Final Report

Measurement and Evaluation of the 2003 Small Nonresidential Hard-to-Reach Programs

Program 0198.01

Prepared for:
Southern California Edison

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quantec

Prepared by:
M. Sami Khawaja
Sharon Baggett
Doug Bruchs
Quantec, LLC

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Quantec Offices

6229 SE Milwaukie Ave.
Portland, OR 97202
(503) 228-2992
(503) 228-3696 fax
www.quantecllc.com

1722 14th St., Suite 210
Boulder, CO 80302
(303) 998-0102
(303) 998-1007 fax

3445 Grant St.
Eugene, OR 97405
(541) 484-2992
(541) 683-3683 fax

28 Main St., Suite A
Reedsburg, WI 53959
(608) 524-4844
(608) 524-6361 fax

6 Ridgeland Rd
Barrington, RI 02806
(401) 289-0059
(401) 289-0287 fax

1038 E. Bastanchury Rd. #289
Fullerton, CA 92835-2786
(714) 626-0275
(714) 626-0563 fax

Printed on recycled paper

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Executive Summary

In May 2002, the California Public Utilities Commission (CPUC) authorized funding from the Public Goods Charge for selected "Local Programs" and stipulated program Evaluation, Measurement and Verification (EM&V) studies for each. This report provides the EM&V results, both process and impact analysis, for Southern California Edison's (SCE) Small Nonresidential Hard-to-Reach Program for program year 2003. The Program provides low- and no-cost energy saving opportunities to very small (under 20kW) hard-to-reach nonresidential customers, specifically economically disadvantaged businesses, through energy assessments and installation of no-cost energy-saving measures, primarily lighting.

The evaluation goals are:

- Verification of the number of measures installed and calculation of estimates of energy savings and demand reduction for 2003
- Assessment of the success in implementing the Program as designed
- Assessment of participants' satisfaction and the degree to which the Program influenced their businesses' energy efficiency

The process evaluation focused on an assessment of Program delivery and customer response. Data were collected through telephone interviews with staff and contractors, as well as on-site verification of measure installation and surveys with participants.

The impact evaluation was based on verification of measure installations through the on-site visits and consisted of making adjustments to the Program savings goals originally assumed in the Program Implementation Plans.

Key Results: Process

- Key Program changes included expanding the territory served and adding a third contractor, to accommodate this expansion.
- Staff and contractors felt that the Program process worked well and goals were easily achieved.
- Identifying customers through on-site cold calls to eligible businesses from lists provided by SCE, remained a successful approach; 91% of surveyed customers learned of the Program through this visit.
- Almost half of surveyed participants said "saving money" was the primary reason for their participation.
- More than three-quarters (80%) of participants surveyed said SCE's sponsorship of the Program was important in deciding to participate.

- While 23% of the respondents did not remember much about the audit form, 96% of those who did, rated the form as "very clear;" significantly more than half (68%) said the information provided on energy use in their business was "very useful." Similarly, more than half said the information was "very important" in their decision to install the lighting measures.
- Overall, 94% of the participants that remembered receiving general information describing the Program distributed during the initial visit described the information as "very clear." Again, approximately a quarter of the respondents did not recall receiving the materials.
- Participants expressed very high levels of satisfaction with the installation, including convenient scheduling and completion in a reasonable time frame, and 93% said they were "very satisfied" with the lighting (brighter and improved lighting quality were the most commonly cited improvements).
- Only 5% of surveyed participants said it was "very likely" that they would have installed the lighting measures in the absence of the Program; another 16% said it was "somewhat likely."
- Participants were asked to compare their level of understanding of how to improve energy efficiency in their business before and after participating in the Program. Nearly twice as many respondents rated their level as "high" or "fairly high" after completing the Program than before it.
- Contractors attribute Program success to targeting small businesses in need of energy improvements, making the process simple, and providing measures free of charge.

Key Results: Energy and Demand Impacts

To determine the total net energy and demand savings attributable to the Program, Quantec conducted on-site inspections of 51 randomly sampled projects. We then compared the inventory of measures taken during these inspections to the inventory of measures contained in the Program database for the same projects. The discrepancy between the two records was then used to determine the realization rate for each Program measure. These measure-specific realization rates were then extrapolated, again by measure type, to the entire population of participants.

Table ES.1 below compares:

a. The original program goal
b. The deemed impacts based on actual participation
c. The actual savings based on the site visit verification

As evident in the table, the realized vs. deemed realization rate for all Program measures was 94.4%. As a result total deemed savings from the Program database of 5,469,588 kWh is reduced by 5.6% to a savings of 5,164,126 kWh. Similarly adjusting the total gross demand reduction of 1,158 kW results in a final net demand reduction of 1,093 kW. Table ES.1 also compares the realized energy and demand savings with the Program's initial goals.[1] As evident in the table, the Program was able to realize 99.0% and 96.4% of its initial energy and demand goals, respectively[2].

