts helped offset the higher incremental cost of efficient appliances and CFLs, likely influencing a significant number of purchasers in their decision to invest in energy efficiency.

In particular, rebates played a significant role in encouraging energy-efficient refrigerator, clothes washer, and CFL purchases, where one-third or more found the rebates to be very influential in their decision to purchase an efficient product. For dishwashers and room air conditioners, the crisis and retailer promotions were much more of an influence than rebates.

Rebates were very influential in encouraging consumers to replace older, working appliances with newer, more efficient models. While the crisis was more of a factor in older clothes washer replacement, rebates were by far the most significant influence on early replacement of refrigerators.

## 7.10 UTILITY UPSTREAM PROGRAMS

As stated above, much utility energy-efficient program efforts in the recent past have focused on upstream market effects, that is, increasing market share through affecting manufacturers, distributors, and retailers. As a result of these upstream efforts, the availability of energy-efficient appliances and lighting equipment has been significantly influenced so that suppliers were able to meet the increased consumer demand expressed in 2001. Moreover, retailers were well-equipped with prior knowledge and financial assistance to promote the wide array of efficient products being shipped by manufacturers.

Absent historic utility efforts at influencing the upstream market, it is likely that last year's market shares would have been lower, as potentially fewer efficient models would have been

stocked and retailers would not have been prepared and able to promote them to the full extent that they did in 2001.

### **7.11 SUMMARY**

In conclusion, while the energy crisis and its accompanied media attention led to heightened awareness of conservation, other external factors acted to take full advantage of consumers' increased willingness to invest in energy efficiency, which ultimately resulted in increased market shares. While the state's intensive Flex Your Power campaign influenced the general population to "do their part" in undertaking easy, common-sense-based behavioral actions at home, ultimately retailer exposure, rebates, and the threat of higher electricity bills caused most appliance purchasers to invest in energy efficiency because they were convinced that such investments were financially sound.

Supplier ability to meet the increased demand was key to turning consumer willingness to purchase efficient products into actual purchases, as ENERGY STAR<sup>®</sup>-labeled appliances and CFLs were available to all who sought them and also were available with desirable features and would meet most applications. Prior and current utility programs directed at the upstream market are to be credited with ensuring adequate availability of energy-efficient products encompassing a variety of desired features and brands.



## 8.1 INTRODUCTION

This section presents the results of the CFL survey, which was implemented to gather self-reported inputs to CFL impact calculations, including installation rates, hours of use, and peak usage. Utility customers who have received or purchased CFLs in PY2001 through utility and non-utility programs were identified and surveyed through this effort.

This remainder of this section presents a brief overview of the programs examined by the survey, a demographic overview of program participants, and survey results.

## 8.2 OVERVIEW OF PROGRAMS

Four general types of delivery mechanisms were examined through this survey effort, including targeted event giveaway, door-to-door giveaway, leveraging other energy-efficiency programs, and upstream market interventions. The programs comprising each delivery mechanism are discussed briefly below. Each of the programs is also discussed in detail in Section 5.

### 8.2.1 Targeted Event Giveaway

Each of the investor-owned utilities (IOUs) held one or more giveaway events at which residents would receive a free CFL. PG&E held one event in San Francisco and required participants to turn in an incandescent bulb. SCE held over a dozen events in conjunction with county fairs and local festivals, providing residents with a free CFLs. Participants were not required to hand in an incandescent bulb. SDG&E held more than 60 CFL giveaway events at senior centers in San Diego, requiring seniors to turn in an incandescent bulb to receive 1 free CFL.

### 8.2.2 Door-to-Door Giveaway Program

The major door-to-door CFL giveaway program that was active in California in 2001 was the state's Powerwalk program. The California Conservation Corps implemented the program, walking door to door through low-income neighborhoods, handing out packs of four CFLs to interested residents. A total of 1.9 million CFLs were ultimately distributed to 475,000 low-income households.

### 8.2.3 Leveraging Other Energy Efficiency Programs

SCE and SDG&E offered participants of other programs CFLs as incentives to participating. SDG&E provided direct mail audit participants with one free bulb, while SCE offered refrigerator recycling participants either \$35 in cash or a five-pack of CFLs. A total of 700 SDG&E customers participated in the audit and received a free CFL, while about 6,500 SCE customers opted for the CFL incentive.

### 8.2.4 Reduced-Price Programs

SCE and SDG&E provided CFL manufacturers with a \$3 incentive per bulb, resulting in the shipment of thousands of reduced-priced CFLs to local retailers. SCE bought down over 200,000 CFLs, while SDG&E bought down 18,000. PG&E's CFL incentive program was structured differently, in that the \$3 incentive was provided to CFL purchasers at the cash register. PG&E provided discounts for seven million CFLs in 2001 through its point-of-purchase program.

## 8.3 DEMOGRAPHIC OVERVIEW OF PROGRAM PARTICIPANTS

Several programs targeted a distinct demographic group. For example, the SDG&E giveaway program was targeted at seniors, while the Powerwalk program targeted low-income households. As a result, the demographic makeup of participants differs by program type.

Table 8-1 provides a description of several demographic indicators by program. In this table and in tables and figures that follow, the four program delivery mechanisms are presented as five distinct programs: the Powerwalk program, CFL giveaway programs, SCE Refrigerator Recycling Program, SDG&E Mail-in Audit Program, and incentive/buydown programs. The Powerwalk Program was designed at the state level and does not differ by utility, so it is not shown broken out by utility. However, the giveaway and incentive/buydown programs were designed at the utility level and were implemented somewhat differently by utility territory. Therefore, results for the giveaway and incentive/buydown programs are generally broken out by utility. In cases where the data did not significantly differ over utilities, data is presented at the program level and not broken out by utility.

**Table 8-1  
Demographic Profile of Program Participants**

Program	Powerwalk	Event Giveaway			SCE Refrig Recycling	SDG&E Mail-in Audit	Incentive/ Buy-down	CA Overall <sup>1</sup>
		PG&E	SCE	SDG&E				
Target Demographic	Low- income	Asian	Low- income, ethnic, rural	Seniors	EE Program Participants	No target		
Renters	26%	24%	36%	21%	17%	12%	11%	23%
Multi-family	21%	34%	13%	31%	11%	10%	12%	13%
No college/trade	42%	15%	33%	24%	25%	11%	15%	21%
Less than \$20k/yr	31%	12%	12%	21%	8%	10%	7%	8%
Ethnic (non-white)	59%	78%	43%	22%	41%	12%	28%	12%
Senior(s) in home	52%	56%	25%	84%	48%	65%	41%	37%
Avg # people	3.1	3.2	3.3	2.3	3.3	2.3	2.9	2.8

<sup>1</sup>The source used to calculate "California overall" statistics is the general population survey database, of which the methodology is discussed in Section 3 of this report.

As stated above, the participant groups differ as a result of program design. The Powerwalk program and SCE's giveaway programs successfully targeted low-income residents, who also

tended to have less education and belong to a non-white ethnic group. PG&E's giveaway event was predominantly attended by Asian residents, who were more often multi-family dwellers, had higher levels of education, and more often had a senior in the home. As expected, SDG&E's giveaway program obtained a high participation rate among households with seniors.

The incentive/buydown programs, SCE's refrigerator recycling program, and SDG&E's mail-in audit program were not targeted to a specific group, and the demographic make-up of the participants is more reflective of the general population than the other participant groups.

## 8.4 INSTALLATION RATES

This subsection presents installation rate results. One of the main objectives of the CFL survey was to determine how many of the CFLs distributed and discounted by 2001 programs in California are actually installed to date.

Figure 8-1 presents the installation rates of CFLs distributed by the five programs examined through the survey. Participants were asked to recall how many bulbs they initially received or purchased through the program and then were asked to report how many bulbs were currently installed. As shown, a very high percentage of CFLs that were distributed through the programs are currently installed. The utility giveaway programs achieved the highest installation rates, followed by the utility incentive/buydown programs. The refrigerator recycling program and the Powerwalk program achieved the same installation rate, while SDG&E's mail-in audit program, with 71 percent of CFLs installed, achieved the lowest.

Installation rates for the giveaway programs are significantly different by utility. PG&E's program achieved the highest installation rates, followed by SDG&E and then SCE. Recall that each utility program targeted a specific demographic group and that program success was measured in terms of reaching the targeted demographic in addition to achieving high installation rates.

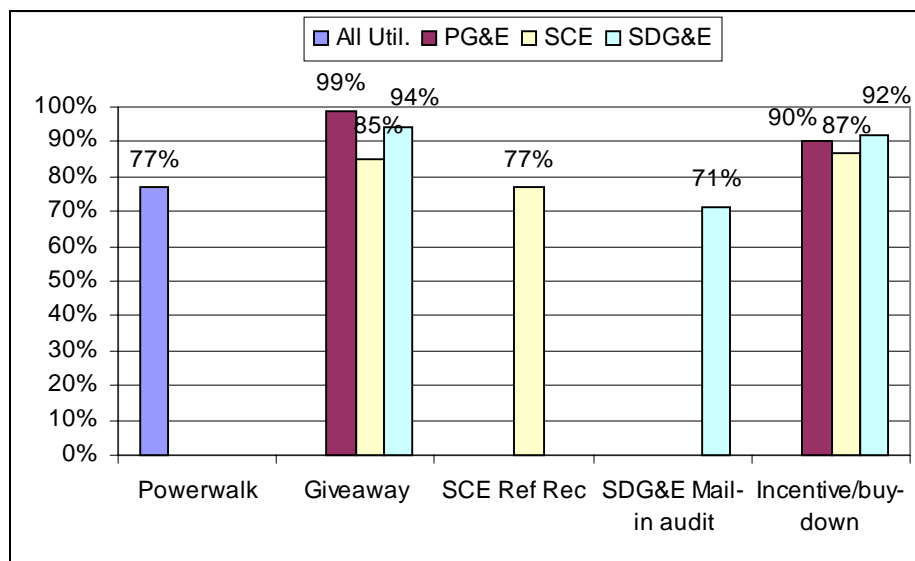
Installation rates for the incentive/buydown programs are not significantly different by utility. As these programs didn't target specific customer groups, it is not surprising that installation rates would be similar across territories.

The programs differed in terms of how many bulbs were provided or how many discounted bulbs were purchased. The following subsections provide more specific installation data for each program. Two final subsections discuss the reasons given by respondents for not installing all bulbs and what type of bulbs program CFLs replaced.

### 8.4.1 Powerwalk Program

The Powerwalk Program provided four bulbs to each participating household. Sixty-two percent installed all four bulbs. An average of three bulbs were installed. Table 8-2 provides installation results by utility territory and over all three territories.

**Figure 8-1**  
**Percentage of Program CFLs Currently Installed By Program**



**Table 8-2**  
**Number of Powerwalk CFLs Currently Installed by Utility Territory**

	Number of bulbs	PG&E	SCE	SDG&E	Total
Number received	4	100%	100%	100%	100%
Number installed	0	2%	7%	7%	5%
	1	12%	14%	7%	11%
	2	11%	13%	19%	14%
	3	6%	7%	3%	5%
	4	70%	57%	61%	62%
Average number installed		3.3	2.9	3	3
Average percentage installed		83%	73%	76%	77%

#### **8.4.2 SDG&E Mail-in Audit Program**

The SDG&E Mail-in Audit Program provided audit participants with one CFL. As shown in Figure 8-1, 71 percent of participants currently have the bulb installed.

Audit participants were asked if they were aware they would be receiving a free CFL at the time they decided to participate, i.e., fill out the survey and mail it in. Over half (55 percent) knew they would be receiving the free bulb. The CFL installation rate was compared for participants



who knew they were getting the bulb and those who didn't know, and it was not found to differ significantly.

Respondents who were aware they would be receiving a free CFL were asked how influential the free bulb was in getting them to participate. Table 8-3 presents the likelihood of participation without the free CFL. Note that two-thirds reportedly would have been very likely to participate even without the free CFL.

XENERGY examined CFL installation rates by likelihood of participating without the free CFL, and did not find any significant differences. Whether someone would have participated in the audit with or without the free CFL did not significantly affect the ultimate installation rates of the free bulbs.

**Table 8-3**  
**Likelihood of Participating in the Audit Without the Free CFL**

	2001
Very likely	68
Somewhat likely	21
Not very likely	5
Very unlikely	5

#### **8.4.3 SCE Refrigerator Recycling**

SCE's Refrigerator Recycling program provided participants with five CFLs. As shown in Table 8-4, an average of 3.9 bulbs are currently installed. Sixty-two percent installed all five bulbs.

**Table 8-4**  
**Number of SCE Refrigerator Recycling CFLs Currently Installed**

	Number of bulbs	SCE
Number received	5	100%
Number installed	0	8%
	1	9%
	2	5%
	3	8%
	4	7%
	5	62%
Average number installed		3.9
Average % installed		77%

#### 8.4.4 Incentive/Buydown

The utility incentive/buydown programs provided households residing in PG&E, SCE, or SDG&E territory with the opportunity to purchase discounted CFLs at participating retailers. Residents purchased a significant number of discounted CFLs, as shown in Table 8-5. An average of 5.8 discounted bulbs were purchased by utility customers in 2001. No significant difference in the number of bulbs purchased was found across utilities.

**Table 8-5**  
**Number of Discounted CFLs Purchased by Utility**

	<b>N</b>	<b>Mean</b>	<b>Std Dev</b>	<b>Min</b>	<b>Max</b>
PG&E	65	5.6	5	1	24
SCE	67	5.7	7.7	1	60
SDG&E	67	6.0	3.8	1	15
Total	199	5.8	5.7	1	60

Table 8-6 displays the average number of bulbs currently installed. On average, 5.1 of the 5.8 discounted bulbs are installed.

**Table 8-6**  
**Number of Discounted CFLs Currently Installed by Utility**

	<b>N</b>	<b>Mean</b>	<b>Std Dev</b>	<b>Min</b>	<b>Max</b>
PG&E	62	5.4	5.2	0	24
SCE	66	4.5	4.4	0	24
SDG&E	66	5.5	3.8	0	15
Total	194	5.1	4.5	0	24

In PG&E territory, many residents were aware that the bulbs were going to be discounted at the register. Those who were aware that the bulbs would be discounted were more likely to purchase more bulbs than those who were unaware that they would receive a discount at the cash register. Table 8-7 shows the average number of discounted CFLs purchased by PG&E point-of-purchase rebate awareness.

**Table 8-7**  
**Number of PG&E Discounted Bulbs Purchased by Awareness of Rebate**

<b>Aware of PG&amp;E Rebate</b>	<b>2001 Participants</b>	<b>Average Number of bulbs purchased</b>
Aware	26%	8.1
Unaware	74%	4.9
n	67%	

Survey respondents were asked if they would have been likely to purchase the bulbs if they had each cost \$3 more than they cost. This question was particularly important for SCE and SDG&E participants, who may not have been aware of the rebate but could report whether a \$3 increase in the price of the bulb would have affected their purchase decision. Over half reported that they

would have been somewhat to very likely to purchase the CFLs even if they cost \$3 more. Table 8-8 displays the frequencies of responses for this question. Note that the results did not differ significantly across utility service territory.

**Table 8-8**  
**Likelihood of Purchasing CFLs if they had Cost \$3 More**

Likelihood	2001
Very likely	39%
Somewhat likely	26%
Not very likely	18%
Very unlikely	12%
Don't know	6%
n =	201

Installation rates were significantly higher among those that were very likely to purchase the bulbs even if they cost \$3 more each. Table 8-9 displays installation rates by the likelihood of purchase.

**Table 8-9**  
**CFL Installation Rate By the Likelihood to Purchase CFLs if they Cost \$3 More**

Likelihood	Installation Rate
Very likely	95%
Somewhat likely	92%
Not very likely	87%
Very unlikely	77%
Don't know	83%

#### **8.4.5 Reasons for Not Installing All CFLs Purchased/Received**

About 25 percent of program participants surveyed currently have not installed all the CFLs they received through the program. Of those, 41 percent said that they plan to install the rest of the program CFLs once the CFLs they are currently using burn out. The remaining were either unhappy with the CFL(s) they received through the program, or their CFLs have burned out, been given to someone else, or were broken. Table 8-10 summarizes the percentage of respondents with all, some, or no program CFLs currently installed.

**Table 8-10**  
**Percentage of Participants With CFLs Still Installed**

	2001
Installed all CFLs	75%
Installed some CFLs, and plan to install the rest once the current ones burn out	10%
Didn't install any/removed all CFLs	10%
Some or all CFLs have burned out, been given away, or broken	5%
n	809

Table 8-11 displays the various reasons why not all CFLs purchased or received are currently installed. These results did not differ significantly by program or by utility.

**Table 8-11**  
**Reasons for Not Installing All Program CFLs**

<b>Reason</b>	<b>2001</b>
Bulbs didn't fit in fixtures	26%
Not enough fixtures	16%
Light quality/ brightness	6%
Burnt out	5%
Saving rest of bulbs for high use fixtures	4%
Gave to someone else	3%
Broken	2%
Other	10%
Don't know	4%
n	205

Multiple responses permitted; does not sum to 100 percent

#### **8.4.6 Type of Bulb Program Bulbs Replaced**

All survey respondents who installed program CFLs were asked whether or not they replaced an old CFL when they installed their new CFL. Almost one-fifth (17 percent) did replace at least one old CFL with a new CFL. Of those who purchased or received only one program CFL, 19 percent replaced an old CFL. Of those who purchased or received more than one program CFL, 5 percent replaced all old CFLs and 10 percent replaced some old CFLs.

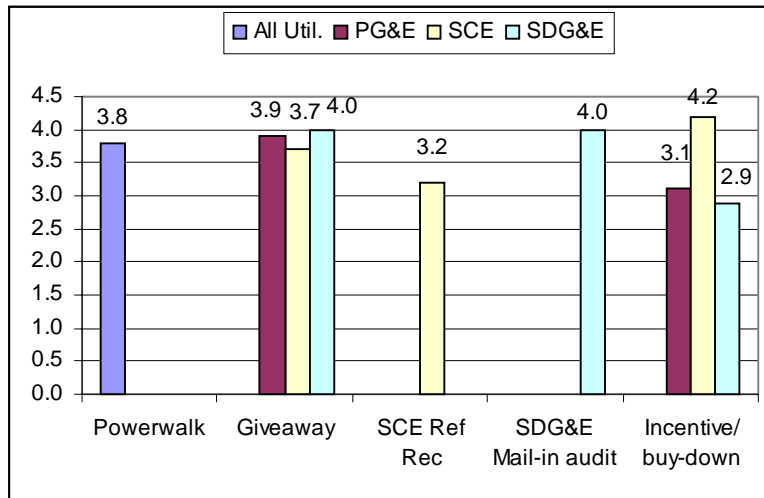
The extent of replacement of old CFLs with new CFLs was not found to differ significantly across programs or utility territories.

### **8.5 HOURS OF USAGE**

This subsection discusses how often the CFLs distributed or discounted by the various programs are used per day. There was no expectation that a certain program delivery mechanism would lead to higher or lower CFL usage once the bulb was installed; however, each program delivered a unique number of bulbs, which could lead to differences in overall average usage.

Figure 8-2 presents the average number of hours program CFLs are used per day by program. Program CFLs are on average each used between 3 and 4 hours per day. The average is not significantly different across programs. However, for the incentive/buydown program, the average is significantly different across utilities, with SCE having the highest average daily usage.

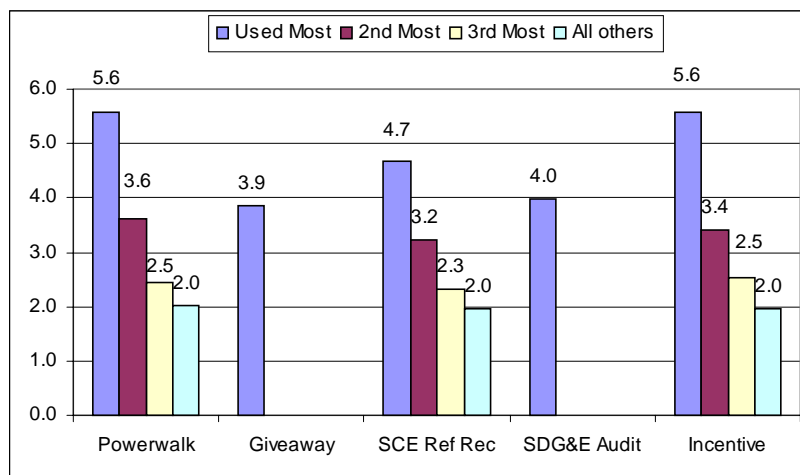
**Figure 8-2**  
**Average Hours of Usage Per Day Per Bulb**



Hours of usage data was collected from respondents on a per-bulb basis, starting with the “most-used” bulb. While Figure 8-2 presents usage results over all bulbs for each program, Figure 8-3 presents usage results per bulb by descending usage. Figure 8-3 illustrates the drop in usage from the most used bulb to the second most used bulb, etc. Note that after the second most used bulb, average usage per day drops below 3 hours.

The Powerwalk program and the incentive/buydown programs have the highest average usage for the bulb that is used most. This may be because these participants are home more often (especially in the case of the Powerwalk program since participants had to be home when the Powerwalk representative came around their neighborhood to participate).

**Figure 8-3**  
**Average Hours of Usage Per Day By Bulb**



CFL hours of usage per day depends greatly on where the bulb is installed. CFLs installed outside the home are used more often than bulbs installed in bathrooms or hallways. Table 8-12 displays the average hours of usage per day per bulb by the location of bulb installation. Not surprisingly, these results don't vary by program type.