Table ES.1: Energy and Demand: Goals and Realized

	Realized Impact	Actual Deemed Savings	Realized Vs. Deemed	Goal	Realized vs. Goal
Energy Savings (kWh)	5,164,126	5,469,588	94.4%	5,216,208	99.0%
Demand Savings (kW)	1,093	1,158	94.4%	1,134	96.4%

[1] As reported in the Interim Opinion on 2003 Statewide/Utility Local Energy Efficiency Programs and Other Studies, Decision 03-04-055 April 17, 2003.

[2] In addition, the realized savings energy and demand savings calculated in this study compare favorably to the 5,108 MWh and 1.08MW reported by SCE in 2004 Energy Efficiency Annual Report realized in May 2004.

I. Introduction

In December 2001, the California utilities (the Utilities) filed their Energy Efficiency Proposals for 2002 with the California Public Utilities Commission (CPUC). Part of the filing included plans for "Local Programs," (i.e., programs to be implemented only in their service territories rather than statewide). In May 2002, the CPUC authorized funding for selected programs delivered in 2002 and 2003 and stipulated the requirements of Evaluation, Measurement and Verification (EM&V) studies for funded programs.

This report provides the EM&V results, both process and impact analysis, for Southern California Edison's (SCE) 2003 Small Nonresidential Hard-to-Reach program (the Program). As Quantec also conducted the 2002 EM&V effort, where comparison across the two years was possible (and meaningful), we have included these in this report.

The Program

SCE's Small Nonresidential Hard-to-Reach program provides low- and no-cost energy-saving measures to very small (under 20 kW) hard-to-reach nonresidential customers, specifically economically disadvantaged businesses. The Program contractors, Catalina Ballast and Bulb Co., CRI Lighting Maintenance and Installation, and Express Energy Services, Inc., perform an assessment of the energy efficiency opportunities at each customer's facility. If the customer is interested, the contractors arrange to install the recommended equipment at no cost. Upon completion of the measure installation, SCE pays the contractor pre-established fees on a per-measure basis. SCE has historically conducted quality control audits on about 12% of the participating sites.

The Program operated essentially the same in 2003 as in 2002, with the only a few changes, including:

- Expanding to areas north of Los Angeles and the Central Valley
- Adding one contractor to serve these additional areas
- Making minor adjustments to the audit form

Evaluation Goals

The evaluation goals are:

- Verification of the number of measures installed and calculation of estimates of energy savings and demand reduction for 2003
- Assessment of the success in implementing the Program as designed

- Assessment of participants' satisfaction and the degree to which the Program influenced their businesses' energy efficiency

Report Format

Chapter II of this report outlines the evaluation methodology. Chapter III summarizes the results from the process evaluation, including the document review, interviews with stakeholders, and results of the surveys conducted with participants. Results of the impact analysis are presented in Chapter IV.

II. Methodology

Summary of Approach

Quantec staff reviewed appropriate Program materials and design documentation, performed interviews with key stakeholders, and conducted both on-site surveys and measure installation and verification with a sample of participating customers. The process evaluation focused on an assessment of Program delivery and customer response. Data were collected through the on-site surveys, using essentially the same survey protocol as in the 2002 EM&V process. The critical values for estimating Program impacts on energy usage and demand have already been stipulated in the Program Implementation Plans. As a result, the impact evaluation was limited to a review of the original assumptions and calculations and making adjustments to Program realization rates based on measure installations verified through the on-site visits.

Stakeholder Interviews

Interviews were conducted by phone with staff of two of the three Program contractors – Catalina Ballast and Bulb, Co., and CRI. Multiple attempts were made to reach Express Energy Services, Inc. without success. In addition, we submitted several series of questions to Program staff via electronic mail, allowing them to provide us with key information on Program design and delivery in 2003.

Site Visits

1. First, we organized the sites by zip code and alphabetically to ensure as complete distribution of sites as possible.
2. Next, we randomly selected 120 sites, which provided a primary site and two alternates. This provided adequate opportunity to meet the goal of 40 completed participant surveys and on-site inspections. Random selection also ensured that projects completed by each of the three contractors were represented in the sample.
3. During the site visits, Quantec successfully completed participant surveys and on-site inspections with 40 customers representing 44 projects. In addition seven on-site measures inspections were completed at locations willing to be inspected, but where the primary Program contact was not available at that time to complete the survey. As a result, a total of 51 projects were inspected. The distribution of sampled projects, by business type, is presented in Table II.1.

Table II.1: Participant Site Visits by Business Type[3]

Business Type	Frequency	Percent
Automotive	10	20%
Barber/Beauty Salon	6	12%
Food	5	10%
Medical	3	6%
Office	10	20%
Retail	10	20%
Service	7	14%
Overall	***51***	***100%***

During the unannounced site visits, Quantec staff conducted a comprehensive count of the measures installed as part of the Program. At each site, Quantec also attempted to conduct a survey of participants. As noted above, in some cases, it was possible only to complete an inspection; no survey was conducted. Site visits and/or inspections were terminated and an alternate site chosen for the following reasons:

- The appropriate contact for the survey was not available
- They were no longer in business
- Change in ownership
- Change in location

Analysis

Process

Analysis of the stakeholder interviews was conducted to identify emerging concepts and trends. We conducted statistical analysis of customer survey data, primarily the calculation of frequency of response categories, utilizing information gathered from the on-site participant surveys.

Impact

To determine the total net energy and demand savings attributable to the Program, Quantec performed on-site inspections of 51 randomly sampled projects and compared the inventory of measures taken during the inspections to those recorded in the Program database. The discrepancy between the two was then used to determine the Program's realization rate. The following details this process and provides further explanation regarding how the identification of missing and/or burned out measures impacted the savings analysis.

[3] These categories are not formal designations used by the utility, but reflect Quantec staff's assessment of the business type during the site visit.

First, the actual savings achieved at each of the 51 sampled projects was calculated based on the deemed per-unit savings and the number of verified Program-installed efficiency measures present at the location. If a compact fluorescent lamp (CFL) or LED exit sign had burned out, been replaced with an incandescent bulb/model, or not could not be located[4] during the on-site inspection, these measures and their deemed savings were deducted from the total Program savings.

The same was not true with regard to failed fluorescent tube lighting, as the retrofit included upgrading the magnetic ballast, which makes it inadvisable (and auditors inform the customer of this) to replace the new T8s with the previously used T12 lamp. Thus only three possibilities exist when one of the new T8s fails:

1. The failed bulb remains in the fixture (the lighting load actually lessens – though so do lighting levels)
2. The customer replaces the failed T8 with a T12 which in turn also burns out
3. The customer replaces the failed T8 with the only bulb that is compatible with retrofitted fixture – another T8

While burned out lamps are a concern with regard to customer satisfaction[5] and Program quality control, it does not impact the savings generated by the Program. The only rationale for reducing Program savings with regard to retrofitted fluorescent tube fixtures is if the number of actual retrofitted fixtures does not match the claimed number of retrofitted fixtures in the Program database.

Once the actual savings from each site was calculated, the realized savings from all 51 sampled projects was aggregated, by measure type, and compared to the Program's estimated savings (as recorded in the Program's participant database) for the same projects and measure types. The ratio of the aggregated verified savings and estimated savings provided a realization rate for each of the Program's three primary measure types: Fluorescent Tube Lighting, CFLs, and LED Exit Signs. The resulting realization rate calculated from the sample was then extrapolated, again by measure type, to the entire population of participants to determine the net energy and demand savings achieved by the Program.

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[4] Only one of the three contractors tracked the location of the installed measures. In the cases where measure location was not available and a CFL, T8 fixture or exit sign could not be initially be located, Quantec staff asked the primary contact at the business for assistance in locating the measure. Only if the contact was also unable to locate the measure did site visit staff classify the measure as missing and reduced the energy and demand savings associated with the particular measure.

[5] Quantec found a very small percentage of failed bulbs (<0.01%)

III. Process Evaluation Results

Stakeholder Views

Program Administration

As noted previously, the Program administration and implementation changed little from the first year, 2002. As in 2002, SCE solicited bids from contractors for program delivery, expanding the number of contractors from two to three, allowing the Program to more effectively serve a broader geographic region in 2003. Winning bidders and the regions they served included:

- Catalina Ballast and Bulb Co. (Inland Empire/Temecula)
- CRI Lighting Maintenance and Installation (High Desert)
- Express Energy Services, Inc. (La Canada/Central Valley)

Three Lighting measures were targeted: fluorescent tube lighting, incandescent lamps, and LED exit signs. These are measures most used by customers in this rate class.

Communication between the Program Manager and contractors was primarily conducted by telephone and e-mail, and as most had worked together before, no issues with communication were identified.

Outreach and Marketing

As in 2002, SCE provided the contractors with lists of eligible GS-1 customers. From this list, contractors made on-site cold calls to promote the Program to qualified customers "on the spot." As one contractor noted, "we can easily spot the type of business that is a good candidate for the Program." One contractor did note that he received many callbacks from those who initially refused. These were customers who had seen neighbor businesses participate and, as a result, changed their mind and wanted the measures. Another contractor estimated that about 30%-40% of those contacted chose to participate.

Customer Response

Each contractor interviewed said that the customers are positive about the Program, mentioning that when you are giving something away, and there is real need among the customers, it is not difficult to promote the Program. Customer satisfaction levels were perceived as high.

Database Concerns

While utilizing the database to calculate the net Program savings, Quantec staff found that some of the data had likely been merged incorrectly. The data from two of the contractors – those who gathered data only on the quantity of fixtures and not the quantity of lamps – had been incorrectly recorded in the data field as quantifying number of lamps, not fixtures. This error was verified by comparing the quantities of lamps and fixtures collected on-site to the quantities in the database.

Program Issues

No significant Program issues were identified for 2003. One contractor noted that his only concern was that the small Program size was hardly worth the effort and that this limitation made it difficult to keep staff to implement it. Another said that "a single contractor could easily have done the entire Program."

Lessons Learned

Contractors said that keeping the Program simple and easy to administer, free to customers, and targeting customers in need were key to the Program's success.