**Table 8-12**  
**Average Hours of Usage Per Day Per Bulb By Location**

Location	N	Mean	Std Dev.	Min	Max
Outside	120	5.7	4.1	1	24
Den/Office	79	4.3	3.0	1	18
Kitchen	226	4.3	3.1	1	24
Living room	445	4.2	2.5	1	21
Other	12	4.2	2.9	1	12
Dining room	55	3.7	1.7	1	10
Hall	57	3.6	3.8	1	24
Bedroom	269	3.2	3.0	1	24
Bathroom	110	3.0	3.2	1	24
Closet	7	2.3	6.7	1	7
Laundry Room	12	2.1	2.3	1	9

## 8.6 ON-PEAK USAGE

This subsection presents peak usage results. Programs offered in 2001 to California residents often sought to achieve peak savings (kW) in addition to energy savings (kWh).

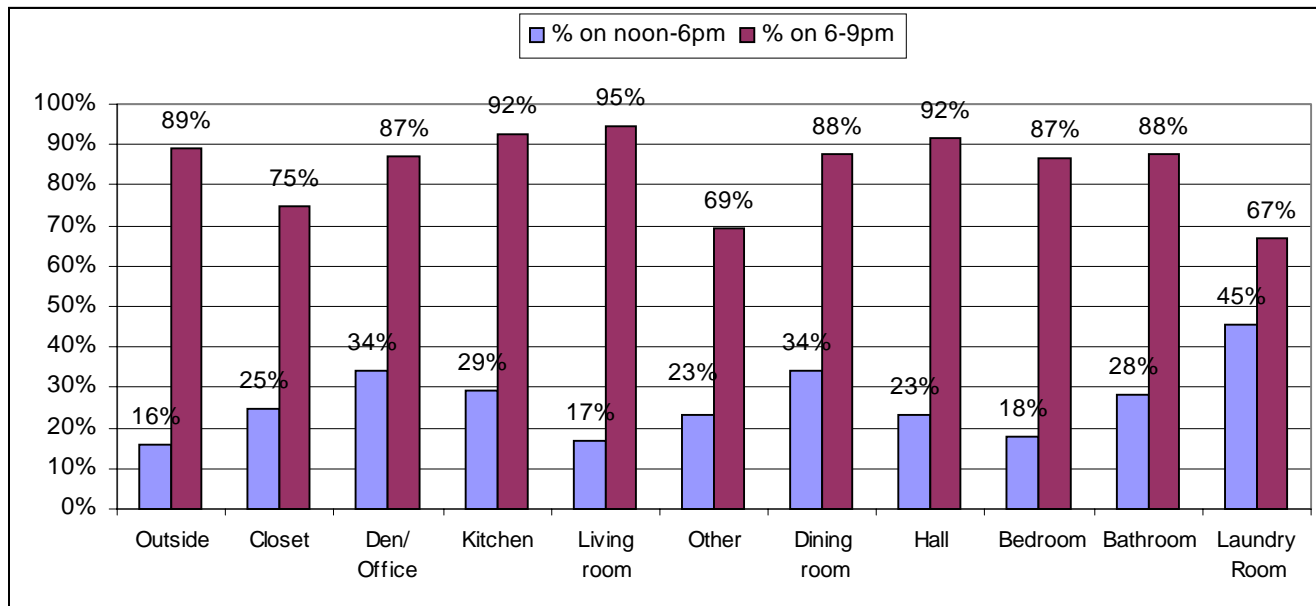
Survey respondents were asked to report CFL usage during two peak periods—noon to 6 P.M. and 6 P.M. to 9 P.M. Less than 25 percent of CFLs are operating from noon to 6 P.M., while close to 90 percent of CFLs are operating from 6 P.M. to 9 P.M.. Table 8-13 shows the percentage of bulbs operating during each peak period, by program. Although the data is shown by program, these results are not significantly different across programs or utility territories.

**Table 8-13**  
**Percentage of CFLs Operating During Peak Periods by Program**

Delivery Mechanism	Noon-6 P.M.	6-9 P.M.
Powerwalk	22	87
Giveaway	21	94
SCE Refrigerator Recycling	23	87
SDG&E Mail-in audit	17	85
Incentive/ buy-down	15	91

While peak usage doesn't vary significantly by program, it does vary significantly by location of bulb installation. Figure 8-4 presents the percentage of bulbs operating during the two peak periods by location of installation. The figure is sorted by location, with the highest usage location (outside) first and lowest usage location (laundry room) last.

**Figure 8-4**  
**Percentage of CFLs Operating During Peak Period by Location of Installation**



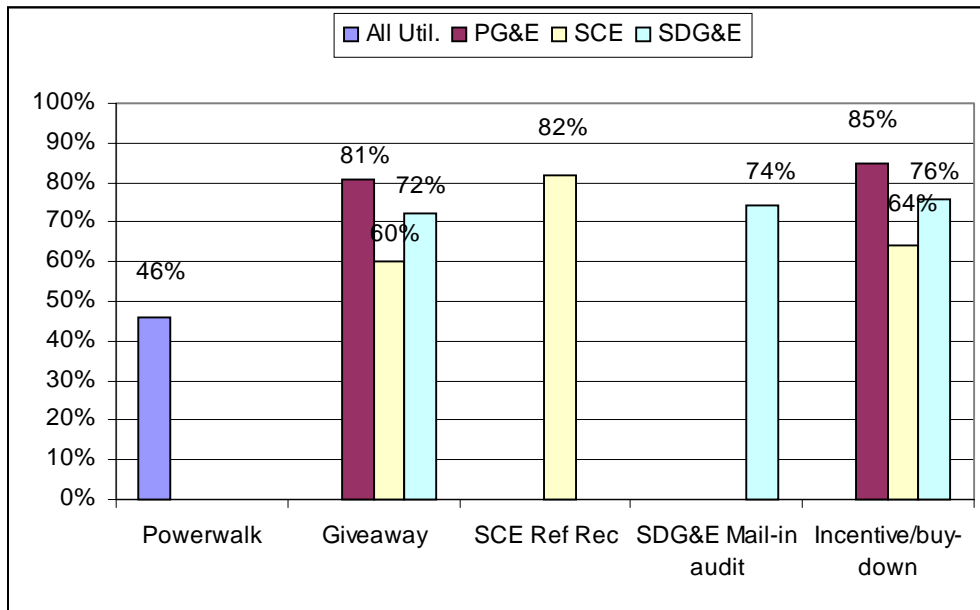
## 8.7 PRE-PROGRAM PARTICIPATION CFL AWARENESS AND USAGE

This subsection discusses participants' awareness and usage of CFLs prior to their participation in a 2001 CFL program.

Figure 8-5 displays the percentage of survey respondents that were aware of CFLs prior to their 2001 program participation. Approximately three-quarters of program participants were already aware of CFLs prior to 2001, with the exception of Powerwalk participants, where less than half had prior CFL knowledge. Prior CFL awareness by utility territory for giveaway and incentive/buydown participants is significantly different. PG&E customers were more likely to have prior knowledge, followed by SDG&E, and finally SCE.

Figure 8-6 provides data on when program participants first learned of CFLs. (Percentages sum to the percentage of aware participants.) Utility giveaway, incentive/buydown, and SDG&E's mail-in audit program participants were more likely to have been aware of CFLs over 2 years ago.

**Figure 8-5**  
**Awareness of CFLs Prior to 2001 CFL Program Participation**



**Figure 8-6**  
**Awareness and When First Heard of CFLs Prior to PY2001 Participation**

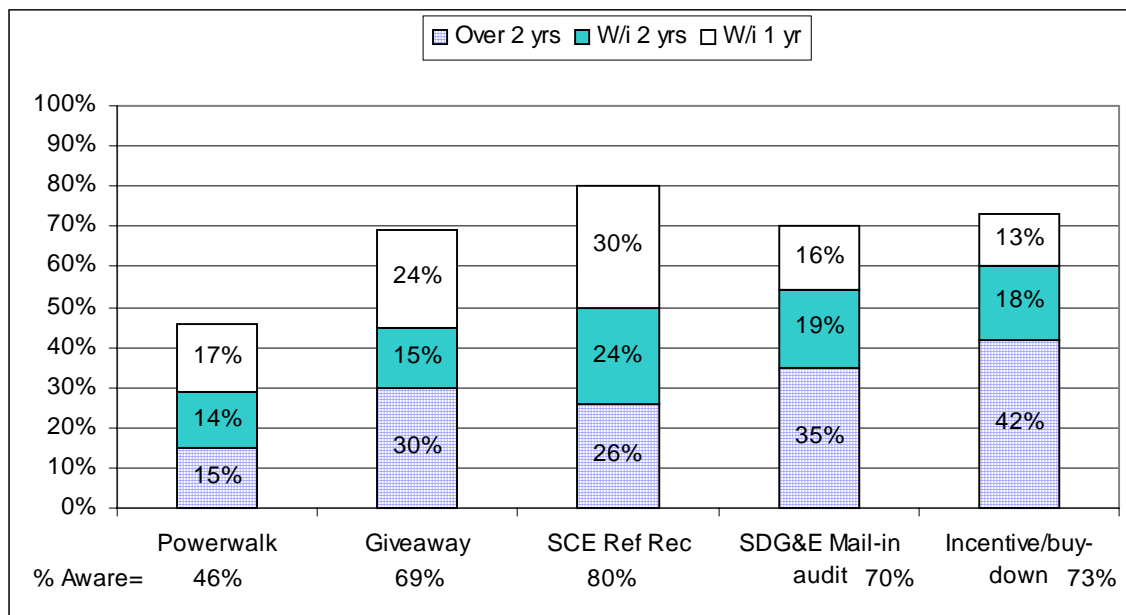
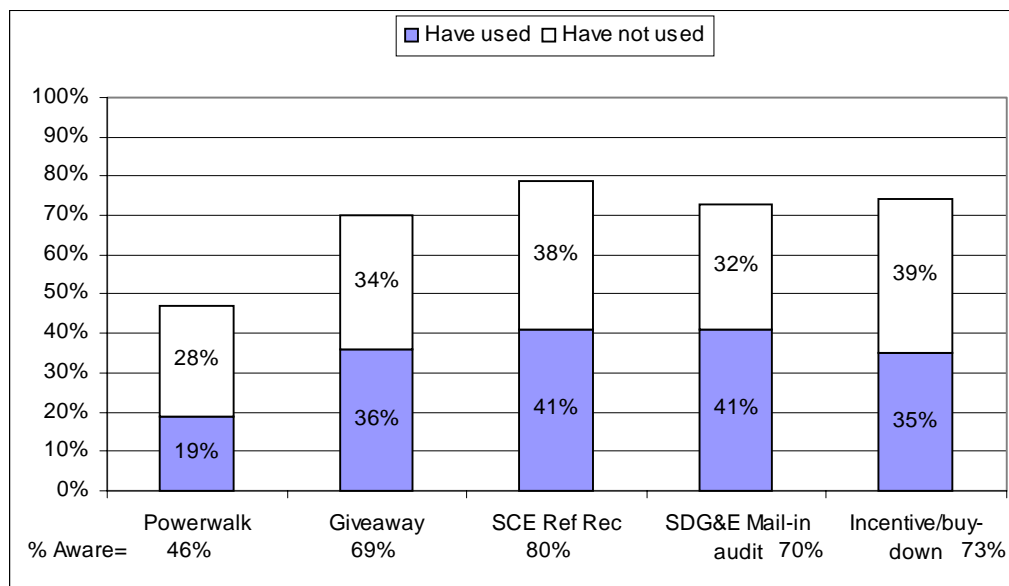




Figure 8-7 shows the breakdown of prior CFL usage of participants who were aware of CFLs prior to their 2001 program participation. Of *prior aware* participants, the percentage who had used CFLs does not differ significantly by program. Around half of *prior aware* participants had used CFLs in the past. However, because prior CFL awareness significantly differs by program, *overall* prior usage also differs by program, as shown in Figure 8-7. Less than one-fifth of Powerwalk participants had used CFLs before receiving them through the program, while over one-third of all other program participants had used them before 2001.

**Figure 8-7**  
**Usage of CFLs Prior to 2001 CFL Program Participation**



As stated above, almost half the program participants who were aware of CFLs prior to their 2001 participation had not used them. Table 8-14 presents their reasons for not using CFLs. Over one-third cited cost as a prohibitive factor. Others said they couldn't find them, were unsure about the quality, or reported that CFLs wouldn't fit in their fixtures. These results are not significantly different across programs.

**Table 8-14**  
**Prior Aware Participants' Reasons for Not Using CFLs**  
**Prior to 2001 Program Participation**

Reason	Percent of respondents
Too expensive	39%
Couldn't find CFLs	11%
Other	11%
Didn't think I'd like the quality	8%
Wouldn't fit my fixtures	6%
N	273

Multiple responses permitted: does not sum to 100 percent

## 8.8 GENERAL ENERGY EFFICIENCY KNOWLEDGE AND EFFORTS

This subsection presents data on survey respondents' knowledge of and efforts towards energy efficiency in the home.

Participants' self-reported knowledge about ways to save energy in their home differs significantly across programs. These results are consistent with prior CFL awareness, in that Powerwalk and SCE giveaway participants are less likely to have been aware of CFLs in the past, and are less likely to rate their knowledge of ways to save energy highly, compared to other program participants. Recall that these two programs specifically targeted low-income residents, who may have fewer resources to devote to energy conservation.

Table 8-15 displays the data on self-reported knowledge by program, with responses grouped into three categories—not much knowledge (1-3), some knowledge (4-6), and a lot of knowledge (7-10). The last row presents the mean score.

**Table 8-15**  
**Knowledge About Ways to Save Energy in the Home (1-10 Scale)**

Program Knowledge	Powerwalk	Giveaway			SCE Refrigerator Recycling	SDG&E Mail-in Audit	Incentive/Buydown		
		PG&E	SCE	SDG&E			PG&E	SCE	SDG&E
Not much (1-3)	7%	2%	7%	5%	2%	1%	1%	0%	3%
Some (4-6)	31%	20%	36%	14%	24%	18%	20%	20%	27%
A lot (7-10)	62%	78%	57%	82%	75%	81%	79%	80%	70%
mean	7.0	7.8	6.6	7.8	7.6	7.9	8.0	7.8	7.1

In addition to learning about participants' perception of their current energy conservation knowledge levels, we attempted to find out how much of that knowledge was gained due to the energy crisis in California. The energy crisis was covered widely in the media, and the average California resident was exposed to a wide variety of information about the crisis and about energy conservation.

We asked respondents to what extent had their knowledge about ways to save energy in the home increased in response to the energy crisis. Table 8-16 presents the responses to this question, categorized as in Table 8-13, not much (1-3), some (4-6), and a lot (7-10).

Respondents who participated in a program that required them make a purchase (incentive/buydown) or mail in a survey (mail-in audit program) were less likely to say that their knowledge had increased a lot as a result of the crisis. These participant groups were also more likely to have been aware of CFLs over 2 years ago and probably had a significant level of knowledge before California's energy crisis.

**Table 8-16**  
**Extent Knowledge has Increased Due to the Energy Crisis (1-10 Scale)**

Program	Giveaway				SCE Refrigerator Recycling	SDG&E Mail in Audit	Incentive/Buydown		
	Powerwalk	PG&E	SCE	SDG&E			PG&E	SCE	SDG&E
Extent knowledge has increased due to the crisis									
Not much (1-3)	13%	8%	19%	13%	18%	17%	29%	26%	9%
Some (4-6)	25%	24%	28%	18%	16%	25%	22%	18%	30%
A lot (7-10)	62%	68%	53%	69%	66%	58%	49%	56%	61%

Table 8-17 shows the correlation between knowledge and how the crisis contributed to knowledge. The values in the table are the mean of the score given by respondents of the extent their knowledge levels have increased due to the crisis. The first column shows the category of current knowledge level—not much, some, and a lot of knowledge about ways to save energy in the home. Those that report having a lot of knowledge are more likely to state that their knowledge has increased a lot due to the energy crisis. Energy conservation messages probably resonated more with those who already had some base level of knowledge.

**Table 8-17**  
**The Extent the Crisis Contributed to Knowledge (mean score) by Current Knowledge**

Program	Giveaway				SCE Refrigerator Recycling	SDG&E Mail-in Audit	Incentive/Buydown		
	Powerwalk	PG&E	SCE	SDG&E			PG&E	SCE	SDG&E
Current Knowledge Level									
Not much (1-3)	5.8	5.0	6.0	1.7	7.0	5.0	7.0	-	3.0
Some (4-6)	6.2	7.1	5.5	6.9	7.1	6.6	5.0	6.9	6.5
A lot (7-10)	7.6	7.5	7.0	7.6	7.1	6.9	6.3	6.1	7.3
Overall	7.0	7.4	6.4	7.2	7.1	6.7	6.1	6.2	7.0

In addition to asking respondents about their knowledge about energy conservation, we also asked them how much they have done in their own home to save energy.

Table 8-18 presents the data on efforts to save energy in the home by program. Responses are categorized similar to those in Tables 8-17 and 8-16— have not done much (1-3), have done some (4-6), and have done a lot (7-10). The final row presents the mean score.

While the data don't differ much across programs, the average score is statistically different between programs. Note that 93 percent of SDG&E giveaway participants said they have done a lot to save energy in their home. This program targeted seniors who attend senior center events. SCE refrigerator recycling participants also are very likely to have done “a lot” to save energy in their home—as evidenced by their responses and by having recycled an old refrigerator or freezer and opted for CFLs instead of cash as their incentive.

**Table 8-18**  
**Household Efforts to Save Energy in the Home (1-10 Scale)**

Program Efforts	Powerwalk	Giveaway			SCE Refrig Recycling	SDG&E Mail- in Audit	Giveaway		
		PG&E	SCE	SDG&E			PG&E	SCE	SDG&E
Not done much (1-3)	5%	2%	6%	2%	3%	2%	2%	2%	3%
Done some (4-6)	20%	16%	16%	6%	13%	15%	20%	16%	16%
Done a lot (7-10)	74%	82%	78%	93%	84%	83%	78%	82%	81%
mean	7.9	8.1	7.9	8.8	8.3	8.1	7.8	8.1	7.7

Table 8-19 shows how much respondents attributed their energy-efficiency activities to the crisis. Around one-half of respondents attributed a lot of their recent efforts to the crisis. SDG&E giveaway participants and SCE refrigerator recycling participants are more likely to say “a lot” of their energy efficiency activity was in response to the crisis. SDG&E mail-in audit participants are least likely to report that “a lot” of their efforts are due to the crisis.

**Table 8-19**  
**How Much of EE Activity is Due to Energy Crisis**

Program Efforts	Powerwalk	Giveaway			SCE Refrig Recycling	SDG&E Mail- in Audit	Giveaway		
		PG&E	SCE	SDG&E			PG&E	SCE	SDG&E
A lot	47%	43%	45%	57%	58%	33%	42%	48%	54%
Some	25%	33%	31%	16%	26%	36%	35%	25%	27%
A little	9%	9%	12%	15%	7%	10%	12%	13%	10%
None	19%	15%	12%	12%	9%	21%	11%	13%	9%

Similar to the knowledge results shown in Table 8-17, the level of a respondent’s energy efficiency activity is correlated with respondents’ attribution of that activity to the crisis. Table 8-20 shows the level of energy-efficiency activity for those that said that “a lot” of their activity is due to the crisis. Those that report that “a lot” of their activity has occurred in response to the crisis are far more likely to have initiated “a lot” of activity.

**Table 8-20**  
**The Extent the Crisis Contributed to EE Activity (% who said “a lot”) by Level of EE Activity**

Program	Powerwalk	Giveaway			SCE Refrigerator Recycling	SDG&E Mail-in Audit	Incentive/Buydown		
		PG&E	SCE	SDG&E			PG&E	SCE	SDG&E
Efforts to save energy									
Haven't done much (1-3)	27%	0%	25%	0%	0%	0%	0%	0%	50%
Have done some (4-6)	27%	27%	18%	0%	23%	20%	39%	27%	45%
Have done a lot (7-10)	54%	47%	52%	60%	65%	36%	43%	53%	56%

## 8.9 SUMMARY

Approximately 10 million CFLs were delivered through utility and non-utility organizations in 2001. The major programs employed four distinct methods for delivering CFLs:

- Targeted-event giveaways
- Door-to-door giveaways
- Leveraging existing energy-efficiency programs
- Reduced-price programs.

Each delivery mechanism was selected so that the program could meet a specific set of objectives, such as reaching a target audience or achieving maximum energy savings. Targeted-event giveaways used existing rural and ethnic events, cost-effectively targeting specific groups of residents. The major door-to-door program implemented in 2001, the state's Powerwalk program, was a large-scale program that effectively reached almost half a million households. This type of program relied upon an existing network, the California Conservation Corps, to cost-effectively locate target households (i.e., households located in predominantly low-income neighborhoods) and distribute four CFLs per home. Leveraging existing energy-efficiency programs is a very cheap way to increase the impact of existing programs, and both SCE and SDG&E used this approach, for example, offering CFLs as an incentive for recycling an old refrigerator. Finally, in 2001, reduced-price programs provided discounts on millions of CFLs in retail outlets, reducing the incremental cost of CFLs over incandescent bulbs.

The impacts associated with each delivery strategy varied only to a significant degree based on the number of CFLs given away and whether the CFLs were fully or partially subsidized. Table 8-21 summarizes the inputs to energy savings impact calculations that were developed through this study (e.g., installation rates, average hours of use, on-peak usage, etc.).