Survey Results

As shown in Figure III.1, the majority (91%) of participants learned about the Program through the door-to-door visits made by the contractor. While the reason that business's decided to participate varied, most agreed to participant with the intention of saving energy and money (Table III.1).

Figure III.1: How Participants Learned about Program

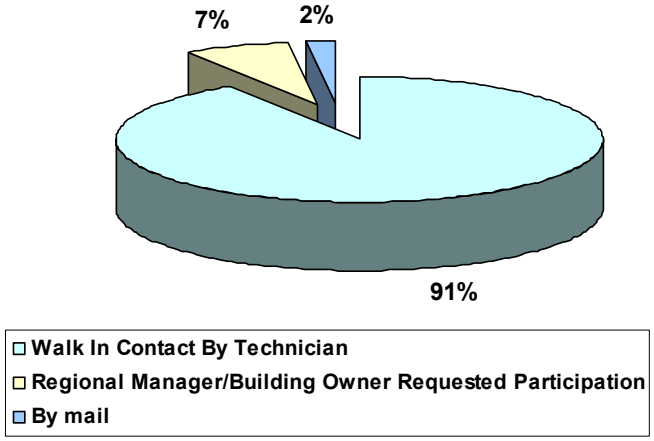
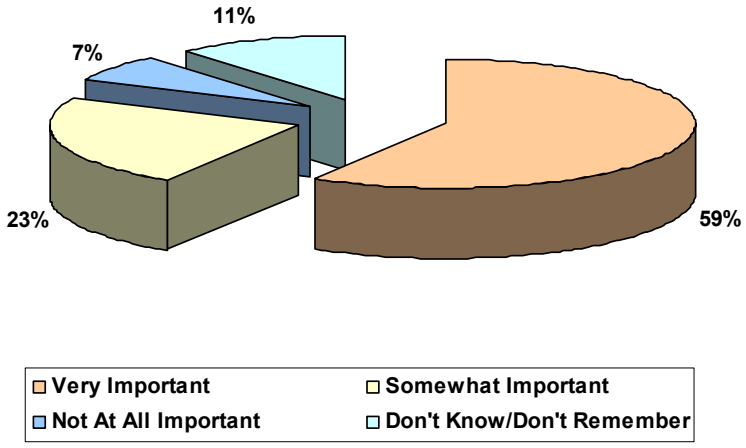


Table III.1: Reason Customer Decided to Participate in Energy Survey

Reason	Frequency	Percent
Save money	21	46%
Save energy	8	17%
To get free lighting	7	15%
Improve existing lighting	5	11%
Participation requested by regional manager/building owner	4	9%
Don't know/don't remember	1	2%
	46	***100%***

We then asked customers how important the utility's sponsorship was to their decision to participate. As shown in Figure III.2, more than 80% said it was "very important" or "somewhat important." Several participants noted that the utility's sponsorship had calmed initial concerns about participating in a "free" program and that the Utility's affiliation brought legitimacy to the offer.

Figure III.2: Importance of Utility Sponsorship in Customer's Participation Decision



In an effort to assess the effectiveness of the energy assessment, we asked customers to rate the clarity and usefulness of the information they received from the assessment, the usefulness of the form showing them potential savings from the new lighting measures, and the overall clarity of the information they received about the Program. Responses to these questions are summarized in Tables III.2 and III.3 and Figures III.3 and III.4. While nearly a quarter of the respondents did not remember much about the form, 94% of those that did remember said that the energy calculation form was "very clear" and significantly more than half (68%) said that the information on energy use in their business was "very useful." Similarly, more than half said that the information was "very important" in their decision to install the

lighting measures. Overall, most customers (77%) reported that the Program information was "very clear."

Table III.2: Ratings of Clarity of Energy Savings Calculation Form

Rating	Frequency	Percent
Very Clear	32	94%
Somewhat Clear	2	6%
	34	*100%*

* 10 respondents could not recall the audit/audit form (23% of the sample)

Table III.3: Ratings of Usefulness of Information on Energy Use in Business

Rating	Frequency	Percent
Very Useful	23	68%
Somewhat Useful	10	29%
Not At All Useful	1	3%
	34	100%

* 10 respondents could not recall the audit/audit form (23% of the sample)