**Table 8-21**  
**Summary of CFL Survey Results**

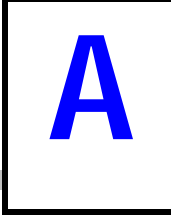
	Total CFLs Distributed	Installation Rate	Average Hours of Use	% Used on Peak	
				Noon-6pm	6-9pm
<b>Powerwalk</b>	1,900,000	77%	3.8	22%	87%
<b>Giveaway Programs</b>					
PG&E	4,500	99%	3.9	21%	94%
SCE	34,000	85%	3.7		
SDG&E	18,000	94%	4.0		
<b>SCE Refrigerator Recycling Program</b>	27,500	77%	3.2	23%	87%
<b>SDG&amp;E Mail-in Audit</b>	700	71%	4.0	17%	85%
<b>Incentive/Buydown Programs</b>					
PG&E	7,085,500	90%	3.1	15%	91%
SCE	357,000	87%	4.2		
SDG&E	18,000	92%	2.9		
<b>Total/Average</b>	9,445,200	87%	3.3	16%	90%

As shown, programs where only one CFL was distributed, such as the giveaway programs implemented by each of the utilities, had the highest overall installation rates (93 percent). The next highest overall installation rate is associated with incentive/buydown programs (90 percent), where, on average, participants purchased six discounted bulbs. Due to the partial subsidy, the overall installation rate remained high. In comparison, the two major programs for which several CFLs were given away, the state's Powerwalk program and SCE's Refrigerator Recycling incentive, the overall installation rate was much lower (77 percent).

Hours of usage, another input to program impacts, was affected significantly by the number of bulbs subsidized but not by the subsidy type. Self-reported hours of usage ranged from 4 to 6 hours per day for the most used bulb to an average of only 2 hours per day for the least used bulbs.

A final input to program impacts, the wattage differential between the bulb replaced and the bulb installed, is often calculated assuming that an incandescent bulb is replaced. However, we found that that is not always the case as participants reported that upwards of 10 percent of CFLs delivered through major programs in 2001 replaced older CFLs.

In conclusion, a broad array of CFL delivery strategies were employed by the major programs offered in 2001, ultimately providing approximately 10 million CFLs at a reduced price or at no charge to California residents. Each strategy was successful in meeting a specific objective, and together the programs targeted many consumer segments, some of which have been underserved by energy-efficiency programs in the past. Programs that gave away only one CFL or partially subsidized an unlimited number of CFLs achieved the highest overall installation rates, while hours of usage declined as the number of bulbs given away *or* discounted increased. Finally, program planners should consider the effects of increased CFL market shares, as the frequency of program CFLs replacing existing CFLs increases.



# MYSTERY SHOP PROTOCOLS

## Mystery Shopping Evaluation Statewide Residential Lighting and Appliance Program

### Mystery Shopper Guidelines & Evaluation:

#### Appliances

This document contains the guidelines for completing evaluation along with the evaluation itself. The guidelines contain the sequence of activities to be carried out during the shop as well as scripts for engaging the sales people. The results of your shop are to be entered on the Appliance Questionnaire.

For appliance stores, you will be shopping for two of the following four appliances:

1. refrigerators,
2. dishwashers,
3. clothes washers, and
4. room air conditioners.

In your instructions from Jancyn, you will be told which two appliances you will be shopping for. Please carefully read the guidelines before reviewing the questionnaire.

Enter the store and go to the appliance section. Observe the point of purchase advertising. Note which appliances are advertised, the organizational sponsor (manufacturer, utility company, store, etc.), and the type of material (banner, flyer, poster, booklet, brochure, etc.). Note where the information is displayed, whether it is easy to see and read, and whether the display is attractive. Also, note whether “energy use” or “energy efficiency” is mentioned and, if so, what is said; whether the ENERGY STAR<sup>®</sup> label is displayed; whether a utility, store, or manufacturer rebate(s) is offered, and whether the rebate is for energy efficient equipment or not.

#### Shopping for Appliances

Next to each store name and address are listed the two appliances that you will be shopping for at that store. When approached by a sales person, explain that you are shopping for the two appliances. For example, say: “I’m shopping for a dishwasher and a room air conditioner and I’d like you to show me *three of each*.” This means that you’ll be looking at *three* dishwashers and *three* room air conditioners. If he/she offers to show you more than three models of a given appliance, say: “I only have time to see three.” For each appliance, the sales person will probably ask what features you are interested in. Below, we provide the following information for each of the appliances that you might be shopping for. You should *always* describe the appliances you are shopping for using these descriptions. If they ask you what your price range is, tell them that you are not sure, and you’d just like to examine the three models that they’d recommend.

**Dishwasher**

Ask for a white standard size dishwasher.

**Clothes washer**

Ask for a white washer, standard size (i.e., not greater than 3 cubic feet).

**Room Air Conditioner**

Ask for a room air conditioner that is 8,000 to 9,000 BTUs.

**Refrigerator**

Ask for a white 22 cubic foot refrigerator with either a top or side freezer and no ice in the door. There can be an icemaker inside the freezer portion.

As the sales person shows you the three choices, note whether he/she mentions energy use, energy efficiency, rebates, lifecycle costs, etc. and what he/she says regarding energy use, energy efficiency, rebates, lifecycle costs, etc. Also, note whether the ENERGY STAR<sup>®</sup> label is on the appliance or on a card placed on the appliance. As you inspect each of the models you are shown, please record accurately the manufacturer, model number, price without any rebates, and the amount of any rebate(s). After you leave the appliance section of the store, please complete the questionnaire associated with the first appliance you are shopping for.

**Problem Situations**

There are three problems that may arise during your shopping. The first is that the store may not stock the equipment you are supposed to be shopping for. The second is that you may not be able to get the attention of the sales person. The third is that the store manager may question you about your reason for being in the store.

*Stocking Problems*

In this study, we are interested in the following equipment: refrigerators, dishwashers, clothes washers, and room air conditioners. You are being asked to shop for two appliances. However, it is possible that the store might not stock one of two the appliances that you are supposed to be shopping for. If this happens, replace the equipment they don't have with another that they do have. Use the following table to make your choices about which equipment to shop for in such a situation. The two "X"s in each row mean that these are the two appliances that you are supposed to be shopping for. As you can see, all possible combinations are represented. For example, the first row has "X"s for refrigerator and dishwasher. So, if you were supposed to be shopping for a refrigerator and a dishwasher, but the store didn't carry one of them, find the cell that has a one in it. In this case, there is a "1" in the "Room Air Conditioner" cell, which means that this is your first choice for a replacement appliance to shop for. If they don't have a room air conditioner, then go to the second choice, "Clothes Washer." If the store doesn't stock one of the



two appliances that you are shopping for and does not stock any of the others, then shop only for the one appliance that the store does stock. This still counts as a shop.

### A.1.1 Alternative Appliance Choice Table

Refrigerator	Dishwasher	Clothes Washer	Room Air Conditioner
X	X	2	1
X	2	X	1
X	2	1	X
2	X	X	1
2	X	1	X
2	1	X	X

*If the store does not carry any of the four appliances, then note this for the record and leave the store. This still counts as a shop.*

#### *Sales Person Attention*

In some stores, you may encounter some difficulty in getting the sales person to spend the time showing you the equipment that you are shopping for. First, you should be persistent and patient. If you still are having trouble in getting their attention, you should go to the store manager and tell him or her that you need assistance.

#### *Store Manager Questions*

If the store manager or other store staff become suspicious and start asking questions about what you are doing in their store, simply tell them that you are comparison shopping. If they persist, try to continue the shop as best as you can. Please try to complete the shop. Note on the questionnaire that you encountered a problem with the store manager, how you handled it, at what point in your shop the problem occurred, and whether you were able to complete the shop.

## Mystery Shopping Evaluation Statewide Residential Lighting and Appliance Program

Store ID: \_\_\_\_\_

### Mystery Shopper Questionnaire:

#### First Appliance

Name of Shopper/Shopper ID: \_\_\_\_\_

### A.2 STORE NAME:

\_\_\_\_\_

Store Address: \_\_\_\_\_

Date of Shop: \_\_\_\_\_

Time Entered Store: \_\_\_\_\_

Time Exited Store: \_\_\_\_\_

First Equipment Shopping For:

- Refrigerators
- Dishwashers
- Clothes washers
- Room Air Conditioners

1. Were there any **energy-efficiency-related** point-of-purchase materials on display for the equipment that you were shopping for?
  - Yes (CONTINUE)
  - No (GO TO QUESTION 5)
  
2. What kinds of energy-efficiency-related point-of-purchase materials were they? (CHECK ALL THAT APPLY)
  - Banners
  - Flyers/brochures
  - Posters
  - Videos
  - Stickers
  - Other (Please specify: \_\_\_\_\_)

3. Please check the types of *energy efficient* equipment that were mentioned in these materials and their organizational sponsor? (CHECK ALL THAT APPLY)

	PG&E	SCE	SDG&E	SoCal Gas	Energy Star	Manu- facturers	Other (Specify Below)
Energy Efficient Refrigerator							
Energy Efficient Dishwasher							
Energy Efficient Clotheswasher							
Energy Efficient Room Air Conditioner							

4. Please indicate the extent to which you agree with the following statements on a scale of 1 to 4, with a “1” meaning “strongly disagree” and a “4” meaning “strongly agree”.

- a. \_\_\_\_ The point-of-purchase materials were easy to see
- b. \_\_\_\_ The point-of-purchase materials were easy to understand
- c. \_\_\_\_ The point-of-purchase materials were nicely displayed

5. How many units did the sales person *initially* show you?  
Number of Units: \_\_\_\_

6. Of the units that you were *initially* shown, how many were voluntarily described by the sales person as being “energy efficient”?  
Number Described by Sales Person as Energy Efficient: \_\_\_\_

7. Of the units that you were *initially* shown, how many had the ENERGY STAR<sup>®</sup> label?  
Number of Units Having the ENERGY STAR<sup>®</sup> Label: \_\_\_\_

**RECORD HERE ANY INFORMATION VOLUNTEERED BY THE SALES PERSON REGARDING ENERGY STAR<sup>®</sup>** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**INSTRUCTIONS: IF NUMBER OF UNITS DESCRIBED BY SALES PERSON AS BEING ENERGY EFFICIENT (IN QUESTION #6 ABOVE) EQUALS ZERO, THEN GO Q. 7a. OTHERWISE SKIP TO QUESTION #12.**

7a. “Do all three of these use the same amount of electricity?”

- Yes  
 No  
 Don't Know

7b. “Are all three equally energy efficient?”

- Yes  
 No  
 Don't Know

**IF, AFTER RAISING THE ENERGY EFFICIENCY ISSUE, HE/SHE OFFERS TO SHOW YOU MORE THAN THE THREE MODELS HE/SHE HAS ALREADY SHOWN YOU, SAY: “I REALLY ONLY HAVE TIME TO SEE TWO MORE.”**

8. After you explicitly asked the sales person about energy efficiency, how many of the units *initially shown* to you were *now* described by the sales person as being “energy efficient”?  
 Number Described by Sales Person as Energy Efficient: \_\_\_\_\_

9. After you explicitly asked the sales person about energy efficiency, how many *additional units* did he/she show you?

- 0 [SKIP TO QUESTION 12]  
 1 [CONTINUE]  
 2 [CONTINUE]

10. Of the *additional units* that you were shown, how many were described by the sales person as being “energy efficient”?  
 Number Described by Sales Person as Energy Efficient: \_\_\_\_\_

11. Of the *additional units* that you were shown, how many had the Energy Star label?  
 Number of Units Having the Energy Star Label: \_\_\_\_\_

12. Lately, I've been hearing about something called ENERGY STAR<sup>®</sup>. What is ENERGY STAR<sup>®</sup>? \_\_\_\_\_

13. Please indicate the extent to which the sales person was knowledgeable about energy efficiency. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

14. Please indicate the extent to which the sales person mentioned energy efficiency as a *positive feature* in his/her sales pitch. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all” and a “4” meaning “A great deal”.

**Answer:** \_\_\_\_\_

15. Please indicate the extent to which the sales person appeared knowledgeable about the *ENERGY STAR<sup>®</sup> Program*. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

16. Please indicate the extent to which the sales person appeared knowledgeable about any *utility* rebate programs for energy efficient equipment. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

17. Please indicate the extent to which the sales person appeared knowledgeable about any *manufacturer* rebate programs for energy efficient equipment. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

18. Please indicate the extent to which the sales person appeared knowledgeable about any *store* rebate programs for energy efficient equipment. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

19. If sales person discussed energy efficiency, which of the following did the sales person mention? (**CHECK ALL MENTIONED**)

- a.  Annual operating costs
  - b.  The point in time that the energy savings exceed the extra cost of the more energy efficient equipment (i.e., payback period)
  - c.  Lifecycle costs (total operating costs over the life of the equipment)
  - d.  Lifecycle savings (total energy cost savings, compared to less efficient units, over the life of the equipment)
  - e.  Utility rebates
  - f.  Manufacturer rebates
  - g.  Store rebates
  - h.  Lower utility bills
  - i.  Reliability of the equipment
  - j.  Anything else: \_\_\_\_\_
- 

20. After inspecting all the equipment shown to you, did the sales person clearly state his/her opinion of the higher efficiency models or show you any of the higher efficiency models?

- yes (go to end)
- no (go to q20a)

20a. "Do you think it is worth it to buy a higher efficiency model?"

---

*END*

**Equipment:** \_\_\_\_\_  
**Unit #1**

1. Manufacturer: \_\_\_\_\_
2. Model Number: \_\_\_\_\_
3. Price without rebate(s): \_\_\_\_\_ Rebate Available? \_\_\_ Yes (Continue) \_\_\_ No (Go to question #4)

**First Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a *mail-in* or *instant* rebate.  
 Mail-In Rebate \_\_\_\_\_ Instant Rebate \_\_\_\_\_

Is rebate for energy efficient equipment? \_\_\_ Yes \_\_\_ No \_\_\_ Can't Determine

**Second Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a mail-in or instant rebate.  
 Mail-In Rebate \_\_\_\_\_ Instant Rebate \_\_\_\_\_

Is rebate for energy efficient equipment? \_\_\_ Yes \_\_\_ No \_\_\_ Can't Determine

4. Did the sales person indicate that this unit was energy efficient at any point during your interaction (either aided or unaided by your questions)?

\_\_\_ Yes (GO TO Q5)  
 \_\_\_ No (PROCEED TO THE NEXT UNIT)

5. Which of the following did the sales person say make this unit energy efficient? (CHECK ALL THAT APPLY FOR THE APPLIANCE THAT YOU'RE SHOPPING FOR)

Check here if the sales person did not give a reason: \_\_\_\_\_

	Refrigerator	Dishwasher	Clothes washer	Room Air Conditioner
More insulation				
Uses less water				
Controls that detect clean dishes				
Compressor				
Motor				
Other (Specify: _____)				

**Equipment:** \_\_\_\_\_  
**Unit #2**

1. Manufacturer: \_\_\_\_\_
2. Model Number: \_\_\_\_\_
3. Price without rebate(s): \_\_\_\_\_ Rebate Available? \_\_\_ Yes (Continue) \_\_\_ No (Go to question #4)

**First Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a *mail-in* or *instant* rebate.  
 Mail-In Rebate \_\_\_\_\_ Instant Rebate \_\_\_\_\_

Is rebate for energy efficient equipment? \_\_\_ Yes \_\_\_ No \_\_\_ Can't Determine

**Second Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a mail-in or instant rebate.  
 Mail-In Rebate \_\_\_\_\_ Instant Rebate \_\_\_\_\_

Is rebate for energy efficient equipment? \_\_\_ Yes \_\_\_ No \_\_\_ Can't Determine

4. Did the sales person indicate that this unit was energy efficient at any point during your interaction (either aided or unaided by your questions)?  
 \_\_\_ Yes (GO TO Q5)  
 \_\_\_ No (PROCEED TO THE NEXT UNIT)

5. Which of the following did the sales person say make this unit energy efficient? (CHECK ALL THAT APPLY FOR THE APPLIANCE THAT YOU'RE SHOPPING FOR)

Check here if the sales person did not give a reason: \_\_\_\_\_

	Refrigerator	Dishwasher	Clothes washer	Room Air Conditioner
More insulation				
Uses less water				
Controls that detect clean dishes				
Compressor				
Motor				
Other (Specify: _____ )				



**Equipment:** \_\_\_\_\_  
**Unit #3**

1. Manufacturer: \_\_\_\_\_
2. Model Number: \_\_\_\_\_
3. Price without rebate(s): \_\_\_\_\_ Rebate Available? \_\_\_ Yes (Continue) \_\_\_ No (Go to question #4)

**First Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a *mail-in* or *instant* rebate.  
 Mail-In Rebate \_\_\_\_\_ Instant Rebate \_\_\_\_\_

Is rebate for energy efficient equipment? \_\_\_ Yes \_\_\_ No \_\_\_ Can't Determine

**Second Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a mail-in or instant rebate.  
 Mail-In Rebate \_\_\_\_\_ Instant Rebate \_\_\_\_\_

Is rebate for energy efficient equipment? \_\_\_ Yes \_\_\_ No \_\_\_ Can't Determine

4. Did the sales person indicate that this unit was energy efficient at any point during your interaction (either aided or unaided by your questions)?  
 \_\_\_ Yes (GO TO Q5)  
 \_\_\_ No (PROCEED TO THE NEXT UNIT)

5. Which of the following did the sales person say make this unit energy efficient? (CHECK ALL THAT APPLY FOR THE APPLIANCE THAT YOU'RE SHOPPING FOR)

Check here if the sales person did not give a reason: \_\_\_\_\_

	Refrigerator	Dishwasher	Clothes washer	Room Air Conditioner
More insulation				
Uses less water				
Controls that detect clean dishes				
Compressor				
Motor				
Other (Specify: _____)				

**Equipment:** \_\_\_\_\_  
**Unit #4**

1. Manufacturer: \_\_\_\_\_
2. Model Number: \_\_\_\_\_
3. Price without rebate(s): \_\_\_\_\_ Rebate Available? \_\_\_ Yes (Continue) \_\_\_ No (Go to question #4)

**First Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a *mail-in* or *instant* rebate.  
 Mail-In Rebate \_\_\_\_\_ Instant Rebate \_\_\_\_\_

Is rebate for energy efficient equipment? \_\_\_ Yes \_\_\_ No \_\_\_ Can't Determine

**Second Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a mail-in or instant rebate.  
 Mail-In Rebate \_\_\_\_\_ Instant Rebate \_\_\_\_\_

Is rebate for energy efficient equipment? \_\_\_ Yes \_\_\_ No \_\_\_ Can't Determine

4. Did the sales person indicate that this unit was energy efficient at any point during your interaction (either aided or unaided by your questions)?  
 \_\_\_ Yes (GO TO Q5)  
 \_\_\_ No (PROCEED TO THE NEXT UNIT)

5. Which of the following did the sales person say make this unit energy efficient? (CHECK ALL THAT APPLY FOR THE APPLIANCE THAT YOU'RE SHOPPING FOR)

Check here if the sales person did not give a reason: \_\_\_\_\_

	Refrigerator	Dishwasher	Clothes washer	Room Air Conditioner
More insulation				
Uses less water				
Controls that detect clean dishes				
Compressor				
Motor				
Other (Specify: _____ )				

Unit #5

1. Manufacturer: \_\_\_\_\_
2. Model Number: \_\_\_\_\_
3. Price without rebate(s): \_\_\_\_\_ Rebate Available?  Yes (Continue)  No (Go to question #4)

**First Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a *mail-in* or *instant* rebate.

Mail-In Rebate  Instant Rebate

Is rebate for energy efficient equipment?  Yes  No  Can't Determine

**Second Rebate:**

Amount: \_\_\_\_\_ Provider: \_\_\_\_\_

Indicate whether the rebate is a mail-in or instant rebate.

Mail-In Rebate  Instant Rebate

Is rebate for energy efficient equipment?  Yes  No  Can't Determine

4. Did the sales person indicate that this unit was energy efficient at any point during your interaction (either aided or unaided by your questions)?

Yes (GO TO Q5)  
 No (PROCEED TO THE NEXT UNIT)

5. Which of the following did the sales person say make this unit energy efficient? (CHECK ALL THAT APPLY FOR THE APPLIANCE THAT YOU'RE SHOPPING FOR)

Check here if the sales person did not give a reason: \_\_\_\_\_

	Refrigerator	Dishwasher	Clothes washer	Room Air Conditioner
More insulation				
Uses less water				
Controls that detect clean dishes				
Compressor				
Motor				
Other (Specify: _____ )				

## Mystery Shopping Evaluation Statewide Residential Lighting and Appliance Program

### Mystery Shopper Guidelines & Evaluation:

#### Lighting Product

This document contains the guidelines for completing evaluation along with the evaluation itself. The guidelines contain the sequence of activities to be carried out during the shop as well as scripts for engaging the sales people. The results of your shop are to be entered on the evaluation.

For lighting stores, you will be shopping for two of the following three pieces of lighting equipment:

1. floor lamp (also known as torchieres),
2. hard-wired lighting fixtures, and
3. light bulbs.

In your instructions from Jancyn, you will be told which two pieces of lighting equipment you will be shopping for.

Please carefully read the guidelines before reviewing the questionnaire.

#### Guidelines

##### Energy Efficiency Point of Purchase Materials

Enter the store and go to the lighting section. Observe the point of purchase advertising. Note which types of lighting equipment are advertised, the organizational sponsor (manufacturer, utility company, store, etc.), and the type of material (banner, flyer, poster, booklet, brochure, etc.). Note where the information is displayed, whether it is easy to see and read, and whether the display is attractive. Also, note whether “energy use” or “energy efficiency” is mentioned and, if so, what is said; whether the ENERGY STAR<sup>®</sup> label is displayed; whether a utility, store, or manufacturer rebate(s) is offered, and whether the rebate is for energy efficient equipment or not.

##### Shopping for Lighting

Next to each store name and address are listed the two lighting products that you will be shopping for at that store. When approached by a sales person, explain that you are shopping for the two lighting products. For example, say: “I’m shopping for a ceiling fixture (hardwired) for my bathroom and a floor lamp (also known as a torchiere) and I’d like you to show me *three* of *each*.” This means that you’ll be looking at *three* hardwired fixtures and *three* floor lamps (also known as torchieres). If he/she offers to show you more than three models of a given lighting product, say: “I only have time to see three.”