Figure III.3: Ratings of Importance of Energy Calculation

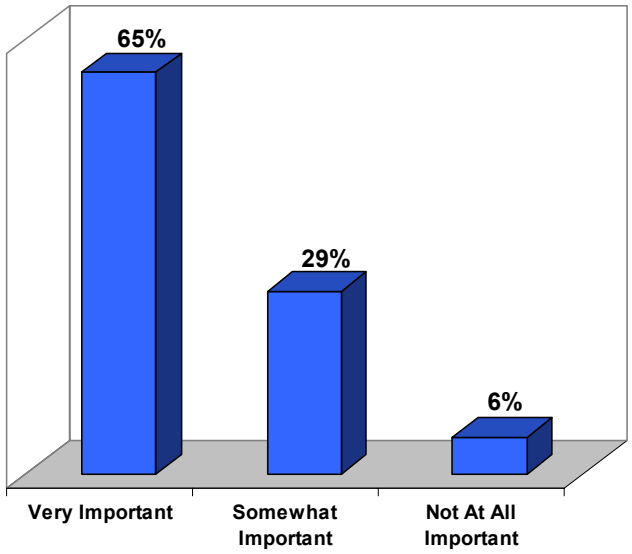
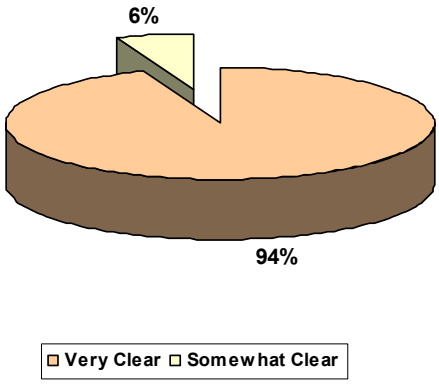


Figure III.4: Participants' Ratings of Clarity of Overall Program Information



As shown in Table III.4, 98% of surveyed customers said the energy assessment was completed at a convenient time, was completed in a reasonable amount of time, and none had any concerns with the assessment. The same positive responses were given in regard to the actual installation of the lighting equipment. In fact, when asked about the installation process, many participants remarked on the speed of the installation and commented on the professional nature of the installers.

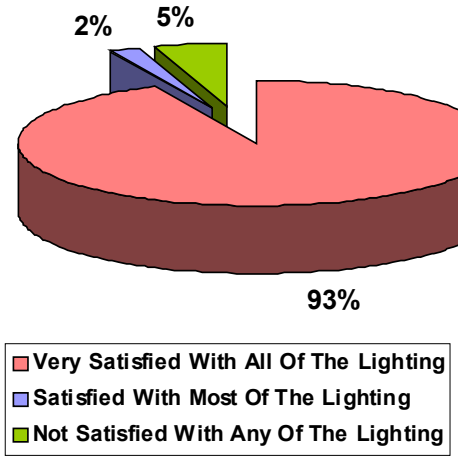
Table III.4: Evaluation of Aspects of Energy Assessment & Installation – SCE

Evaluation Component	Yes	No	Don't Know/ Don't Remember
Energy Assessment			
Completed at a convenient time	98%	0%	2%
Completed in reasonable length of time	98%	0%	2%
Concerns/issues with assessment	98%	0%	2%
Installation			
Scheduled at a convenient time	100%	0%	0%
Installer arrived on time	100%	0%	0%
Completed in a reasonable length of time	100%	0%	0%

The majority of customers (93%) said they were "very satisfied" with the lighting measures installed. The 5% answering "not at all satisfied" actually represents one participant with two projects. The participant's dissatisfaction stemmed from first, having to remove all the CFLs installed at one location because they did not fit properly in the fixtures and second, removing all the T8 and electronic ballasts installed next door after they burned out within a week of being installed. When asked, the respondent commented that he had

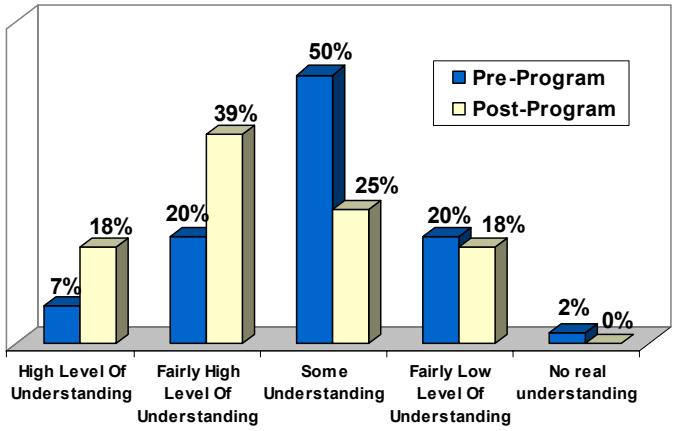
not contacted the Program or the contractor responsible for the installation to remedy the situation.

Figure III.5: Participant Satisfaction with Lighting



To assess the impact of the Program's educational component, we asked customers to rate their pre- and post-Program understanding of how to improve energy efficiency in their business. As shown in Figure III.6, the number of customers reporting either a "high" or "fairly high" level of understanding roughly doubled as a result of Program participation.

Figure III.6: Pre- and Post-Program Understanding Energy Efficiency in Business



Less than a third (25%) of surveyed customers said they had made some energy efficiency improvements prior to participating in this program, only 5% said they had previously participated in a utility-sponsored program, and

none reported having participated in any other programs since receiving the energy assessment and free equipment from SCE (see Tables III.5 and III.6).

Table III.5: Pre-Program Energy Improvements – SCE

	Frequency	Percent
Improvements Made?		
Yes	11	25%
No	33	75%
Total	44	100%
Type of Improvements*		
Purchased EE HVAC System	2	
Shut Down Equipment When Not In Use	2	
Consistently Remind Employees To Minimize Usage	1	
Diligent About Turning Off Lights	1	
Installed EE Building Shell Measures	1	
Installed Motion Sensors	1	
Lower Thermostat Settings	1	
Purchased Swamp Cooler Instead Of AC Unit	1	
Upgrade Ballasts	1	
Use Fans Instead of AC	1	

* Multiple responses possible.

Table III.6: Participants' Reported Participation in Other Utility Programs

Participation	Yes		No	
	Frequency	Percent	Frequency	Percent
Participated in other programs prior	2	5%	42	95%
Participated in other programs since	0	0%	44	100%

Of those who reported making no energy improvements before this Program, specific reasons cited for their inactivity include:

- Main Office pays energy bills (3)
- Did not know what else to do (5)
- Had not considered it (4)
- Had made improvements at home, but not at work (3)
- Not a concern (9)
- Did not have a lot of money available for improvements (1)
- Did not feel there was much to do in a small business (6)
- Had only recently moved to the location (2)

As shown in Table III.7, more than three quarters of participants (80%) said that it was "not at all likely" that they would have installed the lighting measures in the absence of the Program. Only 5% said it was "very likely" that they would have done so.

Table III.7: Likelihood Participant Would Have Installed the Lighting within the Next Two Years in Absence of Program - Freeridership

Rating	Frequency	Percent
Very likely	2	5%
Somewhat likely	7	16%
Not at all likely	35	80%
	44	***100%***

Less than half of the participants reported saving energy on their electric bills since participating in the Program (see Table III.8). Of those not reporting a visible savings, some noted that other factors such as rate increases, varied hours of operation, and the addition of other electric end uses made identifying savings attributable to the Program extremely difficult, if not impossible. We also asked customers if there were any other non-energy benefits from having the lighting measures installed. Their responses are summarized in Table III.9. As indicated, improved lighting quality and brighter light were the most commonly cited improvements.

Table III.8: Participants' Post-Program Savings on Energy Bill

Savings Noticed	Frequency	Percent
Yes	18	41%
No	5	11%
Don't Know/Not Sure	21	48%
	44	***100%***

Table III.9: Non-Energy Benefits of Lighting Measures

Benefits	Frequency
Brighter	15
Improved Light Quality	7
Not As Hot	3
Decreased Maintenance	2
Eliminated Buzzing Noise	2
Able To Use Less Lights	2

* Multiple responses possible

IV. Impact Evaluation Results

The energy and demand impact components were stipulated in the Program Implementation Plan (PIP), including wattage reduction, hours of use, and net-to-gross ratios. This evaluation was limited to verification of installation rates and assessment of corresponding realization rates.

The SCE Program had a total of 967 participants and 1,015 projects with a variety of energy-efficient lighting measures installed. A list of the measure groups and estimates of their associated savings (as provided by SCE) are provided in Table IV.4. The sample of 51 sites accurately reflects the types of measures installed across the Program population, as show in Table IV.1.

Table IV.1: Distribution of Savings in Site Visits and Population (kWh)

Measure	Sample Savings		Population Savings	
	N=51	Percent	n=1,015	Percent
2 Ft T8 Fixture	- - -	0.0%	515	<0.001%
4 Ft T8 Fixture	136,345	75.0%	3,930,405	71.9%
8 Ft T8 Fixture	9,525	5.2%	212,993	3.9%
Compact Fluorescent Lamps	33,769	18.6%	1,187,151	21.7%
High Output T5	- - -	0.0%	2,688	0.05%
LED Exit Signs	1,782	1.0%	123,265	2.3%
U-Tube T8	426	0.2%	12,571	0.2%
Total	***181,848***	***100.0%***	***5,469,588***	***100.0%***

No 2ft T8 fixtures or High Output T5 fixtures were installed at the sample locations.

As evident in Table IV.2, with the exception of CFLs, Quantec staff found a very high rate of consistency between reported savings (Program database) and savings verified during site visits. Despite a realization rate of 82.1% for CFLs, the Program overall had a realization rate of 94.9% for the 51 sampled projects. For the CFLs, site visits revealed two key types of discrepancies: fewer fixtures found than recorded by the contractor and removal of CFLs due to ill-fit, burn out, or dissatisfaction. In contrast to 2002 realization rates of 70% for CFLs, 2003's rate of 82% is a notable improvement.

As noted previously, only one of the contractors kept a record of where measures were installed. In larger buildings it is can be hard, even with the contact's assistance, to find measures without knowing the location – particularly CFLs that are often installed in closets, utility rooms, or other more elusive spaces. Quantec highly recommends that in the future SCE require all contractors track the location of installations in the future. Doing so may lead to higher realization rates for future programs.

Table IV.2: Verification of Installation by Measure

Measure	Claimed	Verified	Percent
4 Ft T8 Fixture	136,345	133,384	97.8%
8 Ft T8 Fixture	9,525	9,169	96.3%
CFLs	33,769	27,735	82.1%
LED Exit Signs	1,782	1,782	100.0%
U-Tube T8	426	426	100.0%
Total	***181,848***	***172,497***	***94.9%***

No 2ft T8 fixtures or High Output T5 fixtures were installed at the sample locations.