For each lighting product, the sales person will probably ask what features you are interested in. Below, we provide the following information for each of the lighting products that you might be shopping for. You should *always* describe the lighting products you are shopping for using these descriptions. If they ask you what your price range is, tell them that you are not sure, and you'd just like to examine the three models that they'd recommend.

**Floor Lamp (also known as a torchiere)**

Ask for a basic (nothing fancy) white floor lamp that directs the light upward towards the ceiling.

**Interior Hardwired Fixture**

Ask for a basic (nothing fancy and no fan) hardwired ceiling fixture for your *bathroom*.

**Light Bulb**

Ask for a 100 watt screw-in light for a table lamp. (If they don't carry this wattage, ask for a 75 watt screw-in light. If they don't carry 75 watt bulbs either, ask for 60 watts.)

As the sales person shows you the three choices for a given lighting product, note whether he/she mentions "energy use", "energy efficiency", "rebates", "lifecycle costs", etc and what he/she says regarding energy use, energy efficiency, rebates, lifecycle costs, etc.. Also, note whether the ENERGY STAR<sup>®</sup> label is on the lighting product itself or on the packaging.

After you leave the lighting section of the store, please complete the questionnaire associated with the first lighting product you are shopping for.

**Problem Situations**

There are three problems that may arise during your shopping. The first is that the store may not stock the equipment you are supposed to be shopping for. The second is that you may not be able to get the attention of the sales person. The third is that the store manager may question you about your reason for being in the store.

*Stocking Problems*

In this study, we are interested in the following lighting equipment:

1. floor lamps (also known as torchieres),
2. hard-wired fixtures, and
3. light bulbs.

You are being asked to shop for two pieces of lighting equipment. However, it is possible that the store might not stock one of the two pieces of lighting equipment that you are supposed to be shopping for. If this happens, replace the equipment they don't have with the third piece of lighting equipment that you were not originally shopping for. For example, if you were originally

shopping for a floor lamp (also known as torchiere) and a hardwired bathroom ceiling fixture but the store did not carry a bathroom ceiling fixture, then you should shop for a light bulb.

*If the store only stocks one piece of the three pieces of lighting equipment that you are shopping for, then shop only for that one piece of equipment. This still counts as a shop. If the store does not carry any of three pieces of lighting equipment that you are shopping for, then note this for the record and leave the store. This still counts as a shop.*

#### *Sales Person Attention*

In some stores, you may encounter some difficulty in getting the sales person to spend the time showing you the equipment that you are shopping for. First, you should be persistent and patient. If you still have trouble in getting their attention, you should go to the store manager and tell him or her that you need assistance.

#### *Store Manager Questions*

If the store manager or other store staff become suspicious and start asking questions about what you are doing in their store, simply tell them that you are comparison shopping. If they persist, try to continue the shop as best as you can. Please try to complete the shop. Note on the questionnaire that you encountered a problem with the store manager, how you handled it, at what point in your shop the problem occurred, and whether you were able to complete the shop.

**Mystery Shopping Evaluation  
Statewide Residential Lighting and Appliance Program**

**Mystery Shopper Questionnaire:**

**First Lighting Product**

Name of Shopper/Shopper ID: \_\_\_\_\_

**A.3 STORE NAME:**

\_\_\_\_\_

Store Address: \_\_\_\_\_

Date of Shop: \_\_\_\_\_

Time Entered Store: \_\_\_\_\_

Time Exited Store: \_\_\_\_\_

First Lighting Product Shopping For:

- Floor Lamps (Torchiere)
- Hardwired Lighting Fixtures (Indoor)
- Light Bulbs

1. Were there any **energy-efficiency-related** point-of-purchase materials on display for the equipment that you were shopping for?  
 Yes [CONTINUE]  
 No [SKIP TO QUESTION 5]
  
2. What kinds of energy-efficiency-related point-of-purchase materials were they? (CHECK ALL THAT APPLY)
  - Banners
  - Flyers/brochures
  - Posters
  - Videos
  - Stickers
  - Other (Please specify: \_\_\_\_\_)

3. Please check the types of *energy efficient* equipment that were mentioned in these materials and their organizational sponsor? (CHECK ALL THAT APPLY)

	PG&E	SCE	SDG&E	SoCal Gas	Energy Star	Manu- facturers	Other (Specify Below)
Energy Efficient Refrigerator							
Energy Efficient Dishwasher							
Energy Efficient Clotheswasher							

4. Please indicate the extent to which you agree with the following statements on a scale of 1 to 4, with a “1” meaning “strongly disagree” and a “4” meaning “strongly agree”.

- a. \_\_\_\_ The point-of-purchase materials were easy to see
- b. \_\_\_\_ The point-of-purchase materials were easy to understand
- c. \_\_\_\_ The point-of-purchase materials were nicely displayed

5. How many units did the sales person *initially* show you?

Number of Units: \_\_\_\_\_

6. Of the units that you were *initially* shown, how many were voluntarily described by the sales person as being “energy efficient”?

Number Described by Sales Person as Energy Efficient: \_\_\_\_\_

7. Of the units that you were *initially* shown, how many had the Energy Star label?

Number Units Having the Energy Star Label: \_\_\_\_\_

**RECORD HERE ANY INFORMATION VOLUNTEERED BY THE SALES PERSON REGARDING ENERGY STAR®** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



**INSTRUCTIONS: IF NUMBER OF UNITS DESCRIBED BY SALES PERSON AS BEING ENERGY EFFICIENT (IN QUESTION #6 ABOVE) EQUALS ZERO, THEN GO Q. 7a. OTHERWISE SKIP TO QUESTION #12.**

7a. “Do all three of these use the same amount of electricity?”

- Yes  
 No  
 Don't Know

7b. “Are all three equally energy efficient?”

- Yes  
 No  
 Don't Know

**IF, AFTER RAISING THE ENERGY EFFICIENCY ISSUE, HE/SHE OFFERS TO SHOW YOU MORE THAN THE THREE MODELS HE/SHE HAS ALREADY SHOWN YOU, SAY: “I REALLY ONLY HAVE TIME TO SEE TWO MORE.”**

8. After you explicitly asked the sales person about energy efficiency, how many of the units *initially shown* to you were *now* described by the sales person as being “energy efficient”?  
Number Described by Sales Person as Energy Efficient: \_\_\_\_\_

9. After you explicitly asked the sales person about energy efficiency, how many *additional units* did he/she show you?  
 0 [SKIP TO QUESTION 12]  
 1 [CONTINUE]  
 2 [CONTINUE]

10. Of the *additional units* that you were shown, how many were described by the sales person as being “energy efficient”?  
Number Described by Sales Person as Energy Efficient: \_\_\_\_\_

11. Of the *additional units* that you were shown, how many had the ENERGY STAR<sup>®</sup> label?  
Number Units Having the ENERGY STAR<sup>®</sup> Label: \_\_\_\_\_

12. Lately, I've been hearing about something called ENERGY STAR<sup>®</sup>. What is Energy Star?”  
\_\_\_\_\_

13. Please indicate the extent to which the sales person was knowledgeable about energy efficiency. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

14. Please indicate the extent to which the sales person mentioned energy efficiency as a *positive feature* in his/her sales pitch. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all” and a “4” meaning “A great deal”.

**Answer:** \_\_\_\_\_

15. Please indicate the extent to which the sales person appeared knowledgeable about the *ENERGY STAR<sup>®</sup> Program*. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

16. Please indicate the extent to which the sales person appeared knowledgeable about any *utility* rebate programs for energy efficient equipment. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

17. Please indicate the extent to which the sales person appeared knowledgeable about any *manufacturer* rebate programs for energy efficient equipment. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

18. (a) Please indicate the extent to which the sales person appeared knowledgeable about any *store* rebate programs for energy efficient equipment. Record your answer on a scale of 1 to 4, with a “1” meaning “Not at all knowledgeable” and a “4” meaning “Very knowledgeable”.

**Answer:** \_\_\_\_\_

19. If the sales person discussed energy efficiency, which of the following did he/she mention?  
(CHECK ALL MENTIONED)

- a.  Annual operating costs
- b.  The point in time that the energy savings exceed the extra cost of the more energy efficient equipment (i.e., payback period)
- c.  Lifecycle costs (total operating costs over the life of the equipment)
- d.  Lifecycle savings (total energy cost savings, compared to less efficient units, over the life of the equipment)
- e.  Utility rebates
- f.  Manufacturer rebates
- g.  Store rebates
- h.  Lower utility bills
- i.  Reliability of the equipment
- j.  Anything else: \_\_\_\_\_  
\_\_\_\_\_

20. After inspecting all the equipment shown to you, did the sales person clearly state his/her opinion of the higher efficiency models or show you any of the higher efficiency models?

Yes (GO TO END)

No (GO TO Q20a)

Q20a. "Do you think it is worth it to buy a higher efficiency model?"  
\_\_\_\_\_

**END**

**GLOSARY OF TERMS**

**Floor lamp or torchiere.** A floor lamp that directs the light direct upward towards the ceiling. A floor lamp or torchiere can typically use one of three types of lamps: a standard incandescent lamp; a halogen lamp; or a compact fluorescent bulb.

**Hard-wired fixture.** A hard-wired lighting fixture is one that is directly connected to the wiring in the house. It does not plug into a wall outlet. It can typically use one of four types of lamps: a standard incandescent lamp; a halogen lamp; a fluorescent tube, usually two to eight feet long; or a compact fluorescent bulb.

**Compact fluorescent bulb.** A compact fluorescent bulb is similar in size to a standard incandescent bulb. It screws in *or* plugs in at only one end. Compact fluorescent bulbs look different than standard incandescent bulbs. They are often made out of thin tubes of glass bent into loops.

**Screw-in compact fluorescent light bulb.** A *screw-in* compact fluorescent bulb is a small screw-in fluorescent bulb that fits in a regular light bulb socket. Compact fluorescent bulbs look different than standard incandescent bulbs. They are often made out of thin tubes of glass bent into loops.

# B

## GENERAL POPULATION CONSUMER SURVEY

### General Population Consumer Survey CA Residential Lighting & Appliance Program Study – Phase IV

Hello, my name is \_\_\_\_\_ from Quantum Consulting. We're conducting a study among California households to learn about attitudes and behaviors concerning energy conservation. Would you have a few minutes to answer some questions regarding energy conservation?

I want to assure you that this is not a sales call and that the information that you provide will be kept strictly confidential. This will only take about 15 minutes of your time.

IF SPONSORSHIP NEEDED: This study is being conducted on behalf of the California Public Utilities Commission, and your local utility company.

*[CONTINUE OR ARRANGE FOR CALLBACK]*

#### Screeners

**Before we get started, let me just ask you a few simple questions to see if you qualify for our survey:**

**S1. First, have you purchased any of the following household appliances within the past two years (that is, since January 2000):** *[READ/ROTATE LIST. CHECK ALL THAT APPLY]*

- 1 Refrigerator
- 2 Clothes washer
- 3 Dishwasher
- 4 Room air conditioner

**S1X Was this a new [APPLIANCE] or did you buy it used?** *[REPEAT FOR ALL APPLIANCES PURCHASED]*

- 1 New
- 2 Used
- 3 Don't know

**[ONLY NEW APPLIANCES COUNT FOR QUOTA]**

S1a. [ASK FOR EACH APPLIANCE PURCHASED FROM S1] **Approximately when did you make this/these purchase(s)?** [RECORD MONTH AND YEAR.]

- |   |                |       |       |       |      |
|---|----------------|-------|-------|-------|------|
| 1 | Refrigerator   | _____ | Month | _____ | Year |
| 2 | Clothes Washer | _____ | Month | _____ | Year |
| 3 | Dishwasher     | _____ | Month | _____ | Year |
| 4 | Room AC        | _____ | Month | _____ | Year |

S2. **Since January 2000, have you purchased a hard-wired lighting fixture, such as a ceiling fixture or a wall-mounted fixture?**

- 1 Yes [CONTINUE]
- 2 No [SKIP TO S3]
- 3 Don't know [SKIP TO S3]

S2a. **How many hard-wired lighting fixtures did you purchase?**

\_\_\_\_\_ # of fixtures

S2b. **When did you purchase your hard-wired lighting fixture(s)?** [RECORD MONTH AND YEAR.]

\_\_\_\_\_ Month          \_\_\_\_\_ Year

S3. **Since January 2000, have you purchased any tall floor lamps, or "torchieres"?**

- 1 Yes [CONTINUE]
- 2 No [SKIP TO S4]
- 3 Don't know [SKIP TO S4]

S3a. **How many torchieres did you purchase?**

\_\_\_\_\_ # of torchieres

S3b. **When did you purchase your torchiere(s)?** [RECORD MONTH AND YEAR.]

\_\_\_\_\_ Month          \_\_\_\_\_ Year

S4. **Since January 2000, how many light bulbs have your or someone else in your household purchased?**

\_\_\_\_\_ # of light bulbs [IF ZERO SKIP TO S5]

S4a. **When did you purchase your most recent light bulb?** [RECORD MONTH AND YEAR.]

\_\_\_\_\_ Month          \_\_\_\_\_ Year

S5. Do you own your home or rent?

- 1 Own [SKIP TO S6]
- 2 Rent
- 8 Don't know

S5a. Do you pay a utility company directly for your electricity, or is it included in your rent?

- 1 Pay electric bill directly
- 2 Included in rent [THANK AND TERMINATE]
- 8 Don't know [THANK AND TERMINATE]

S6. What is the name of your electric utility company?

- 1 PG&E
- 2 SDG&E
- 3 SCE
- 4 Other [THANK AND TERMINATE]
- 8 Don't know [THANK AND TERMINATE]

**General Awareness, Knowledge and Attitudes**

**A1 Overall, how would you rate your knowledge of the ways you could save energy in your home ?** On a scale of 1 to 10, with 1 meaning “you are not at all knowledgeable” and 10 meaning “you are extremely knowledgeable,” how knowledgeable are you about ways to save energy in your home?

<u>Not At All</u>	<u>Extremely</u>	<u>Don't</u>
<u>Knowledgeable</u>	<u>Knowledgeable</u>	<u>Know</u>
1 2 3 4 5 6 7 8	9 10	-8

**A2 On a scale of 1 to 10, with 1 meaning “Not At All” and 10 meaning “A Great Deal,” to what extent has your knowledge about how to reduce your energy consumption increased due to the energy crisis in California?**

<u>Not At All</u>	<u>A Great Deal</u>	<u>DK</u>
1 2 3 4 5 6 7 8	9 10	-8

**A3 How would you rate your household’s efforts to save energy in your home?** Again, think of it on a scale of 1 to 10, with 1 meaning “you have not done much” and 10 meaning “you have done almost everything you can” to save energy in your home.

Not Done					Done Almost					DK
<u>Much</u>					<u>Everything</u>					
1	2	3	4	5	6	7	8	9	10	-8

**A4 How much of this energy-saving activity has occurred since the beginning of this year, when the State’s energy crisis began? (READ:)**

- 1 A lot [CONTINUE]
- 2 Some [CONTINUE]
- 3 A little [CONTINUE]
- 4 None, we did everything we could BEFORE the energy crisis [SKIP TO A6]
- 8 Don’t know [SKIP TO A6]

**A5 Assuming the State’s energy situation stays the same as it is today, how likely are you to continue your efforts to conserve in the future? (READ)**

- 1 Very Likely
- 2 Somewhat Likely
- 3 Somewhat Unlikely
- 4 Very Unlikely
- 8 Don’t know

**A6 People have different opinions about energy-efficiency and the availability of natural resources such as energy. Using a 10-point scale, with 1 meaning you “Strongly Disagree” and 10 meaning you “Strongly Agree”, please tell me how much you disagree or agree with each of the following statements: [ROTATE AND RANDOMIZE STATEMENTS.]**

		Strongly					Strongly					Don’t
		<u>Disagree</u>					<u>Agree</u>					<u>Know</u>
<b>A6_3</b>	My life is too busy to worry about making energy related improvements in my home.	1	2	3	4	5	6	7	8	9	10	-8
<b>A6_4</b>	Scarce energy supplies will be a major problem in the future.	1	2	3	4	5	6	7	8	9	10	-8
<b>A6_6</b>	Instead of building new power plants, customers should use less electricity.	1	2	3	4	5	6	7	8	9	10	-8



<b>A6_7</b>	It is possible to save energy without sacrificing comfort by being energy efficient.	1	2	3	4	5	6	7	8	9	10	-8
<b>A6_8</b>	It is worth it to me for my household to use less energy in order to help preserve the environment	1	2	3	4	5	6	7	8	9	10	-8
<b>A6_10</b>	Conservation efforts helped reduce the effects of the energy crisis this summer.	1	2	3	4	5	6	7	8	9	10	-8

<b>Awareness of Energy Efficiency Behaviors and Programs</b>
--

**UNAIDED AWARENESS**

**B1** If someone had high energy bills in their home, **what are some of the energy efficiency improvements you can think of that they might make to lower their energy bills? Anything else?** *[DO NOT READ. RECORD FIRST AND ALL OTHER MENTIONS]*

*For B1\_1 to B1\_20:*

0 = Not Mentioned

1 = Mentioned

-8 = Don't Know

- B1\_1** High Efficiency Central Air Conditioning System
- B1\_2** High Efficiency Heat Pump
- B1\_3** High Efficiency Central Heating such as a Forced-Air Furnace or Boiler
- B1\_4** High Efficiency Refrigerator
- B1\_5** High Efficiency Front Loading Clothes Washer
- B1\_6** Energy Efficient Double Pane Windows
- B1\_7** Insulation of Water Heater Tank & Pipes
- B1\_8** Insulation of Ceilings, Walls, or Floors
- B1\_9** Sealing & Insulation of Duct Work
- B1\_10** Programmable Thermostat to Control Home Temperature
- B1\_11** Regular Maintenance of Central Heating or Cooling System
- B1\_12** Removal of a Second Refrigerator or Freezer
- B1\_13** Low-Flow Showerheads and Faucet Aerators
- B1\_14** Weatherstripping or Caulking Around Windows or Doors
- B1\_15** Clean Refrigerator Coils
- B1\_16** Compact Fluorescent Light Bulbs
- B1\_17** High Efficiency Fluorescent Lighting Fixtures
- B1\_18** Turn off lights when not using

- B1\_19** Turn down/up thermostats when not at home/going to bed  
**B1\_20** Other [SPECIFY: \_\_\_\_\_]

**PR1.** The governor of California has been promoting an energy conservation and efficiency program called the “20/20 Rebate Program.” **Have you ever heard of the 20/20 Rebate Program?**

- 1 Yes [CONTINUE]  
 2 No [SKIP TO ES1]  
 -8 Don’t know [SKIP TO ES1]

**PR2.** **Did you attempt to reduce your electricity bill by 20% as part of the 20/20 program?**

- 1 Yes [SKIP TO PR4]  
 2 No [CONTINUE]  
 -8 Don’t know [SKIP TO ES1]

**PR3.** **Why not?** [DO NOT READ. CHECK ALL THAT APPLY]

- 1 I already did all that I can do, already made energy-saving improvements before the program  
 2 My energy use is low to begin with, not much I can do regardless of program  
 3 Not worth it, 20% not a big enough incentive to make any improvements  
 4 Not convinced there is an energy crisis  
 5 Other [SPECIFY: \_\_\_\_\_]  
 -8 Don’t know

[SKIP TO ES1]

**PR4.** **Do you think you succeeded in saving 20%?**

- 1 Yes  
 2 No [SKIP TO PR5A]  
 -8 Don’t know [SKIP TO ES1]

**PR5.** **What types of energy-reducing activities helped you to reduce your bill by 20%?**  
 [DO NOT READ. CHECK ALL THAT APPLY]

- PR5\_1** High Efficiency Central Air Conditioning System  
**PR5\_2** High Efficiency Heat Pump  
**PR5\_3** High Efficiency Central Heating such as a Forced-Air Furnace or Boiler  
**PR5\_4** High Efficiency Refrigerator  
**PR5\_5** High Efficiency Front Loading Clothes Washer  
**PR5\_6** Energy Efficient Double Pane Windows

- PR5\_7 Insulation of Water Heater Tank & Pipes
- PR5\_8 Insulation of Ceilings, Walls, or Floors
- PR5\_9 Sealing & Insulation of Duct Work
- PR5\_10 Programmable Thermostat to Control Home Temperature
- PR5\_11 Regular Maintenance of Central Heating or Cooling System
- PR5\_12 Removal of a Second Refrigerator or Freezer
- PR5\_13 Low-Flow Showerheads and Faucet Aerators
- PR5\_14 Weatherstripping or Caulking Around Windows or Doors
- PR5\_15 Clean Refrigerator Coils
- PR5\_16 Compact Fluorescent Light Bulbs
- PR5\_17 High Efficiency Fluorescent Lighting Fixtures
- PR5\_18 Turn off lights when not using
- PR5\_19 Turn down/up thermostats when not at home/going to bed
- PR5\_20 Other [SPECIFY: \_\_\_\_\_]

[SKIP TO ES1]

**PR5A. Why not?** [DO NOT READ. CHECK ALL THAT APPLY]

- 1 I already did all that I can do, already made energy-saving improvements before the program
- 2 My energy use is low to begin with, not much I can do regardless of program
- 3 Not worth it, 20% not a big enough incentive to make any improvements
- 4 Not convinced there is an energy crisis
- 5 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know

**ES1 Have you ever seen or heard of ENERGY STAR?**

- 1 Yes
- 2 No [SKIP TO ES2]
- 8 Don't know [SKIP TO ES2]

**ES1a What does it mean?** [DO NOT READ. CHECK ALL THAT APPLY]

- 1 Saves energy/uses less energy
- 2 Less harmful to the environment, less pollution
- 3 Costs less to operate, saves money on electric bill
- 4 Rebate available if you purchase Energy Star appliance
- 5 It's a government standard for energy efficient equipment
- 6 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know

[SKIP TO ES3]

**ES2** ENERGY STAR is a label or symbol applied to or associated with appliances and products. It's usually blue and green and has the word "Energy" and a picture of a star on it. It's NOT the yellow Energy Guide sticker you find on appliances such as refrigerators and water heaters. **Hearing this description, now do you recall ever seeing or hearing about ENERGY STAR?**

- 1 Yes
- 2 No [SKIP TO PR6]
- 8 Don't know [SKIP TO PR6]

**ES2a** What does ENERGY STAR mean? *[DO NOT READ. CHECK ALL THAT APPLY]*

- 1 Saves energy/uses less energy
- 2 Less harmful to the environment, less pollution
- 3 Costs less to operate, saves money on electric bill
- 4 Rebate available if you purchase Energy Star appliance
- 5 It's a government standard for energy efficient equipment
- 6 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know

**ES4** On what type of products or product packing have you seen the ENERGY STAR label recently? *[DO NOT READ. CHECK ALL THAT APPLY]*

- 1 Central air conditioner
- 2 Furnace or boiler
- 3 Heat pump
- 4 Thermostat
- 5 Room air conditioner
- 6 Computer or monitor
- 7 Computer printer
- 8 Copying machine
- 9 Fax machine
- 10 Scanner
- 11 Dishwasher
- 12 Refrigerator
- 13 Lighting fixture
- 14 Clothes washer
- 15 Compact fluorescent light bulb
- 16 Microwave oven
- 17 Television
- 18 VCR
- 19 Audio/stereo product

- 20 Window
- 21 Door
- 22 Skylight
- 23 Insulation
- 24 Roofing material
- 25 Newly built home
- 26 Other [SPECIFY: \_\_\_\_\_]
- 99 Don't know

**PR6. Are you aware of any energy conservation or energy efficiency programs offered by [READ UTILITY NAME FROM S6]?**

- 1 Yes
- 2 No [SKIP TO QA1]
- 8 Don't know [SKIP TO QA1]

**PR7. What programs can you recall? [IF PROGRAM NAMES GIVEN, RECORD VERBATIM. OTHERWISE CODE RESPONSES BY PROGRAM TYPE. DO NOT READ. CHECK ALL THAT APPLY]**

- 1 Rebates [SPECIFY APPLIANCE/PRODUCT: \_\_\_\_\_]
- 2 Product give-away/turn-in event (CFLs, torchieres)
- 3 2<sup>nd</sup> refrigerator turn-in/recycling
- 4 Home repair/retrofit (insulation, windows, etc.)
- 5 Energy efficient mortgages
- 6 Energy survey/audit delivered on-site
- 7 Energy survey/audit delivered through the mail
- 8 Energy survey/audit delivered over the telephone
- 9 Energy survey/audit delivered via the internet
- 10 Other [SPECIFY: \_\_\_\_\_]
- 11 SPECIFIC PROGRAM NAMES: \_\_\_\_\_
- 99 Don't know

**PR8. Have you participated in any of these programs within the past year and a half?**

- 1 Yes [SKIP TO PR10]
- 2 No
- 8 Don't know [SKIP TO QA1]

**PR9. Why not? [DO NOT READ. CHECK ALL THAT APPLY]**

- 1 Inconvenient to attend event
- 2 Not enough time to fill out the rebate application
- 3 Not worth the time to fill out the rebate form for the amount of \$ available

- 4 Rebate program ended
- 5 Don't need equipment/appliance program is promoting
- 6 Don't own equipment/appliance program is promoting
- 7 Don't own home
- 8 Other [SPECIFY: \_\_\_\_\_]
- 99 Don't know

[SKIP TO QA1]

**PR10. Which programs have you participated in?** [RELATE BACK TO RESPONSES FROM PR7]

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_

<b>Appliance Purchases Since January 2000</b>
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**[ASK THIS SECTION ONLY IF APPLIANCES MENTIONED IN S1. OTHERWISE SKIP TO QUESTION QL1.]**

**QA1** You mentioned earlier that you purchased a new [READ APPLIANCE TYPE FROM S1]. **In general, what were the most important factors you considered when shopping for your new [APPLIANCE]? What else was important to you?** [DO NOT READ. RECORD FIRST MENTION AND ALL OTHER MENTIONS]

- QA1\_1** Brand
- QA1\_2** Features and appearance (e.g., through the door ice, humidity controls, color, size, etc.)
- QA1\_3** Purchase price
- QA1\_4** Energy efficiency
- QA1\_5** Annual operating cost for electricity
- QA1\_6** Quality
- QA1\_7** It qualified for the rebate program
- QA1\_77** Other: \_\_\_\_\_
- QA1\_88** Refused
- QA1\_99** Don't Know

**QA2** I'm going to read a short list of factors and I want you to tell me how important each was to you when you were shopping for your appliance. On a scale of 1 to 10, where 1 is "not at all important" and 10 is "extremely important," how important was ... when choosing between different [APPLIANCE]s? models? [READ/ROTATE LIST]

For QA2\_1 to QA2\_5

Not at all					Extremely					Don't	
Important					Important					Know	Refused
1	2	3	4	5	6	7	8	9	10	99	88

- QA2\_1 Brand  
 QA2\_2 Features and appearance  
 QA2\_3 Purchase price  
 QA2\_4 Energy efficiency  
 QA2\_5 Annual operating cost for electricity

**QA4** When you were shopping for your new [APPLIANCE], did you notice any advertising or information materials related to energy efficient [APPLIANCE]s displayed in the store?

- 1 Yes [CONTINUE]  
 2 No [SKIP TO QA8]  
 -9 Don't know [SKIP TO QA8]  
 -8 Refused [SKIP TO QA8]

**QA8** When shopping for your new [APPLIANCE], did you talk with a sales person?

- 1 Yes [CONTINUE]  
 2 No [SKIP TO Q13]  
 99 Don't know [SKIP TO Q13]  
 88 Refused [SKIP TO Q13]

**QA9** Did the sales person mention energy efficiency to you?

- 1 Yes  
 2 No  
 99 Don't know  
 88 Refused

**QA10** Did you ask the sales person about energy efficiency?

- 1 Yes  
 2 No  
 99 Don't know  
 88 Refused

**INSTRUCTIONS: IF YES ON QA9 OR QA10 THEN ASK QA11; ELSE SKIP TO Q13**

**QA11** On a scale of 1 to 10, where 1 is “Very Little” and 10 is “A Great Deal,” **how much did the sales person, who sold you your [APPLIANCE], emphasize energy efficiency?**

Very Little								A Great Deal		Don't Know		Refused	
1	2	3	4	5	6	7	8	9	10	99	88		

**QA13** Do you consider the new [APPLIANCE] you purchased to be more energy efficient than other [APPLIANCE]s you could have purchased?

- 1 Yes [CONTINUE]
- 2 No [SKIP TO QA19]
- 99 Don't know [SKIP TO QA21]
- 88 Refused [SKIP TO QA21]

**Did Purchase an Energy Efficient Appliance**

**QA14** How did you know it was energy efficient? [DO NOT READ. CHECK ALL THAT APPLY]

- QA14\_1 First mention
- QA14\_2 Second mention
- QA14\_3 Third mention
- QA14\_4 Fourth mention

- 1 Point of purchase materials, in-store advertising
- 2 Friends or family
- 3 Non-utility advertising on television, on the Internet, in newspapers, in magazines
- 4 Sales person
- 5 Consumer reports
- 6 Department of Energy label (also known as “Energy Guide” label)
- 7 Energy Star Label
- 8 Utility advertising (direct mail/bill inserts)
- 9 Utility advertising on television, on the Internet, in newspapers, in magazines
- 77 Other (Specify: \_\_\_\_\_)
- 99 Don't know
- 88 Refused

**QA15** What were your primary reasons for purchasing an energy efficient [APPLIANCE]? Any others? [DO NOT READ. CHECK ALL THAT APPLY]

- QA15\_1 First mention
- QA15\_2 Second mention
- QA15\_3 Third mention
- QA15\_4 Fourth mention



- 1 Extra cost for more efficient unit was minimal
- 2 Higher efficiency came along with unit I wanted anyway for other reasons (i.e., Had no choice, high efficiency unit was the only option for model I preferred for other reasons)
- 3 Energy savings worth the extra up-front cost, acceptable payback
- 4 Cost savings worth the extra up-front cost, acceptable payback
- 5 It is the “right thing to do” (environmental/resource conservation benefits)
- 6 Other benefits make purchase worthwhile (specify other benefits in “other category” below)
- 7 Product works better/is higher quality
- 8 I like to have new, high-tech appliances
- 9 Salesperson convinced me it was the best choice
- 10 To get a rebate
- 11 Friends/family suggested I purchase high-efficiency unit
- 12 To help in the energy crisis/civic duty
- 13 Because I want to avoid blackouts
- 14 To try to meet the 20% reduction offered in the Governor’s 20/20 program
- 77 Other (specify)\_\_\_\_\_
- 99 Don’t know

[ASK IF ADVERTISING/MATERIALS MENTIONED IN QA4; OTHERWISE SKIP TO QA15B]

**QA15A** You mentioned earlier that there were energy efficiency related advertisements and materials displayed in the store where you purchased your new [APPLIANCE]. On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential were the advertisements and materials in your decision to purchase an energy efficient [APPLIANCE]?**

Not at all Influential										Extremely Influential		Don't Know	Refused
1	2	3	4	5	6	7	8	9	10	-8	-9		

[ASK IF ENERGY EFFICIENCY MENTIONED IN QA9 OR QA10; OTHERWISE SKIP TO QA16]

**QA15B** You [also] mentioned earlier that you and the salesperson who sold you your new [APPLIANCE] discussed energy efficiency. On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential was this discussion in your decision to purchase an energy efficient [APPLIANCE]?**

Not at all Influential										Extremely Influential		Don't Know	Refused
1	2	3	4	5	6	7	8	9	10	-8	-9		

**INSTRUCTIONS: IF RESPONDENT MENTIONS *ENERGY STAR* IN QA14 THEN SKIP TO QA17; OTHERWISE CONTINUE.**

**QA16 Was there an Energy Star label on the new [APPLIANCE] you purchased?**

- |    |            |                |
|----|------------|----------------|
| 1  | Yes        | [CONTINUE]     |
| 2  | No         | [SKIP TO QA20] |
| 99 | Don't know | [SKIP TO QA20] |
| 88 | Refused    | [SKIP TO QA20] |

**QA17 On a scale of 1 to 10, where 1 is "Very Influential" and 10 is "Not At All Influential", how influential was the Energy Star label in your decision to purchase the high efficiency [APPLIANCE]?**

Not at all								Very	Don't		
Influential								Influential	Know	Refused	
1	2	3	4	5	6	7	8	9	10	99	88

**SKIP TO QA20**

**Didn't Purchase an Energy Efficient Appliance**

**QA19 What were the main reasons that you did not purchase an energy efficient [APPLIANCE]? [DO NOT READ. CHECK ALL THAT APPLY]**

- |               |                |
|---------------|----------------|
| <b>QA19_1</b> | First mention  |
| <b>QA19_2</b> | Second mention |
| <b>QA19_3</b> | Third mention  |
| <b>QA19_4</b> | Fourth mention |

- 1 Costs too much to purchase
- 2 Won't save enough energy to make it worthwhile
- 3 Can't find the *type/style/size* I want with high efficiency features
- 4 Can't find the *brand* I want with high efficiency features
- 5 Don't like to try new high-tech appliances until they have been on the market for awhile
- 6 Moving/selling my home, thus won't accrue operating savings
- 7 Don't know the product well enough to decide
- 8 Would have to compare costs/brands
- 9 Other priorities more important,
- 10 Standard product works better/is higher quality
- 11 Uncertain that savings will occur
- 12 Didn't have enough information to make an informed decision
- 13 Didn't trust salesperson or sales pitch promoting high efficiency unit

- 14 Did not think about energy efficiency when choosing
- 15 Was not aware that there was such a thing as an *energy efficient* unit
- 16 The utility rebate program ended/no more rebates available
- 77 Other:\_\_\_\_\_
- 99 Don't know

**SKIP TO QA21****QA20 When you were shopping for your new [APPLIANCE], did you experience any difficulties or have any concerns or worries??**

- 1 Yes [CONTINUE]
- 2 No [SKIP TO QA21]
- 99 Don't know [SKIP TO QA21]
- 88 Refused [SKIP TO QA21]

**QA20A What difficulties or concerns did you have? [DO NOT READ. CHECK ALL THAT APPLY]**

- QA20\_1** First mention
- QA20\_2** Second mention
- QA20\_3** Third mention
- QA20\_4** Fourth mention

- 1 I was concerned that the energy efficient unit was more expensive than the standard unit
- 2 I was concerned that the energy efficient unit would not save enough energy to make it worthwhile
- 3 It was hard to find the *type/style/size* I want with high efficiency features
- 4 It was hard to find the *brand* I wanted with high efficiency features
- 5 I was concerned because I normally don't like to try new high-tech appliances until they have been on the market for awhile
- 6 I was concerned that I didn't know the product well enough to decide
- 7 I had to spend a lot of time comparing costs/brands
- 8 I was worried that the energy efficient unit would not work as well as the standard unit
- 9 There were other competing priorities
- 10 I was uncertain that the savings would occur
- 11 I was worried that I did not have enough information to make an informed decision
- 12 I was not fully confident that I could trust the sales person or the sales pitch promoting the high efficiency unit
- 13 Other priorities more important
- 14 Encountered no difficulties
- 77 Other:\_\_\_\_\_
- 99 Don't know

**QA21 Did you receive a rebate or any discounts off the initial price to assist in purchasing your [APPLIANCE]?**

- 1 Rebate [CONTINUE]
- 2 Reduced price, discounted price [CONTINUE]
- 3 No, no rebate or discount [SKIP TO QA26]
- 8 Don't know [SKIP TO QA26]
- 9 Refused [SKIP TO QA26]

**QA22 Who was offering the rebate/discount? Anyone else? [PROMPT IF NECESSARY WITH: "Was it offered by your local utility, the manufacturer, or the retailer?" CHECK ALL THAT APPLY]**

**QA22\_1 Local electric/gas utility**

**QA22\_1A** What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused

**QA22\_2 The retail store where the [APPLIANCE] was purchased**

**QA22\_2A** What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused

**QA22\_3 Manufacturer**

**QA22\_3A** What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused

**QA22\_77 Other (Please specify): \_\_\_\_\_**

**QA22\_77** What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused

**INSTRUCTIONS: IF "LOCAL ELECTRIC/GAS UTILITY" MENTIONED IN QA22, CONTINUE; OTHERWISE SKIP QA25.**

**QA23 [IF MORE THAN ONE REBATE/DISCOUNT MENTIONED, READ "You say you got a rebate/discount from your local utility."] On a scale of 1 to 10, where 1 is "Not at all likely" and 10 is "Extremely likely," how likely is it that you would have purchased the same exact [APPLIANCE] had you not received a rebate/discount from your utility?**

Not at all										Extremely		Don't		
<u>Likely</u>										<u>Likely</u>		<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10			-8	-9	

[IF LOCAL UTILITY REBATE/DISCOUNT MENTIONED AND OTHER REBATES/DISCOUNTS MENTIONED, ASK QA24; OTHERWISE SKIP TO QA25]

**QA24** You also mentioned you received another/other rebate(s)/discount(s). **Overall, how likely would you have been to purchase the same exact [APPLIANCE] had it not been for all of the rebates/discount(s) combined?** Again, on a scale of 1 to 10, where 1 is “Not at all likely,” and 10 is “Extremely likely.”

Not at all										Extremely	Don't	
<u>Likely</u>										<u>Likely</u>	<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9	

[IF LOCAL UTILITY REBATE/DISCOUNT NOT MENTIONED BUT OTHER REBATES/DISCOUNTS MENTIONED, ASK QA25; OTHERWISE SKIP TO QA26]

**QA25** On a scale of 1 to 10, where 1 is “Not at all likely” and 10 is “Extremely likely,” **how likely is it that you would have purchased the same exact [APPLIANCE] had you not received a rebate(s)/discount(s)?**

Not at all										Extremely	Don't	
<u>Likely</u>										<u>Likely</u>	<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9	

**QA26** **Approximately how old was your old [APPLIANCE] before you replaced it with this new one?**

_____	Years
99	Don't know
88	Refused

**QA27** **Was your old [APPLIANCE] still working when you bought your new one, or had it already broken down?**

1	Old appliance was still working	
2	Old appliance had already broken	[SKIP TO QL31]
99	Don't know	[SKIP TO QL31]
88	Refused	[SKIP TO QL31]

[ASK ONLY IF REBATE/DISCOUNT MENTIONED IN QA21; OTHERWISE SKIP TO QA29]

QA28 On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential was/were the rebate(s)/discount(s) you received in getting you to replace your old [APPLIANCE] before it actually broke down?**

Not at all							Extremely		Don't		
<u>Influential</u>							<u>Influential</u>		<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9

QA29 **Did the energy crisis influence you to replace your [APPLIANCE] before it stopped working?**

- 1 Yes
- 2 No [SKIP TO QL31]
- 99 Don't know [SKIP TO QL31]

QA30 On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential was the energy crisis on your decision to replace your old [APPLIANCE] before it actually broke down?**

Not at all							Extremely		Don't		
<u>Influential</u>							<u>Influential</u>		<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9

[ASK IF ENERGY EFFICIENT APPLIANCE PURCHASED FROM QA13; OTHERWISE SKIP TO QL1]

QA31 **Overall, how influential was the energy crisis on your decision to purchase a [APPLIANCE] that was more energy efficient than other [APPLIANCE]s you could have purchased.** Again, please answer on a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential.”

Not at all							Extremely		Don't		
<u>Influential</u>							<u>Influential</u>		<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9

<b>Lighting Product Purchases Since January 2000</b>
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**[INSTRUCTIONS: ASK ONLY IF LIGHTING PRODUCTS PURCHASED FROM S2, S3 OR S4. OTHERWISE SKIP TO QL13.]**

**QL1** You mentioned that you purchased a/several [LIGHTING PRODUCT(S)] in the past year and a half. **In general, what were the most important factors you considered when shopping for your new [LIGHTING PRODUCT(S)]? What else was important to you?** *[DO NOT READ. RECORD FIRST MENTION AND ALL OTHER MENTIONS]*

- QL1\_1 Brand
- QL1\_2 Features/appearance (fixture/torchiere size, style, etc.)
- QL1\_3 Purchase price
- QL1\_4 Bulb type
- QL1\_5 Bulb wattage
- QL1\_6 Annual operating cost for electricity
- QL1\_7 Light levels/quality/brightness
- QL1\_8 It qualified for the rebate program
- QL1\_77 Other: \_\_\_\_\_
- QL1\_88 Refused
- QL1\_99 Don't Know

**QL2** I'm going to read a short list of factors and I want you to tell me how important each was to you when you were shopping for your [LIGHTING PRODUCT]. On a scale of 1 to 10, where 1 is "not at all important" and 10 is "extremely important," how important was ... when choosing between different [LIGHTING PRODUCT]s? *[READ/ROTATE LIST]*

For QL2\_1 to QL2\_5

Not at all Important									Extremely Important	Don't Know	Refused
1	2	3	4	5	6	7	8	9	10	99	88

**IF LIGHT BULB PURCHASED, READ:**

- QL2\_1 Brand
- QL2\_2 Bulb wattage
- QL2\_3 Purchase price
- QL2\_4 Bulb type (such as incandescent, halogen, fluorescent, etc.)
- QL2\_5 Annual operating cost for electricity

**IF FIXTURE/TORCHIERE PURCHASED, READ:**

- QL2\_1 Brand
- QL2\_2 Fixture style or appearance

- QL2\_3 Purchase price
- QL2\_4 Bulb type (such as incandescent, halogen, fluorescent, etc.)
- QL2\_5 Annual operating cost for electricity

**QL4** When you were shopping for your [LIGHTING TECHNOLOGY], did you notice any advertising or information materials related to energy efficient lighting displayed in the store?

- 1 Yes [CONTINUE]
- 2 No [SKIP TO QL8]
- 8 Don't know [SKIP TO QL8]
- 9 Refused [SKIP TO QL8]

**QL8** When shopping for your [LIGHTING TECHNOLOGY], did you talk with a sales person?

- 1 Yes [CONTINUE]
- 2 No [SKIP TO QL13]
- 8 Don't know [SKIP TO QL13]
- 9 Refused [SKIP TO QL13]

**QL9** Did the sales person mention energy efficiency to you?

- 1 Yes
- 2 No -8 Don't know -9 Refused

**QL10** Did you ask the sales person about energy efficiency?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

[IF YES ON QL9 OR QL10, ASK QL11; ELSE SKIP TO QL13]

**QL11** On a scale of 1 to 10, where 1 is "Very Little" and 10 is "A Great Deal," how much did the sales person who sold you your [LIGHTING TECHNOLOGY] emphasize energy efficiency?