To determine the overall net energy and demand impacts for the Program, the realization rates determined for the sample were applied to the total expected (gross) savings for each of the measures. Table IV.3 shows the results of this analysis.

Table IV.3: Gross and Net Energy Savings

Measure	Realization Rate	Gross Savings (kWh)	Net Savings (kWh)	Gross Savings (kW)	Net Savings (kW)
2 Ft T8 Fixture	100.0%	515	515	0.1	0.1
4 Ft T8 Fixture	97.8%	3,930,405	3,845,037	842.3	824.0
8 Ft T8 Fixture	96.3%	212,993	205,031	45.5	43.8
CFLs	82.1%	1,187,151	975,019	253.4	208.1
High Output T5	100.0%	2,688	2,688	0.6	0.6
LED Exit Signs	100.0%	123,265	123,265	14.1	14.1
U-Tube T8	100.0%	12,571	12,571	1.9	1.9
Total	***94.4%***	***5,469,588***	***5,164,126***	***1,157.9***	***1,092.6***

* Since no 2 Ft T8 Fixtures or High Output T5s were included in the sample, their realization rate is 100%.

Table IV.4 below compares:

a. The original program goal

b. The deemed impacts based on actual participation

c. The actual savings based on the site visit verification:

As evident in the table, the realized vs. deemed realization rate for all Program measures was 94.4%. As a result total deemed savings from the Program database of 5,469,588 kWh is reduced by 5.6% to a savings of 5,164,126 kWh. Similarly adjusting the total gross demand reduction of 1,158 kW results in a final net demand reduction of 1,093 kW. Table IV.4 also compares

the realized energy and demand savings with the Program initial goals[6]. As evident in the table, the Program was able to realize 99.0% and 96.4% of its initial energy and demand goals, respectively.[7]

Table IV.5: Energy and Demand: Goals and Realized

	Realized Impact	Actual Deemed Savings	Realized Vs. Deemed	Goal	Realized vs. Goal
Energy Savings (kWh)	5,164,126	5,469,588	94.4%	5,216,208	99.0%
Demand Savings (kW)	1,093	1,158	94.4%	1,134	96.4%

[6] As reported in the Interim Opinion on 2003 Statewide/Utility Local Energy Efficiency Programs and Other Studies, Decision 03-04-055 April 17, 2003.

[7] In addition, the realized savings energy and demand savings calculated in this study compare favorably to the 5,108 MWh and 1.08MW reported by SCE in 2004 Energy Efficiency Annual Report realized in May 2004.

Appendix A. Interview Guide and Customer Surveys

Name: _____ Title: _____
Date: _____ Interviewer: _____
Entered/formatted: _____ File name: _____

Interview Guide: Stakeholders - Contractors

SCE: Small Non-Residential Hard-to-Reach Program (Small Business Energy Advantage)

Program Design

1. What was your role in 2003 (last year) year in implementing this program?
2. What are your current responsibilities?
3. How was communication between all parties conducted? To what extent was this effective in 2003?
4. IMPLEMENTERS ONLY: What motivated you to apply to implement (or continue implementing) the program?

Program Goals and Objectives

1. To what extent were the goals reasonable, given budgets, timeline, and history with these market sectors?
2. How would you characterize your experience of identifying qualified customers in 2003? (For those involved in 2002 – did this change at all from earlier years?)

Program Success

1. The method of program implementation – using three geographically focused contractors – was key to meeting program goals. How did this work in practice?
2. How was the program marketed last year?
3. What has been the response of customers to these marketing efforts?
4. Did the program meet established goals and objectives last year?
   a. If yes, what elements contributed to program success? Were there specific components of the program that were especially successful?
   b. What were some significant contributions of the parties involved that led to the programs' successes/bottlenecks?
   c. What aspects, if any, were not as successful as envisioned?
   d. Could these be improved? If so, how?

e. If no, what barriers existed to achieving these goals/objectives? How have these barriers been addressed this year (2004)?

Overall Implementation

1. Have any examples of best practices for implementing the programs emerged?
2. Are there aspects of the program you would change to improve it in the future?
3. Do you have any other comments?

SCE Local Non-Residential Small Business Lighting Retrofit Program

Participant Survey

1. First, I'd like to ask how you learned about this program? [*Do not read, check all that apply*]

   - ❑ Walk in contact by technician
   - ❑ From a friend or business contact (word-of-mouth)
   - ❑ Other (Specify): _____

1a. If more than one – which was most effective in encouraging you to participate? [*Select one from list given in Q.1*]

   - ❑ Walk in contact by technician
   - ❑ From a friend or business contact (word-of-mouth)
   - ❑ Other (Specify): _____

2. Why did you decide to participate in the energy survey?

   - ❑ Understand more about how energy costs are determined
   - ❑ Learn more about ways to reduce energy costs
   - ❑ To get free lighting and other equipment
   - ❑ A neighboring business or friend participated
   - ❑ Competing business participated
   - ❑ Technician indicated that the energy survey would help me
   - ❑ Other (Specify):_____

The technician provided you information to help you understand energy costs and ways to manage them. I'd like to ask you to rate this information.