Very Little									A Great Deal	Don't Know	Refused
1	2	3	4	5	6	7	8	9	10	88	99



CFL Torchiere Awareness and Purchases *[ASK ALL RESPONDENTS]*

**QL14** Torchieres can use a number of different light bulb types – most use halogen bulbs, while others can use compact fluorescent bulbs or incandescent bulbs. **Before we talked today, had you ever heard of torchieres or floor lamps that ONLY use compact fluorescent light bulbs?**

- 1 Yes
- 2 No [SKIP TO QL15]
- 8 Don't Know [SKIP TO QL15]

**QL14A\_X** When did you first hear of torchieres or floor lamps that ONLY use compact fluorescent light bulbs? Was it: *[READ]*

- 1 Within the past six months
- 2 Within the past two years
- 3 Over two years ago
- 8 Don't Know [DON'T READ]
- 9 Refused [DON'T READ]

**QL14A** How did you first become aware of compact fluorescent torchieres? Any others? *[DO NOT READ. CHECK ALL THAT APPLY]*

**QL14A\_1** First mention

**QL14A\_2** Second mention

**QL14A\_3** Third mention

**QL14A\_4** Fourth mention

- 1 In store point of purchase materials
- 2 Friends or family
- 3 Advertising on television, on the Internet, in newspapers, in magazines
- 4 Sales person
- 5 Consumer reports
- 6 Department of Energy label
- 7 Energy Star Label
- 8 Don't know
- 9 Refused

*[ASK ONLY IF TORCHIERES PURCHASED FROM S3; OTHERWISE SKIP TO L15]*

**QL14B** Have you ever purchased or been given torchieres or floor lamps that ONLY use compact fluorescent bulbs?

- 1 Purchased
- 2 Received/given

- 3 Purchased and received/given
- 4 No, neither purchased nor received/given [SKIP TO QL14R]
- 8 Don't Know [SKIP TO QL14R]

**QL14C In what year did you purchase or receive your first compact fluorescent torchiere? [IF 2001, ALSO RECORD MONTH]**

\_\_\_\_ Year  
 \_\_\_\_ Month [RECORD FOR YEAR 2001 ONLY]

**QL14D Have you purchased or received any compact fluorescent torchieres since then?**

- 1 Purchased
- 2 Received/given
- 3 Purchased and received/given
- 4 No, neither purchased nor received/given [SKIP TO QL14F]
- 8 Don't Know [SKIP TO QL14F]

**QL14E When? [IF MORE THAN ONE, ASK FOR MOST RECENT. IF 2001, ALSO RECORD MONTH]**

\_\_\_\_ Year  
 \_\_\_\_ Month [RECORD FOR YEAR 2001 ONLY]

*[ASK IF CFL TORCHIERES PURCHASED FROM QL14B; OTHERWISE SKIP TO QL14G]*

**QL14F What were your primary reasons for purchasing a compact fluorescent torchiere? Any other reasons? [DO NOT READ. CHECK ALL THAT APPLY]**

- QL14F\_1** First mention
- QL14F\_2** Second mention
- QL14F\_3** Third mention
- QL14F\_4** Fourth mention

- 1 Extra cost for compact fluorescent torchiere was minimal
- 3 Energy savings worth the extra up-front cost, acceptable payback
- 4 Cost savings worth the extra up-front cost, acceptable payback
- 5 It is the "right thing to do" (environmental/resource conservation benefits)
- 6 Other benefits make purchase worthwhile (specify other benefits in # 12 below)
- 7 Product works better/is higher quality
- 8 I like to have new, high-tech products
- 9 Salesperson convinced me it was the best choice
- 10 To get a rebate
- 11 Friends/family suggested I purchase compact fluorescent

- 12 Other (specify) \_\_\_\_\_
- 8 Don't know
- 9 Refused

[ASK IF ADVERTISING/MATERIALS MENTIONED IN QL4; OTHERWISE SKIP TO QL14F\_6]

**QA14F\_5** You mentioned earlier that there were energy efficiency related advertisements and materials displayed in the store where you shopped for [LIGHTING TECHNOLOGY]. On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential were the advertisements and materials in your decision to purchase compact fluorescent torchieres?**

Not at all					Extremely					Don't		
<u>Influential</u>					<u>Influential</u>					<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9	

[ASK IF ENERGY EFFICIENCY MENTIONED IN QL9 OR QL10; OTHERWISE SKIP TO QL14G]

**QA14F\_6** You [also] mentioned earlier that you and the salesperson discussed energy efficiency when you were shopping for [LIGHTING TECHNOLOGY]. On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential was this discussion in your decision to purchase compact fluorescent torchieres?**

Not at all					Extremely					Don't		
<u>Influential</u>					<u>Influential</u>					<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9	

*[IF RESPONDENT MENTIONS ENERGY STAR IN QL14A THEN SKIP TO QL14H; OTHERWISE CONTINUE]*

**QL14G** Was there an ENERGY STAR label on the compact fluorescent torchiere or the product packaging?

- 1 Yes [CONTINUE]
- 2 No [SKIP TO QL14J]
- 8 Don't know [SKIP TO QL14J]
- 9 Refused [SKIP TO QL14J]

*[ASK IF CFL TORCHIERES PURCHASED FROM QL14B; OTHERWISE SKIP TO QL14J]*

**QL14H** On a scale of 1 to 10, where 1 is “Very Influential” and 10 is “Not At All Influential”, how influential was the ENERGY STAR label in your decision to purchase a compact fluorescent torchiere?

Not at all					Very					Don't	
Influential					Influential					Know	Refused
1	2	3	4	5	6	7	8	9	10	88	99

**QL14J** In general, how satisfied have you been with the compact fluorescent torchieres you have purchased/received? Have you been... *[READ]*

- 1 Very satisfied [SKIP TO QL14K]
- 2 Somewhat satisfied
- 3 Somewhat dissatisfied
- 4 Very dissatisfied
- 8 Don't know [DON'T READ. SKIP TO QL14K]
- 9 Refused [DON'T READ. SKIP TO QL14K]

**QL14J\_1** In what ways were you dissatisfied?

---

*[QUESTION QL14K INTENTIONALLY BLANK]*

*[ASK IF CFL TORCHIERES PURCHASED FROM QL14B; OTHERWISE SKIP TO QL14Q]*

**QL14L** Did you experience any difficulties or have any concerns or worries when purchasing your compact fluorescent torchiere(s)?

- 1 Yes
- 2 No [SKIP TO QL14N]
- 8 Don't know [SKIP TO QL14N]

**QL14M** What difficulties or concerns did you have? Any others? *[DO NOT READ. CHECK ALL THAT APPLY]*

- QL14M\_1** First mention
- QL14M\_2** Second mention
- QL14M\_3** Third mention
- QL14M\_4** Fourth mention

- 1 I was concerned that CF torchieres are more expensive than other torchieres
- 2 I was concerned that CF torchieres would not save enough energy to make them worthwhile

- 3 It was hard to find the *type/style/size* torchiere I wanted with CFLs
- 4 It was hard to find the *brand* I wanted with CFLs
- 5 I was concerned because I normally don't like to try new high-tech products until they have been on the market for awhile
- 6 I was concerned that I didn't know the product well enough to decide
- 7 I had to spend a lot of time comparing costs/brands
- 8 I was worried that CFLs would not work as well as other bulbs
- 9 I was worried that I did not have enough information to make an informed decision
- 10 I was not fully confident that I could trust the sales person or the sales pitch promoting CF torchieres
- 11 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

**QL14N Did you receive a rebate or reduced price for your compact fluorescent torchiere?**

- |  |                 |
|--|-----------------|
| 1 Rebate   | [CONTINUE]      |
| 2 Reduced price, discounted price                | [CONTINUE ]     |
| 3 Neither (no rebate or reduced/discounted price | [SKIP TO QL14Q] |
| -8 Don't know                                    | [SKIP TO QL14Q] |
| -9 Refused                                       | [SKIP TO QL14Q] |

**QL14O** Who was offering the rebate/discount? Anyone else? [*PROMPT IF NECESSARY WITH: "Was it offered by your local utility, the manufacturer, or the retailer?" CHECK ALL THAT APPLY*]

- QL14O\_1 Local electric/gas utility
- QL14O\_1A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused
- QL14O\_2 The retail store where the CF torchiere was purchased
- QL14O\_2A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused
- QL14O\_3 Manufacturer
- QL14O\_3A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused
- QL14O\_4 Other [SPECIFY: \_\_\_\_\_]
- QL14O\_4A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused

[IF "LOCAL ELECTRIC/GAS UTILITY" MENTIONED IN QL14O, CONTINUE; OTHERWISE SKIP TO QL14P\_2]

**QL14P** [IF MORE THAN ONE REBATE/DISCOUNT MENTIONED IN QL14O, READ: “You mentioned that you received a rebate/discount from your local utility toward the purchase of a compact fluorescent torchiere.”] On a scale of 1 to 10, where 1 is “Not at all likely” and 10 is “Extremely likely,” **how likely is it that you would have purchased a compact fluorescent torchiere had you not received a rebate/discount from your utility?**

Not at all								Extremely		Don't	
<u>Likely</u>								<u>Likely</u>		<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9

[IF LOCAL UTILITY REBATE/DISCOUNT MENTIONED AND OTHER REBATES/DISCOUNTS MENTIONED, ASK QL14P\_1; OTHERWISE SKIP TO QL14P\_2]

**QL14P\_1** You also mentioned you received another/other rebate(s)/discounts. **Overall, how likely would you have been to purchase a compact fluorescent torchiere had it not been for all of the rebates/discounts combined?** Again, on a scale of 1 to 10, where 1 is “Not at all likely,” and 10 is “Extremely likely.”

Not at all								Extremely		Don't	
<u>Likely</u>								<u>Likely</u>		<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9

[IF LOCAL UTILITY REBATE/DISCOUNT NOT MENTIONED BUT OTHER REBATES/DISCOUNTS MENTIONED, ASK QL14P\_2; OTHERWISE SKIP TO QL14Q]

**QL14P\_2** On a scale of 1 to 10, where 1 is “Not at all likely” and 10 is “Extremely likely,” **how likely would you have been to purchase a compact fluorescent torchiere had you not received a rebate(s)/discount(s)?**

Not at all								Extremely		Don't	
<u>Likely</u>								<u>Likely</u>		<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9

**QL14Q** **Overall, how influential was the energy crisis in your decision to purchase a compact fluorescent torchiere?** Please answer on a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential.”

Not at all								Very		Don't	
<u>Influential</u>								<u>Influential</u>		<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	88	99

**QL14R** Without rebates or discounts, compact fluorescent torchieres typically cost twice as much as other torchieres. However, the compact fluorescent bulbs use less electricity

and last longer than standard incandescent or halogen lamps. Given this, **how likely are you to purchase compact fluorescent torchieres at their regular price in the future? Please answer on a scale of 1 to 10, where 1 is “Not at all likely” and 10 is “Extremely likely.”**

Not at all										Extremely	Don't	
<u>Likely</u>										<u>Likely</u>	<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9	

[ASK IF QL14R < 7]

**QL14R\_1 Why wouldn't you be very likely?**

- 1 Costs too much to purchase
- 2 Won't save enough energy to make it worthwhile
- 3 Couldn't find the *type/style/size* torchiere I wanted with CFLs
- 4 Couldn't find the *brand* I wanted with CFLs
- 5 Don't like try new high-tech products until they have been on the market for awhile
- 6 Didn't know the product well enough to decide
- 7 Would've had to spend a lot of time comparing costs/brands
- 8 Worried that CFLs would not work as well as other bulbs
- 9 Didn't have enough information to make an informed decision
- 10 Not fully confident that I could trust the sales person or the sales pitch promoting CF torchieres
- 11 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

**CFL Hard-Wired Fixture Awareness and Purchase** *[ASK ALL RESPONDENTS]*

**QL15** Hard-wired lighting fixtures typically use a variety of different types of lights bulbs, including standard incandescent lamps, halogen lamps, long fluorescent tubes, or compact fluorescent lamps. **Before we talked today, had you ever heard of energy efficient hard-wired lighting fixtures that use ONLY compact fluorescent bulbs?**

- 1 Yes
- 2 No [SKIP TO DEMOGRAPHICS SECTION]
- 8 Don't Know [SKIP TO DEMOGRAPHICS SECTION]

**QL15A\_X** **When did you first hear of hard-wired lighting fixtures that ONLY use compact fluorescent light bulbs? Was it:** *[READ]*

- 1 Within the past six months
- 2 Within the past two years
- 3 Over two years ago
- 8 Don't Know [DON'T READ]
- 9 Refused [DON'T READ]

**QL15A** **How did you first become aware of compact fluorescent hard-wired fixtures? Any others?** *[DO NOT READ. CHECK ALL THAT APPLY]*

- QL15A\_1** First mention
- QL15A\_2** Second mention
- QL15A\_3** Third mention
- QL15A\_4** Fourth mention

- 1 In store point of purchase materials
- 2 Friends or family
- 3 Advertising on television, on the Internet, in newspapers, in magazines
- 4 Sales person
- 5 Consumer reports
- 6 Department of Energy label
- 7 Energy Star Label
- 8 Don't know
- 9 Refused

*[ASK ONLY IF CFL FIXTURES PURCHASED FROM S2; OTHERWISE SKIP TO CFL AWARENESS/PURCHASE SECTION]*



**QL15B** Have you ever purchased or been given hard-wired fixtures that **ONLY** use compact fluorescent bulbs?

- 1 Purchased
- 2 Received/given
- 3 Purchased and received/given
- 4 No, neither purchased nor received/given [SKIP TO QL15R]
- 8 Don't Know [SKIP TO QL15R]

**QL15C** In what year did you purchase or receive your **first** compact fluorescent hard-wired fixture? *[IF 2001, ALSO RECORD MONTH]*

\_\_\_\_ Year  
 \_\_\_\_ Month *[RECORD FOR YEAR 2001 ONLY]*

**QL15D** Have you purchased or received any compact fluorescent hard-wired fixtures since then?

- 1 Purchased
- 2 Received/given
- 3 Purchased and received/given
- 4 No, neither purchased nor received/given [SKIP TO QL15F]
- 8 Don't Know [SKIP TO QL15F]

**QL15E** **When?** *[IF MORE THAN ONE, ASK FOR MOST RECENT. IF 2001, ALSO RECORD MONTH]*

\_\_\_\_ Year  
 \_\_\_\_ Month *[RECORD FOR YEAR 2001 ONLY]*

*[ASK IF CFL HARD-WIRED FIXTURES PURCHASED FROM QL15B; OTHERWISE SKIP TO QL15G]*

**QL15F** What were your primary reasons for purchasing a compact fluorescent hard-wired fixture? Any other reasons? *[DO NOT READ. CHECK ALL THAT APPLY]*

- QL15F\_1** First mention
- QL15F\_2** Second mention
- QL15F\_3** Third mention
- QL15F\_4** Fourth mention

- 1 Extra cost for compact fluorescent hard-wired fixture was minimal
- 3 Energy savings worth the extra up-front cost, acceptable payback
- 4 Cost savings worth the extra up-front cost, acceptable payback

- 5 It is the “right thing to do” (environmental/resource conservation benefits)
- 6 Other benefits make purchase worthwhile (specify other benefits in #12 below)
- 7 Product works better/is higher quality
- 8 I like to have new, high-tech products
- 9 Salesperson convinced me it was the best choice
- 10 To get a rebate
- 11 Friends/family suggested I purchase compact fluorescent
- 12 Other (specify)\_\_\_\_\_
- 8 Don’t know
- 9 Refused

[ASK IF ADVERTISING/MATERIALS MENTIONED IN QL4; OTHERWISE SKIP TO QL15F\_6]

**QA15F\_5** You mentioned earlier that there were energy efficiency related advertisements and materials displayed in the store where you shopped for [LIGHTING TECHNOLOGY]. On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential were the advertisements and materials in your decision to purchase compact fluorescent hard-wired fixtures?**

Not at all							Extremely		Don’t		
<u>Influential</u>							<u>Influential</u>		<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9

[ASK IF ENERGY EFFICIENCY MENTIONED IN QL9 OR QL10; OTHERWISE SKIP TO QL15G]

**QA15F\_6** You [also] mentioned earlier that you and the salesperson discussed energy efficiency when you were shopping for [LIGHTING TECHNOLOGY]. On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential was this discussion in your decision to purchase compact fluorescent hard-wired fixtures?**

Not at all							Extremely		Don’t		
<u>Influential</u>							<u>Influential</u>		<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9

*[IF RESPONDENT MENTIONS ENERGY STAR IN QL15A THEN SKIP TO QL15H; OTHERWISE CONTINUE]*

**QL15G** Was there an ENERGY STAR label on the compact fluorescent hard-wired fixture or on the product packaging?

- 1 Yes [CONTINUE]  
 2 No [SKIP TO QL15J]  
 -8 Don't know [SKIP TO QL15J]  
 -9 Refused [SKIP TO QL15J]

*[ASK IF CFL HARD-WIRED FIXTURE PURCHASED FROM QL15B; OTHERWISE SKIP TO QL15J]*

**QL15H** On a scale of 1 to 10, where 1 is "Very Influential" and 10 is "Not At All Influential", **how influential was the ENERGY STAR label in your decision to purchase a compact fluorescent hard-wired fixture?**

Not at all								Very	Don't		
Influential								Influential	Know	Refused	
1	2	3	4	5	6	7	8	9	10	88	99

**QL15J** In general, how satisfied have you been with the compact fluorescent hard-wired fixtures you have purchased/received? Have you been... *[READ]*

- 1 Very satisfied [SKIP TO QL15K]  
 2 Somewhat satisfied  
 3 Somewhat dissatisfied  
 4 Very dissatisfied  
 -8 Don't know [DON'T READ. SKIP TO QL15K]  
 -9 Refused [DON'T READ. SKIP TO QL15K]

**QL15J\_1** In what ways were you dissatisfied?

---

*[QUESTION QL15K INTENTIONALLY BLANK]*

*[ASK IF CFL HARD-WIRED FIXTURES PURCHASED FROM QL15B; OTHERWISE SKIP TO QL15Q]*

**QL15L** Did you experience any difficulties or have any concerns or worries when purchasing compact fluorescent hard-wired fixtures?

- 1 Yes  
 2 No [SKIP TO QL15N]  
 -8 Don't know [SKIP TO QL15N]

**QL15M** What difficulties or concerns did you have? Any others? *[DO NOT READ. CHECK ALL THAT APPLY]*

- QL15M\_1 First mention  
 QL15M\_2 Second mention  
 QL15M\_3 Third mention  
 QL15M\_4 Fourth mention

- 1 I was concerned that CF hard-wired fixtures are more expensive than other fixtures
- 2 I was concerned that CF hard-wired fixtures would not save enough energy to make them worthwhile
- 3 It was hard to find the *type/style/size* fixture I wanted with CFLs
- 4 It was hard to find the *brand* I wanted with CFLs
- 5 I was concerned because I normally don't like to try new high-tech products until they have been on the market for awhile
- 6 I was concerned that I didn't know the product well enough to decide
- 7 I had to spend a lot of time comparing costs/brands
- 8 I was worried that CFLs would not work as well as other bulbs
- 9 I was worried that I did not have enough information to make an informed decision
- 10 I was not fully confident that I could trust the sales person or the sales pitch promoting CF hard-wired fixtures
- 11 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

**QL15N Did you receive a rebate or reduced price for your compact fluorescent hard-wired fixture purchase?**

- |    |   |                 |
|----|---|-----------------|
| 1  | Rebate  | [CONTINUE]      |
| 2  | Reduced price, discounted price                 | [CONTINUE ]     |
| 3  | Neither (no rebate or reduced/discounted price) | [SKIP TO QL15Q] |
| -8 | Don't know                                      | [SKIP TO QL15Q] |
| -9 | Refused   | [SKIP TO QL15Q] |

**QL15O** Who was offering the rebate/discount? Anyone else? [*PROMPT IF NECESSARY WITH: "Was it your local utility, the manufacturer, or the retailer?" CHECK ALL THAT APPLY*]

- QL15O\_1 Local electric/gas utility  
 QL15O\_1A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused
- QL15O\_2 The retail store where the CF hard-wired fixture was purchased  
 QL15O\_2A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused

- QL15O\_3 Manufacturer
- QL15O\_3A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused
- QL15O\_4 Other [SPECIFY: \_\_\_\_\_]
- QL15O\_4A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused

[IF "LOCAL ELECTRIC/GAS UTILITY" MENTIONED IN QL15O, CONTINUE; OTHERWISE SKIP TO QL15P\_2]

**QL15P** [IF MORE THAN ONE REBATE/DISCOUNT MENTIONED IN QL15O, READ: "You mentioned that you received a rebate/discount from your local utility toward the purchase of a compact fluorescent hard-wired fixture."] On a scale of 1 to 10, where 1 is "Not at all likely" and 10 is "Extremely likely," **how likely is it that you would have purchased a compact fluorescent hard-wired fixture had you not received a rebate/discount from your utility?**

Not at all	1	2	3	4	5	6	7	8	9	10	Extremely	Don't
<u>Likely</u>											<u>Likely</u>	<u>Know</u>
											-8	-9
											Refused	

[IF LOCAL UTILITY REBATE/DISCOUNT MENTIONED AND OTHER REBATES/DISCOUNTS MENTIONED, ASK QL15P\_1; OTHERWISE SKIP TO QL15P\_2]

**QL15P\_1** You also mentioned you received another/other rebate(s)/discount(s). **Overall, how likely would you have been to purchase a compact fluorescent hard-wired fixture had it not been for all of the rebates/discounts combined?** Again, on a scale of 1 to 10, where 1 is "Not at all likely," and 10 is "Extremely likely."

Not at all	1	2	3	4	5	6	7	8	9	10	Extremely	Don't
<u>Likely</u>											<u>Likely</u>	<u>Know</u>
											-8	-9
											Refused	

[IF LOCAL UTILITY REBATE/DISCOUNT NOT MENTIONED BUT OTHER REBATES/DISCOUNTS MENTIONED, ASK QL15P\_2; OTHERWISE SKIP TO QL15Q]

**QL15P\_2** On a scale of 1 to 10, where 1 is "Not at all likely" and 10 is "Extremely likely," **how likely would you have been to purchase a compact fluorescent hard-wired fixture had you not received a rebate(s)/discount(s)?**

Not at all	1	2	3	4	5	6	7	8	9	10	Extremely	Don't
<u>Likely</u>											<u>Likely</u>	<u>Know</u>
											-8	-9
											Refused	

**QL15Q Overall, how influential was the energy crisis in your decision to purchase a compact fluorescent hard-wired fixture?** Please answer on a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential.”

Not at all							Very			Don't		
<u>Influential</u>							<u>Influential</u>			<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	88	99	

**QL15R Without rebates or discounts, compact fluorescent hard-wired fixtures typically cost twice as much as comparable hard-wired fixtures. However, the compact fluorescent bulbs use less electricity and last longer than standard incandescent or halogen lamps. Given this, how likely are you to purchase compact fluorescent hard-wired fixtures at their regular price in the future? Please answer on a scale of 1 to 10, where 1 is “Not at all likely” and 10 is “Extremely likely.”**

Not at all							Extremely			Don't		
<u>Likely</u>							<u>Likely</u>			<u>Know</u>		<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	-8	-9	

[ASK IF QL15R < 7]

**QL15R\_1 Why wouldn't you be very likely?**

- 1 Costs too much to purchase
- 2 Won't save enough energy to make it worthwhile
- 3 Couldn't find the *type/style/size* fixture I wanted with CFLs
- 4 Couldn't find the *brand* I wanted with CFLs
- 5 Don't like try new high-tech products until they have been on the market for awhile
- 6 Didn't know the product well enough to decide
- 7 Would've had to spend a lot of time comparing costs/brands
- 8 Worried that CFLs would not work as well as other bulbs
- 9 Didn't have enough information to make an informed decision
- 10 Not fully confident that I could trust the sales person or the sales pitch promoting CF hard-wired fixtures
- 11 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

**CFL Awareness and Purchases [ASK ALL RESPONDENTS]**

**QL13 Compact fluorescent bulbs are small screw-in fluorescent bulbs that fit in regular light bulb sockets. Compact fluorescent bulbs look different than standard incandescent bulbs.**

They are often made out of thin tubes of glass bent into loops. Before any discounts or rebates, compact fluorescent light bulbs typically cost \$5 to \$15, whereas regular incandescent bulbs typically cost 75 cents to a dollar. **Before we talked today, had you ever heard of compact fluorescent light bulbs?**

- 1 Yes
- 2 No [SKIP TO QL14]
- 8 Don't Know [SKIP TO QL14]

**QL13A\_X When did you first hear of compact fluorescent light bulbs? Was it:**

- 1 Within the past six months
- 2 Within the past two years
- 3 Over two years ago
- 8 Don't know
- 9 Refused

**QL13A How did you first become aware of compact fluorescent light bulbs? [DO NOT READ. CHECK ALL THAT APPLY]**

**QL13A\_1** First mention

**QL13A\_2** Second mention

**QL13A\_3** Third mention

**QL13A\_4** Fourth mention

- 1 In store point of purchase materials
- 2 Friends or family
- 3 Advertising on television, on the Internet, in newspapers, in magazines
- 4 Sales person
- 5 Consumer reports
- 6 Department of Energy label
- 7 Energy Star Label
- 8 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

**QL13B Have you ever purchased or been given compact fluorescent light bulbs?**

- 1 Purchased
- 2 Received/given
- 3 Purchased and received/given
- 4 No, neither purchased nor received/given [SKIP TO QL13R]
- 8 Don't Know [SKIP TO QL13R]

**QL13C** When did you purchase or receive your first compact fluorescent light bulb? *[IF SINCE JANUARY 2001, RECORD MONTH AND YEAR. OTHERWISE RECORD YEAR ONLY]*

\_\_\_\_ Month

\_\_\_\_ Year

**QL13D** Have you purchased or received any since then?

- |    |  |                 |
|----|--|-----------------|
| 1  | Purchased                                |                 |
| 2  | Received/given                           |                 |
| 3  | Purchased and received/given             |                 |
| 4  | No, neither purchased nor received/given | [SKIP TO QL13F] |
| -8 | Don't Know                               | [SKIP TO QL13F] |

**QL13E** When? *[IF MORE THAN ONE, ASK FOR MOST RECENT. IF SINCE JANUARY 2001, RECORD MONTH AND YEAR. OTHERWISE RECORD YEAR ONLY]*

\_\_\_\_ Month

\_\_\_\_ Year

*[ASK IF CFLS PURCHASED FROM QL13B; OTHERWISE SKIP TO QL13G]*

**QL13F** What were your primary reasons for purchasing compact fluorescent light bulbs? Any other reasons? *[DO NOT READ. CHECK ALL THAT APPLY]*

- QL13F\_1** First mention  
**QL13F\_2** Second mention  
**QL13F\_3** Third mention  
**QL13F\_4** Fourth mention

- 1 Extra cost for compact fluorescent bulb was minimal
- 3 Energy savings worth the extra up-front cost, acceptable payback
- 4 Cost savings worth the extra up-front cost, acceptable payback
- 5 It is the "right thing to do" (environmental/resource conservation benefits)
- 6 Other benefits make purchase worthwhile (specify other benefits in # 12 below)
- 7 Product works better/is higher quality
- 8 I like to have new, high-tech products
- 9 Salesperson convinced me it was the best choice
- 10 To get a rebate
- 11 Friends/family suggested I purchase compact fluorescent
- 12 Other (specify)\_\_\_\_\_
- 8 Don't know
- 9 Refused



[ASK IF ADVERTISING/MATERIALS MENTIONED IN QL4; OTHERWISE SKIP TO QL13F\_6]

**QA13F\_5** You mentioned earlier that there were energy efficiency related advertisements and materials displayed in the store where you shopped for [LIGHTING TECHNOLOGY]. On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential were the advertisements and materials in your decision to purchase CFLs?**

Not at all										Extremely	Don't	
<u>Influential</u>										<u>Influential</u>	<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10		-8	-9

[ASK IF ENERGY EFFICIENCY MENTIONED IN QL9 OR QL10; OTHERWISE SKIP TO QL13G]

**QA13F\_6** You [also] mentioned earlier that you and the salesperson discussed energy efficiency when you were shopping for [LIGHTING TECHNOLOGY]. On a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential,” **how influential was this discussion in your decision to purchase CFLs?**

Not at all										Extremely	Don't	
<u>Influential</u>										<u>Influential</u>	<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10		-8	-9

*[IF RESPONDENT MENTIONS ENERGY STAR IN QL13A THEN SKIP TO QL13H; OTHERWISE CONTINUE]*

**QL13G** Was there an ENERGY STAR label on the compact fluorescent light bulb packaging?

- 1 Yes [CONTINUE]
- 2 No [SKIP TO QL13J]
- 8 Don't know [SKIP TO QL13J]
- 9 Refused [SKIP TO QL13J]

*[ASK IF CFLS PURCHASED FROM QL13B; OTHERWISE SKIP TO QL13J]*

**QL13H** On a scale of 1 to 10, where 1 is “Very Influential” and 10 is “Not At All Influential”, **how influential was the ENERGY STAR label in your decision to purchase compact fluorescent light bulbs?**

Not at all					Very					Don't	
<u>Influential</u>					<u>Influential</u>					<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10	88	99

**QL13J In general, how satisfied have you been with the compact fluorescent light bulbs you have purchased/received? Have you been... [READ]**

- 1 Very satisfied [SKIP TO QL13K]
- 2 Somewhat satisfied
- 3 Somewhat dissatisfied
- 4 Very dissatisfied
- 8 Don't know [DON'T READ. SKIP TO QL13K]
- 9 Refused [DON'T READ. SKIP TO QL13K]

**QL13J\_1 In what ways were you dissatisfied? Any others?**

[QUESTION QL13K INTENTIONALLY BLANK]

[ASK IF CFLS PURCHASED FROM QL13B; OTHERWISE SKIP TO QL13Q]

**QL13L Did you experience any difficulties or have any concerns or worries when purchasing CFLs?**

- 1 Yes
- 2 No [SKIP TO QL13N]
- 8 Don't know [SKIP TO QL13N]

**QL13M What difficulties or concerns did you have? [DO NOT READ. CHECK ALL THAT APPLY]**

- QL13M\_1 First mention
- QL13M\_2 Second mention
- QL13M\_3 Third mention
- QL13M\_4 Fourth mention

- 1 I was concerned that CFLs are more expensive than standard bulbs
- 2 I was concerned that CFLs would not save enough energy to make them worthwhile
- 3 It was hard to find the *type/style/size* light bulb I wanted
- 4 It was hard to find the *brand* I wanted

- 5 I was concerned because I normally don't like to try new high-tech products until they have been on the market for awhile
- 6 I was concerned that I didn't know the product well enough to decide
- 7 I had to spend a lot of time comparing costs/brands
- 8 I was worried that CFLs would not work as well as standard bulbs
- 9 I was worried that I did not have enough information to make an informed decision
- 10 I was not fully confident that I could trust the sales person or the sales pitch promoting CFLs
- 11 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

**QL13N Did you receive a rebate or reduced price for your CFL purchases?**

- 1 Rebate [CONTINUE]
- 2 Reduced price, discounted price [CONTINUE]
- 3 No, no rebate or discount [SKIP TO QL13Q]
- 8 Don't know [SKIP TO QL13Q]
- 9 Refused [SKIP TO QL13Q]

**QL13O Who was offering the rebate/discount? Anyone else? [PROMPT IF NECESSARY WITH: "Was it offered by your local utility, the manufacturer, or the retailer?" CHECK ALL THAT APPLY]**

- QL13O\_1 Local electric/gas utility
- QL13O\_1A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused
- QL13O\_2 The retail store where the CFLs were purchased
- QL13O\_2A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused
- QL13O\_3 Manufacturer
- QL13O\_3A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused
- QL13O\_4 Other [SPECIFY: \_\_\_\_\_]
- QL13O\_4A What was the approximate amount? \_\_\_\_\_ -8 Don't Know -9 Refused

*[IF "LOCAL ELECTRIC/GAS UTILITY" MENTIONED IN QL13O, CONTINUE; OTHERWISE SKIP TO QL13P\_2]*

**QL13P [IF MORE THAN ONE REBATE/DISCOUNT MENTIONED IN QL13O, READ: "You mentioned that you received a rebate/discount from your local utility toward the purchase of a compact fluorescent light bulb."] On a scale of 1 to 10, where 1 is "Not at all likely" and 10 is "Extremely likely," how likely is it that**

**you would have purchased CFLs had you not received a rebate/discount from your utility?**

Not at all								Extremely		Don't	
<u>Likely</u>								<u>Likely</u>		<u>Know</u> <u>Refused</u>	
1	2	3	4	5	6	7	8	9	10	-8	-9

[IF LOCAL UTILITY REBATE/DISCOUNT MENTIONED AND OTHER REBATES/DISCOUNTS MENTIONED, ASK QL13P\_1; OTHERWISE SKIP TO QL13P\_2]

**QL13P\_1** You also mentioned you received another/other rebate(s)/discount(s). **Overall, how likely would you have been to purchase CFLs had it not been for all of the rebates/discounts combined?** Again, on a scale of 1 to 10, where 1 is “Not at all likely,” and 10 is “Extremely likely.”

Not at all								Extremely		Don't	
<u>Likely</u>								<u>Likely</u>		<u>Know</u> <u>Refused</u>	
1	2	3	4	5	6	7	8	9	10	-8	-9

[IF LOCAL UTILITY REBATE/DISCOUNT NOT MENTIONED BUT OTHER REBATES/DISCOUNTS MENTIONED, ASK QL13P\_2; OTHERWISE SKIP TO QL13R]

**QL13P\_2** On a scale of 1 to 10, where 1 is “Not at all likely” and 10 is “Extremely likely,” **how likely would you have been to purchase CFLs had you not received a rebate(s)/discount(s)?**

Not at all								Extremely		Don't	
<u>Likely</u>								<u>Likely</u>		<u>Know</u> <u>Refused</u>	
1	2	3	4	5	6	7	8	9	10	-8	-9

**QL13Q** **Overall, how influential was the energy crisis in your decision to purchase CFLs?** Please answer on a scale of 1 to 10, where 1 is “Not at all influential,” and 10 is “Extremely influential.”

Not at all								Very		Don't	
<u>Influential</u>								<u>Influential</u>		<u>Know</u> <u>Refused</u>	
1	2	3	4	5	6	7	8	9	10	88	99

**QL13R** Without rebates or discounts, CFLs typically cost between \$5 to \$15 each. However, CFLs use less electricity and last longer than standard incandescent lamps. Given this, **how likely are you to purchase CFLs at their regular price in the future? Please answer on a scale of 1 to 10, where 1 is “Not at all likely” and 10 is “Extremely likely.”**

Not at all										Extremely	Don't	
<u>Likely</u>										<u>Likely</u>	<u>Know</u>	<u>Refused</u>
1	2	3	4	5	6	7	8	9	10		-8	-9

[ASK IF QL13R < 7]

**QL13R\_1 Why wouldn't you be very likely?**

- 1 Costs too much to purchase
- 2 Won't save enough energy to make it worthwhile
- 3 Couldn't find the *type/style/size* I wanted
- 4 Couldn't find the *brand* I wanted
- 5 Don't like try new high-tech products until they have been on the market for awhile
- 6 Didn't know the product well enough to decide
- 7 Would've had to spend a lot of time comparing costs/brands
- 8 Worried that CFLs would not work as well as other bulbs
- 9 Didn't have enough information to make an informed decision
- 10 Not fully confident that I could trust the sales person or the sales pitch promoting CFLs
- 11 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

<b>Demographics</b>
---------------------

**Before we finish, I have just a few more questions about your household to make sure we're getting a representative sample of California residents.**

**DE1** What type of home do you live in? *[DO NOT READ. CHECK ONLY ONE RESPONSE]*

- |    |                        |             |                       |            |            |       |
|----|------------------------|-------------|-----------------------|------------|------------|-------|
| 1  | Single-family          | <b>DE1a</b> | Attached or detached? | 1 Attached | 2 Detached | -8 DK |
| 2  | Apartment              | <b>DE1b</b> | Five or more units?   | 1 Yes      | 2 No       | -8 DK |
| 3  | Mobile home            |             |                       |            |            |       |
| 4  | Other [SPECIFY: _____] |             |                       |            |            |       |
| -8 | Don't know             |             |                       |            |            |       |
| -9 | Refused                |             |                       |            |            |       |

*[DE2 INTENTIONALLY BLANK]*

**DE3** In what year was your home built?

- |    |            |                      |
|----|------------|----------------------|
|    | _____ Year | <i>[SKIP TO DE4]</i> |
| -8 | Don't know |                      |
| -9 | Refused    | <i>[SKIP TO DE4]</i> |

**D3A** Was it built .... *[READ RANGE]*?

- |    |  |
|----|--|
| 1  | in the last five years (i.e., since 1997)? |
| 2  | between 1992 and 1996?                     |
| 3  | between 1987 and 1991?                     |
| 4  | between 1982 and 1986?                     |
| 5  | between 1977 and 1981?                     |
| 6  | between 1960 and 1976?                     |
| 7  | between 1940 and 1959?                     |
| 8  | before 1940                                |
| -8 | Don't know                                 |
| -9 | Refused                                    |

**DE4** About how large is your home in terms of total square feet?

- |    |                   |                      |
|----|-------------------|----------------------|
|    | _____ Square feet | <i>[SKIP TO DE5]</i> |
| -8 | Don't know        |                      |
| -9 | Refused           | <i>[SKIP TO DE5]</i> |

**DE4A Is it .... [READ RANGE]?**

- 1 less than 500 square feet
- 2 500-999 square feet
- 3 1,000 to 1,499 square feet
- 4 1,500-1,999 square feet
- 5 2,000-2,499 square feet
- 6 2,500-2,999 square feet
- 7 3,000 or more square feet
- 8 Don't know
- 9 Refused

**DE5 How many people live in your home year-round of the following age groups?**

For D5a – D5d:

- 8 Don't know
- 9 Refused

**DE5A** \_\_\_\_\_ Less than 18 years old

**DE5B** \_\_\_\_\_ 19-34

**DE5C** \_\_\_\_\_ 35-59

**DE5D** \_\_\_\_\_ 60 or older

**DE6 Which of the following describes your educational background?**

- 1 Some high school
- 2 High school graduate
- 3 Trade or technical school
- 4 Some college
- 5 College graduate
- 6 Some graduate school
- 7 Graduate degree
- 8 Don't know
- 9 Refused

**DE7 Which of the following best represents your annual household income from all sources in 2000, before taxes? [READ]**

- 1 Less than \$20,000 per year
- 2 \$20,000-49,999
- 3 \$50,000-74,999
- 4 \$75,000-99,999
- 5 \$100,000 or more
- 8 Don't know
- 9 Refused

**DE8 Which of the following best describes your racial or ethnic background? [READ]**

- 1 Hispanic
- 2 African American
- 3 Caucasian
- 4 Asian American
- 5 Native American
- 6 Interracial
- 7 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

**DE9 Approximately how much was your utility bill per month this past summer? Please include charges for both electricity and natural gas, if both apply to you.**

- 1 \$1-\$25
- 2 \$26-\$50
- 3 \$51-\$100
- 4 \$101-\$150
- 5 \$151-\$200
- 6 \$201-\$300
- 7 \$301 +
- 8 Don't know
- 9 Refused

**DE9A Approximately how much was your utility bill per month this past winter? Again, please include charges for both electricity and natural gas, if both apply to you.**

- 1 \$1-\$25
- 2 \$26-\$50
- 3 \$51-\$100
- 4 \$101-\$150
- 5 \$151-\$200
- 6 \$201-\$300
- 7 \$301 +
- 8 Don't know
- 9 Refused

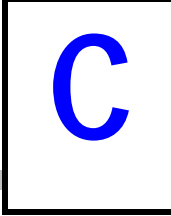
**RECORD RESPONDENT GENDER**

- 1 Female
- 2 Male

**END**

*Thank you for taking the time to complete this important survey! Have a great day/night!*





## CFL ADOPTER SURVEY

### CFL Consumer Survey CA Residential Lighting & Appliance Program Study – Phase IV

Hello, my name is \_\_\_\_\_ from Quantum Consulting. We're conducting a study among California households to learn about attitudes and behaviors concerning energy conservation. May I please speak to someone in your household who makes purchase decisions regarding lighting products?

I want to assure you that this is not a sales call and that the information that you provide will be kept strictly confidential. This will only take about 15 minutes of your time.

IF SPONSORSHIP NEEDED: This study is being conducted on behalf of the California Public Utilities Commission, and your local utility company.

*[CONTINUE OR ARRANGE FOR CALLBACK]*

#### 3 Giveaway/Turn-in Event Screener

**S2. According to our records, you or someone else in your household received a free compact fluorescent light bulb – or CFL – at the [UTILITY] giveaway [see SF doc: at/in Event] in [see SF doc: month of event] 2001. Do you recall getting a free CFL at this event?**

- 1 Yes [GO TO Q9; Number of bulbs received=1]
- 2 No [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION> OTHERWISE GO TO S3]
- 8 Don't know [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. OTHERWISE GO TO S3]

#### [CFL TECHNOLOGY DESCRIPTION]

Compact fluorescent bulbs are small screw-in fluorescent bulbs that fit in regular light bulb sockets. Compact fluorescent bulbs look different than standard incandescent bulbs. They are often made out of thin tubes of glass bent into loops. Before any discounts or rebates, compact fluorescent light bulbs typically cost \$5 to \$15, whereas regular bulbs typically cost 75 cents to a dollar. Do you now recall receiving a free CFL at this event?

**S3.** Is it possible that someone else in your household participated in this event?

- 1 Yes
- 2 No [TERMINATE]
- 3 Don't know [TERMINATE]

**S4.** May I please speak with that person?

- 1 Yes
- 2 No [TERMINATE]
- 3 Don't know [TERMINATE]

[REPEAT S2 WITH NEW RESPONDENT]

### 5 Incentive Programs

**S6.** Have you or someone else in your household purchased a compact fluorescent light bulb – or CFL – in the past ten months?

- 1 Yes [SKIP TO S7]
- 2 No [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. OTHERWISE THANK AND TERMINATE]
- 8 Don't know [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. OTHERWISE THANK AND TERMINATE]

#### [CFL TECHNOLOGY DESCRIPTION]

Compact fluorescent bulbs are small screw-in fluorescent bulbs that fit in regular light bulb sockets. Compact fluorescent bulbs look different than standard incandescent bulbs. They are often made out of thin tubes of glass bent into loops. Before any discounts or rebates, compact fluorescent light bulbs typically cost \$5 to \$15, whereas regular bulbs typically cost 75 cents to a dollar. Do you now recall purchasing a CFL in the past 10 months?

**S7.** How many compact fluorescent bulbs have you purchased in the past tenmonths?

Number of bulbs: \_\_\_\_\_ [RECORD NUMBER OF BULBS]  
 -8 Don't Know

**S8.** What is the name of your electric utility company?

- 1 PG&E
- 2 SDG&E
- 3 SCE
- 4 SMUD
- 5 LADWP
- 6 Other
- 7 Don't know

**S9.** What was the name of the store where you purchased the compact fluorescent light bulb(s)?

Name of Store: \_\_\_\_\_ [IF STORE NAME MATCHES STORE LIST BY UTILITY: IF PG&E OR SMUD THEN GO TO S11, IF OTHER UTILITY GO TO S11c; OTHERWISE THANK AND TERMINATE]

Don't Know [CONTINUE]

[NOTE: There are other stores in the utilities' service territories that sold CFLs with rebates. Give Quantum a complete list.]