3. First, the technician used a form to show you specific information about energy use in your business and how you could save energy. How clear was this information? Would you say it was:

   - ❑ Not at all clear
   - ❑ Somewhat clear
   - ❑ Very clear
   - ❑ Don't know/don't remember (do not read)

4. How useful was this information about energy use in your business? Would you say it was:

   - ❑ Not at all useful
   - ❑ Somewhat useful
   - ❑ Very Useful
   - ❑ Don't know/don't remember (do not read)

5. How important was the information on this form in helping you decide to install the new equipment? Would you say it was?
   - ❑ Not at all important
   - ❑ Very Somewhat important
   - ❑ Very important
   - ❑ Don't know/don't remember (do not read)

6. Second, the technician provided information about the Small Business Lighting Retrofit and the free equipment that could be installed in your business. How clear was this information? Would you say it was:
   - ❑ Not at all clear
   - ❑ Somewhat clear
   - ❑ Very clear
   - ❑ Don't know/don't remember (do not read)

Now, I'd like to ask you a few questions about the technician's visit to your business.

7. Was the energy survey completed at a time that was convenient to you?
   - ❑ Yes
   - ❑ No
   - ❑ Don't know/don't remember

8. Did the technician complete the energy survey in a reasonable length of time?
   - ❑ Yes
   - ❑ No
   - ❑ Don't know/don't remember

9. Did you have any issues or concerns with the energy survey?
   - ❑ Yes
   - ❑ No [GO TO Q.10]
   - ❑ Don't know/don't remember [GO TO Q.10]

   What were these issues? _____
   _____
   _____

10. Before you participated in this program, what was your understanding of how to improve your business's energy efficiency? Would you say that you had a:
    - ❑ High level of understanding
    - ❑ Fairly high level of understanding
    - ❑ Some understanding
    - ❑ Fairly low level of understanding
    - ❑ No real understanding

11. After participating in the energy survey, how would you rate your understanding of how to improve your business's energy efficiency? Would you say that you have a:
    - ❑ High level of understanding
    - ❑ Fairly high level of understanding
    - ❑ Some understanding
    - ❑ Fairly low level of understanding
    - ❑ No real understanding

Now, I would like to ask you about the installation of the lighting equipment.

12. Was the installation of equipment scheduled at time that was convenient to you?
    - ❑ Yes
    - ❑ No
    - ❑ Don't know/Don't remember

13. Did the installer arrive at the agreed upon time?
    - ❑ Yes [GO TO Q. 14]
    - ❑ No
    - ❑ Don't know/Don't remember [GO TO Q. 14]

13a. Did they call you to inform you of the change in time?
    - ❑ Yes
    - ❑ No
    - ❑ Don't know/Don't remember

14. Did the installer complete the installation in a reasonable length of time?
    - ❑ Yes
    - ❑ No
    - ❑ Don't know/Don't remember

15. How much of the lighting equipment installed is operating in your business at this time?
    - ❑ All (GO TO 15b)
    - ❑ Some
    - ❑ None

15a. For those not operating: why is this equipment not operating at this time?

_____

_____

_____

15b. How satisfied have you been with the lighting installed in your business? Would you say:

- ❑ Very satisfied with all of the lighting
- ❑ Satisfied with most of the lighting
- ❑ Satisfied with only some of the lighting
- ❑ Satisfied with very little of the lighting
- ❑ Not satisfied with any of the lighting

15c. What is the likelihood that you would have installed the lighting within the next two years if this program had not been available?

- ❑ Very likely
- ❑ Somewhat likely
- ❑ Not at all likely
- ❑ Don't know/Not sure

16. Have you noticed savings on your energy bill?

- ❑ Yes
- ❑ No

17. In addition to savings on your bill, what other benefits, if any, have you seen from the new lighting that was installed?

_____

_____

_____

18. Had you made energy savings improvements in your business prior to participation in these programs?

- ❑ Yes
- ❑ No [GO TO Q. 18b]

18a. What improvements had you made? _____

_____

18b. Why had you not made improvements before?_____

_____

19. Have you participated in any SCE programs prior to this one?

- ❑ Yes
- ❑ No [GO TO Q. 20]

19a. Which programs?

_____

_____

20. Have you participated in any SCE programs since you received the energy survey and free equipment?
- ❑ Yes
- ❑ No [GO TO Q.21]

20a. Which programs? _____

_____

21. In deciding to have the energy survey and install the lighting, how important was it to you that SCE was providing the program?
- ❑ Very important
- ❑ Somewhat important
- ❑ Not at all important
- ❑ Don't know/not sure

Before we end, I'd like to ask about your energy use.

22. What are the main uses of energy in your business?
- ❑ Lighting
- ❑ Air conditioning
- ❑ Refrigeration
- ❑ Cooking
- ❑ Other (Specify _____)

22b. For each listed: What fuel is used to power this use? _____

_____

_____

23. What other factors affect how you use energy in your business?

_____

_____

24. Do you have any comments or suggestions about the Small Business Lighting Retrofit Program?

_____

_____

_____