**S10** Did you buy [it/them] at ...? [PROMPT]

S10a. For PG&E and SMUD:

1. Costco [CONTINUE]
2. Long's Drugs [CONTINUE]
3. Orchard Supply Hardware [CONTINUE]
- 8 Don't Know [CONTINUE]
- 9 Refused [CONTINUE]

S10b. For SCE or LADWP:

1. Costco [SKIP TO S11c]
2. Lowe's [SKIP TO S11c]
3. Home Depot [SKIP TO S11c]
- 8 Don't Know [THANK AND TERMINATE]
- 9 Refused [THANK AND TERMINATE]

S10c. For SDGE:

- |                            |                       |
|----------------------------|-----------------------|
| 1. Costco                  | [SKIP TO S11c]        |
| 2. Dixieline               | [SKIP TO S11c]        |
| 3. Home Base               | [SKIP TO S11c]        |
| 4. Home Depot              | [SKIP TO S11c]        |
| 5. Long's Drugs            | [SKIP TO S11c]        |
| 6. Lowe's                  | [SKIP TO S11c]        |
| 7. Orchard Supply Hardware | [SKIP TO S11c]        |
| 8. Wal-Mart                | [SKIP TO S11c]        |
| -8 Don't Know              | [THANK AND TERMINATE] |
| -9 Refused                 | [THANK AND TERMINATE] |

S10d. For Other:

- |               |                       |
|---------------|-----------------------|
| 1. Costco     | [SKIP TO S11c]        |
| 2. Home Depot | [SKIP TO S11c]        |
| 3. Long's     | [SKIP TO S11c]        |
| -8 Don't Know | [THANK AND TERMINATE] |
| -9 Refused    | [THANK AND TERMINATE] |

[ASK ONLY IF PG&E or SMUD; OTHERWISE, SKIP TO S11c]

S11. Do you recall receiving \$3 off at the cash register when you bought this/these CFL[s]?

- |   |                |
|---|----------------|
| 1. Yes  | [CONTINUE]     |
| 2. No [IF S10a=DK/REFUSED, THANK AND TERMINATE; OTHERWISE SKIP TO S11c] |                |
| -8 Don't Know   | [SKIP TO S11c] |
| -9 Refused  | [SKIP TO S11c] |

S11a. How likely were you to have purchased [this bulb/these bulbs] if you didn't get the \$3 off at the register?

1. Very likely
2. Somewhat likely
3. Not very likely
4. Very unlikely
5. Don't know
6. Refused

S11b. [ASK IF S7>1; OTHERWISE GO TO Q9] Did the \$3 rebate encourage you to buy more than one bulb?

1. Yes
2. No
- 88 Don't know
- 99 Refused

[GO TO Q9]

S11c. How likely would you have been to purchase the CFL[s] if [it/they] cost an extra \$3 [each]?

1. Very likely
2. Somewhat likely
3. Not very likely
4. Very unlikely
5. Don't know
6. Refused

[GO TO Q9]

#### 4b SDG&E Mail-in Audit Screener

**S12. According to our records, you recently completed an SDG&E energy survey and were mailed a report with energy savings recommendations, followed by a free compact fluorescent light bulb or a "CFL." Do you recall receiving a free CFL from SDG&E?**

- 1 Yes [SKIP TO S15b; Number of bulbs received=1]
- 2 No [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. OTHERWISE GO TO S13]
- 8 Don't know [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. OTHERWISE GO TO S13]

**[CFL TECHNOLOGY DESCRIPTION]**

Compact fluorescent bulbs are small screw-in fluorescent bulbs that fit in regular light bulb sockets. Compact fluorescent bulbs look different than standard incandescent bulbs. They are often made out of thin tubes of glass bent into loops. Before any discounts or rebates, compact fluorescent light bulbs typically cost \$5 to \$15, whereas regular bulbs typically cost 75 cents to a dollar. Some floor lamps can use only compact fluorescent light bulbs. Do you now recall receiving a free CFL from SDG&E?

**S13.** Is it possible that someone else in your household participated in this program?

- 1 Yes
- 2 No [TERMINATE]
- 8 Don't know [TERMINATE]

**S14.** May I please speak with that person?

- 1 Yes
- 2 No [TERMINATE]
- 8 Don't know [TERMINATE]

[REPEAT S12 WITH NEW RESPONDENT]

[NOTE: SHOULD WE ADD A QUESTION LIKE: "Were you aware that you would be getting a free CFL from SDG&E for filling out the energy survey?" – IF NO, DON'T ASK S15b]

**S15b.** How likely would have been to fill out the energy survey and mail it to SDG&E if you didn't get the free CFL?

- 1. Very likely
- 2. Somewhat likely
- 3. Not very likely
- 4. Very unlikely
- 5. Don't know
- 6. Refused

[GO TO Q9]

#### 4b SCE Refrigerator Recycling Screener

**S16.** According to our records, you had a refrigerator recycled through Southern California Edison's program and received a free 5-pack of compact fluorescent light bulbs – or CFLs. Do you recall receiving these free CFLs?

- 1 Yes [SKIP TO S19b; Number of bulbs received=5]
- 2 No [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. OTHERWISE GO TO S17]
- 8 Don't know [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. OTHERWISE GO TO S17]

**[CFL TECHNOLOGY DISCRPTION]**

Compact fluorescent bulbs are small screw-in fluorescent bulbs that fit in regular light bulb sockets. Compact fluorescent bulbs look different than standard incandescent bulbs. They are often made out of thin tubes of glass bent into loops. Before any discounts or rebates, compact fluorescent light bulbs typically cost \$5 to \$15, whereas regular bulbs typically cost 75 cents to a dollar. Do you now recall receiving these free CFLs from SCE?

**S17.** Is it possible that someone else in your household participated in this program?

- 1 Yes
- 2 No [TERMINATE]
- 8 Don't know [TERMINATE]

**S18.** May I please speak with that person?

- 1 Yes
- 2 No [TERMINATE]
- 8 Don't know [TERMINATE]

**[REPEAT S16 WITH NEW RESPONDENT]**

**S19b.** Were you aware that you could have received \$35 in cash instead of the pack of CFLs for participating in the refrigerator recycling program?

- 1 Yes [CONTINUE]
- 2 No [GO TO Q9]
- 3 Don't know [GO TO Q9]

**S19c.** Why did you choose to take the CFLs instead of the cash?

- 1 Because the CFLs were worth more than the \$35 in cash
- 2 Because the CFLs will save me money on my electric bill each month, wanted to save energy/money
- 3 Because I needed the CFLs, needed new light bulbs
- 4 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know

**[GO TO Q9]**

<b>1 MF Direct Install Program Screener</b>
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**S21.** According to our records, earlier this year, you or someone else in your household may have received one or more free compact fluorescent light bulbs – or CFLs – through a [UTILITY] program that involved your apartment building. Do you recall receiving any free CFLs sometime this year?

- 1 Yes [SKIP TO S22]  
 2 No [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. IF UNAWARE OF UTILITY PROGRAM, READ PROGRAM DESCRIPTION. OTHERWISE GO TO S23]  
 -8 Don't know [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. IF UNAWARE OF UTILITY PROGRAM, READ PROGRAM DESCRIPTION. OTHERWISE GO TO S23]

**[PROGRAM DESCRIPTION – To be provided with sample frame.]**

**[CFL TECHNOLOGY DESCRIPTION]**

. Compact fluorescent bulbs are small screw-in fluorescent bulbs that fit in regular light bulb sockets. Compact fluorescent bulbs look different than standard incandescent bulbs. They are often made out of thin tubes of glass bent into loops. Before any discounts or rebates, compact fluorescent light bulbs typically cost \$5 to \$15, whereas regular bulbs typically cost 75 cents to a dollar. Do you now recall receiving free CFLs sometime this past year?

**S22.** How many compact fluorescent bulbs were installed in your home?

**[NOTE: DO WE WANT TO KNOW HOW MANY THEY GOT vs. HOW MANY WERE INSTALLED?]**

Number of bulbs: \_\_\_\_\_ [GO TO Q9] [RECORD NUMBER OF BULBS]  
 -8 Don't Know

**S23.** Is it possible that someone else in your household participated in this program?

- 1 Yes  
 2 No [TERMINATE]  
 -8 Don't know [TERMINATE]



S24. May I please speak with that person?

- 1 Yes
- 2 No [TERMINATE]
- 8 Don't know [TERMINATE]

[REPEAT S21 WITH NEW RESPONDENT]

## 2 Low Income Giveaway Program (Powerwalk) / Random dialing Screener

S27. Did you receive a pack of four compact fluorescent light bulbs – or CFLs – as part of the “Powerwalk” Program this past summer?

- 1 Yes [SKIP TO S30]
- 2 No [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. IF UNAWARE OF PROGRAM, READ PROGRAM DESCRIPTION. OTHERWISE GO TO S28]
- 8 Don't know [IF UNAWARE OF CFL TECHNOLOGY, READ DESCRIPTION. IF UNAWARE OF PROGRAM, READ PROGRAM DESCRIPTION. OTHERWISE GO TO S28]

### [PROGRAM DESCRIPTION]

In the Powerwalk Program, members of the California Conservation Corps walked from door-to-door, wearing fluorescent yellow vests with “Flex Your Power” written on them. They would have given you a bag of four compact fluorescent bulbs, along with two brochures.

### [CFL TECHNOLOGY DESCRIPTION]

Compact fluorescent bulbs are small screw-in fluorescent bulbs that fit in regular light bulb sockets. Compact fluorescent bulbs look different than standard incandescent bulbs. They are often made out of thin tubes of glass bent into loops. Before any discounts or rebates, compact fluorescent light bulbs typically cost \$5 to \$15, whereas regular bulbs typically cost 75 cents to a dollar.

S30. What is the name of your electric utility company?

- 1 PG&E [GO TO Q9]
- 2 SDG&E [GO TO Q9]
- 3 SCE [GO TO Q9]
- 4 Other [SPECIFY: \_\_\_\_\_. THANK AND TERMINATE]
- 8 Don't know [GO TO Q9]

**S28.** Is it possible that someone else in your household may have received a pack of CFLs from the Powerwalk Program?

- 1 Yes
- 2 No [TERMINATE]
- 8 Don't know [TERMINATE]

**S29.** May I please speak with that person?

- 1 Yes
- 2 No [TERMINATE]
- 8 Don't know [TERMINATE]

<b>Residential Installation Rates</b>
---------------------------------------

Q9. [If number of bulbs=1 then ask: **Is the bulb that you**; If number of bulbs>1 then ask: **Are ALL the bulbs that you**] [if Screener #1,2,3,4 then say: **received**; if Screener #5 then say: **purchased**] currently installed in your home?

- 1 Yes [skip to Q11b]
- 2 No [If number of bulbs=1 then skip to Q11; otherwise CONTINUE]
- 3 DK [skip to Q11b]

Q10. How many are currently installed?

\_\_\_\_\_

Q11. Why [if number of bulbs=1 then say: **isn't the bulb**; if number of bulbs>1 then say: **aren't all the bulbs**] currently installed?

[OPEN ENDED/ACCEPT MULTIPLES]

- 1 Not enough fixtures for all bulbs
- 2 Bulbs didn't fit in fixtures
- 3 Didn't like the quality of the light
- 4 Light wasn't bright enough
- 5 Light flickered when I turned it on
- 6 Burned out
- 7 Broken
- 8 Stolen
- 9 Gave to someone else
- 10 Other, specify \_\_\_\_\_
- 11 DK

[ASK Q11a IF Q9=2, Q10>0, AND 1<=Q11<=5; OTHERWISE SKIP TO Q11b]

Q11a. Do you plan on using the bulbs that aren't installed once the CFLs you do have installed burn out?

1. Yes
2. No
3. DK
4. Refused

[Number installed = Q10, or if Q10 skipped then number installed= original quantity of bulbs].

[IF THE NUMBER INSTALLED=0 THEN SKIP TO AWARENESS]

Q11b. Did [if number installed>1 then say: **any of the bulbs**; if number installed=1 then say: **the bulb**] you installed replace [if number installed>1 then say: **compact fluorescent bulbs**; if number installed=1 then say: **a compact fluorescent bulb**]?

1. Yes, all [if number installed>1]
2. Yes, some [if number installed>1]
3. Yes [if number installed=1]
4. No
5. DK
6. Refused

Q12. We'd like to ask a few questions [if number installed>1 then say: **for each compact fluorescent bulb still installed. Consider the bulb that you use most.** ; if number installed=1 then say: **for the compact fluorescent bulb that you installed.**] About how many hours per day is it on?

\_\_\_\_\_

Q13a. And is it usually on during weekdays between noon and 6pm?

- 1 Yes
- 2 No
- 3 DK

Q13b. How about between 6pm and 9pm?

- 1 Yes
- 2 No
- 3 DK

Q14. And where is this bulb located?

- 1 Living/family room
- 2 Bathroom
- 3 Kitchen
- 4 Bedroom
- 5 Den/Office
- 6 Outside
- 7 Dining room
- 8 Hall
- 9 Closet
- 10 Other: \_\_\_\_\_

**If number installed = 1 then SKIP to AWARENESS**

Q15. Now, considering the bulb that you use next most, about how many hours per day is it on?

\_\_\_\_\_

Q16a. And is it usually on during weekdays between noon and 6pm?

- 1 Yes
- 2 No
- 3 DK

Q16b. How about between 6pm and 9pm?

- 1 Yes
- 2 No
- 3 DK

Q17. And where is this bulb located?

- 1 Living/family room
- 2 Bathroom
- 3 Kitchen
- 4 Bedroom
- 5 Den/Office
- 6 Outside
- 7 Dining room
- 8 Hall
- 9 Closet
- 10 Other: \_\_\_\_\_

**If number installed = 2 then SKIP to AWARENESS**

Q18. Now, again considering the bulb that you use 3<sup>rd</sup> most, about how many hours per day is it on?

\_\_\_\_\_

Q19a. And is it usually on during weekdays between noon and 6pm?

- 1 Yes
- 2 No
- 3 DK

Q19b. How about between 6pm and 9pm?

- 1 Yes
- 2 No
- 3 DK

Q20. And where is this bulb located?

- 1 Living/family room
- 2 Bathroom
- 3 Kitchen
- 4 Bedroom
- 5 Den/Office
- 6 Outside
- 7 Dining room
- 8 Hall
- 9 Closet
- 10 Other: \_\_\_\_\_

**If number installed = 3 then SKIP to AWARENESS**

Q21. For the remaining bulbs that are still installed, on average about how many hours per day are they on?

\_\_\_\_\_

Q22a. And is it / are they usually on during weekdays between noon and 6pm?

Q22b. How about between 6pm and 9pm?

- 1 Yes
- 2 No
- 3 DK

<b>Awareness, etc.</b>
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A1. **Before you** [*IF SCREENER 3*: received a CFL through [UTILITY]’s giveaway program; *IF SCREENER 1*: received a free CFL/free CFLs from [UTILITY]; *IF SCREENER 2*: received free CFLs through the state’s Powerwalk Program; *IF SCREENER 4A*: received CFLs through SCE’s refrigerator recycling program; *IF SCREENER 4B*: received a CFL through participating in SDG&E’s home energy audit program], **had you ever heard of them??**

- 1 Yes
- 2 No [SKIP TO A5]
- 8 Don’t Know [SKIP TO A5]

A2. When did you first hear of compact fluorescent light bulbs? Was it:

- 1 Within the past year
- 2 Within the past two years
- 3 Over two years ago
- 8 Don’t know
- 9 Refused

A3. **Had you ever used a compact fluorescent bulb before:**

[*IF SCREENER 3*: receiving a CFL through [UTILITY]’s giveaway program; *IF SCREENER 1*: receiving a free CFL/free CFLs from [UTILITY]; *IF SCREENER 2*: receiving free CFLs through the state’s Powerwalk Program; *IF SCREENER 4A*: receiving CFLs through SCE’s refrigerator recycling program; *IF SCREENER 4B*: receiving a CFL through participating in SDG&E’s home energy audit program]?

- 1 Yes [SKIP TO A5]
- 2 No [CONTINUE]
- 8 Don’t Know [SKIP TO A5]

A4. Why not? [DO NOT READ; ACCEPT MULTIPLES]

- 1. Couldn’t find CFLs
- 2. Didn’t think I would like the quality of light
- 3. Didn’t think I would like how CFLs can flicker
- 4. Too expensive
- 5. Wouldn’t fit in my fixtures
- 6. Other
- 7. Don’t know
- 8. Refused

**A5 Overall, how would you rate your knowledge of the ways you could save energy in your home?** On a scale of 1 to 10, with 1 meaning “you are not at all knowledgeable” and 10 meaning “you are extremely knowledgeable,” how knowledgeable are you about ways to save energy in your home?

Not At All <u>Knowledgeable</u>	Extremely <u>Knowledgeable</u>	Don't <u>Know</u>
1 2 3 4 5 6 7 8 9 10		-8

**A6 To what extent has your knowledge about how to reduce your energy consumption increased due to the energy crisis in California? Please answer on a scale of 1 to 10, with 1 meaning “Not At All” and 10 meaning “A Great Deal.”**

Not At All	A Great Deal	<u>DK</u>
1 2 3 4 5 6 7 8 9 10		-8

**A7 How would you rate your household’s efforts to save energy in your home?** Again, think of it on a scale of 1 to 10, with 1 meaning “you have not done much” and 10 meaning “you have done almost everything you can” to save energy in your home.

Not Done <u>Much</u>	Done Almost <u>Everything</u>	<u>DK</u>
1 2 3 4 5 6 7 8 9 10		-8

**A8 How much of this energy-saving activity has occurred since the beginning of the State’s energy crisis? (READ:)**

- 1 A lot
- 2 Some
- 3 A little
- 4 None, we did everything we could BEFORE the energy crisis
- 8 Don't know



<b>Demographics</b>
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Before we finish, I have just a few more questions about your household to make sure we're getting a representative sample of California residents.

[ASK ONLY FOR SCREENER #3; OTHERWISE SKIP TO DE1]

**DE0** What is the name of your electric utility company?

- 1 PG&E
- 2 SDG&E
- 3 SCE
- 4 Other [SPECIFY: \_\_\_\_\_]
- 5 Don't know

**DE1a** Do you own or rent your home?

- 1 Own [SKIP TO DE1c]
- 2 Rent
- 8 Don't know

**DE1b** Do you or someone else in your household pay a utility company directly for your electricity, or is it included in your rent?

- 1 Pay electric bill directly
- 2 Included in rent
- 8 Don't know

**DE1** What type of home do you live in? [DO NOT READ. CHECK ONLY ONE RESPONSE]

- 1 Single-family
 

<b>DE1a</b> Attached or detached?	1 Attached	2 Detached	-8 DK
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- 2 Apartment
 

<b>DE1b</b> Five or more units?	1 Yes	2 No	-8 DK
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- 3 Mobile home
- 4 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

**DE3** In what year was your home built?

- \_\_\_\_\_ Year [SKIP TO DE4]
- 8 Don't know
- 9 Refused [SKIP TO DE4]

**D3A Was it built .... [READ RANGE]?**

- 1 in the last five years (i.e., since 1997)?
- 2 between 1992 and 1996?
- 3 between 1987 and 1991?
- 4 between 1982 and 1986?
- 5 between 1977 and 1981?
- 6 between 1960 and 1976?
- 7 between 1940 and 1959?
- 8 before 1940
- 8 Don't know
- 9 Refused

**DE4 About how large is your home in terms of total square feet?**

- \_\_\_\_\_ Square feet                      *[SKIP TO DE5]*
- 8 Don't know
- 9 Refused                                      *[SKIP TO DE5]*

**DE4A Is it .... [READ RANGE]?**

- 1 less than 500 square feet
- 2 500-999 square feet
- 3 1,000 to 1,499 square feet
- 4 1,500-1,999 square feet
- 5 2,000-2,499 square feet
- 6 2,500-2,999 square feet
- 7 3,000 or more square feet
- 8 Don't know
- 9 Refused

**DE5 How many people live in your home year-round of the following age groups?**

For D5a – D5d:

- 8 Don't know
- 9 Refused

- DE5A**     \_\_\_\_\_     Less than 18 years old
- DE5B**     \_\_\_\_\_     19-34
- DE5C**     \_\_\_\_\_     35-59
- DE5D**     \_\_\_\_\_     60 or older

**DE6 Which of the following describes your educational background?**

- 1 Some high school
- 2 High school graduate
- 3 Trade or technical school
- 4 Some college
- 5 College graduate
- 6 Some graduate school
- 7 Graduate degree
- 8 Don't know
- 9 Refused

**DE7 Which of the following best represents your annual household income from all sources in 2000, before taxes? [READ]**

- 1 Less than \$20,000 per year
- 2 \$20,000-49,999
- 3 \$50,000-74,999
- 4 \$75,000-99,999
- 5 \$100,000 or more
- 8 Don't know
- 9 Refused

**DE8 Which of the following best describes your racial or ethnic background? [READ]**

- 1 Hispanic
- 2 African American
- 3 Caucasian
- 4 Asian American
- 5 Native American
- 6 Interracial
- 7 Other [SPECIFY: \_\_\_\_\_]
- 8 Don't know
- 9 Refused

**DE9** Approximately how much was your utility bill per month this past summer? Please include charges for both electricity and natural gas, if both apply to you.

- 1 \$1-\$25
- 2 \$26-\$50
- 3 \$51-\$100
- 4 \$101-\$150
- 5 \$151-\$200
- 6 \$201-\$300
- 7 \$301 +
- 8 Don't know
- 9 Refused

**DE9A** Approximately how much was your utility bill per month this past winter? Again, please include charges for both electricity and natural gas, if both apply to you.

- 1 \$1-\$25
- 2 \$26-\$50
- 3 \$51-\$100
- 4 \$101-\$150
- 5 \$151-\$200
- 6 \$201-\$300
- 7 \$301 +
- 8 Don't know
- 9 Refused

**RECORD RESPONDENT GENDER**

- 1 Female
- 2 Male

**END**

*Thank you for taking the time to complete this important survey! Have a great day/night!*