

Measurement and Evaluation of Three 2002 Programs:

- 1. SDG&E Nonresidential Small Business Energy Assessment**
- 2. SDG&E Nonresidential Retrofit EZ Turnkey**
- 3. SCE Small Nonresidential Hard to Reach Lighting Retrofit**

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Table of Contents

Executive Summary	ES-1
Key Results: Process.....	ES-1
Key Results: Energy and Demand and Impacts.....	ES-4
Summary	ES-5
I. Introduction	I-1
The Programs	I-1
Evaluation Goals.....	I-2
Report Format	I-2
II. Methodology	II-1
Summary of Approach.....	II-1
Stakeholder Interviews.....	II-1
Customer Surveys	II-1
Site Visits.....	II-2
Analysis.....	II-3
III. Process Evaluation Results.....	III-1
SDG&E	III-1
SCE	III-13
IV. Impact Evaluation Results	IV-1
SDG&E.....	IV-1
SCE	IV-3
V. Conclusions	V-1
Appendix A. Interview Guide and Customer Surveys	A-1
SCE Local Non-Residential Small Business Lighting Retrofit Program.....	A-1
SDG&E Local Non-Residential Small Business Energy Assessment and EZ Turnkey	A-7
Interview Guide: Stakeholders.....	A-15
SDG&E [SCE] Local Non-Residential Small Business Energy Assessment and EZ Turnkey	A-19
SDG&E [SCE] Local Non-Residential Small Business Energy Assessment and EZ Turnkey	A-23
Appendix B. Site Visit Sample/Population: Comparison by Type of Business.....	B-1
Appendix C. Cross-Utility Data	C-1
Participants.....	C-1
Nonparticipants, Types 1 and 3	C-8
Nonparticipants, Type 2.....	C-12

Tables & Figures

Executive Summary	ES-1
Table ES.1: SDG&E Energy and Demand: Goals and Realized	ES-4
Table ES.2: SCE Energy and Demand: Goals and Realized	ES-5
I. Introduction	I-1
II. Methodology	II-1
Table II.1: Survey Completions	II-2
Table II.2: Site Visit Summary	II-2
Table II.3: Participant Business Types: SDG&E & SCE Site Visits	II-3
III. Process Evaluation Results.....	III-1
Figure III.1: How Participants Learned about Program – SDG&E	III-5
Table III.2: Reason Customer Decided to Participate in Energy Survey - SDG&E	III-5
Table III.3: Importance of Utility Sponsorship of Program in Customer’s Participation Decision – SDG&E.....	III-5
Table III.4: Ratings of Clarity of Energy Savings Calculation Form – SDG&E	III-6
Figure III.2: Ratings of Usefulness of Information –SDG&E.....	III-6
Figure III.3: Ratings of Importance of Energy Calculation Information – SDG&E.....	III-7
Table III.5: Ratings of Clarity of Overall Program Information – SDG&E	III-7
Table III.6: Evaluation of Aspects of Energy Assessment & Installation – SDG&E.....	III-7
Figure III.4: Satisfaction with Lighting Installed – SDG&E.....	III-8
Figure III.5: Pre- and Post-Program Understanding of Energy Efficiency in Business – SDG&E.....	III-8
Table III.7: Participants’ Pre-Program Energy Improvements – SDG&E	III-9
Table III.8: Reported Participation in Other Utility Programs – SDG&E	III-9
Table III.9: Likelihood Participant Would Have Installed Lighting within the Next Two Years in Absence of Program (Freeridership) – SDG&E.....	III-10
Table III.10: Post-Program Savings on Energy Bill – SDG&E.....	III-10
Table III.11: Other Benefits of Lighting Measures- SDG&E*	III-10
Table III.12: Participants’ End-Uses – SDG&E	III-11
Table III.13: Participants’ Fuel by End-Use – SDG&E	III-11
Figure III.6: Energy Actions in Business Taken by Nonparticipants – SDG&E	III-12

Figure III.7: Nonparticipants Rating of Understanding of How to Improve Energy Efficiency in Their Business – SDG&E	III-12
Table III.14: Reasons for Nonparticipation – SDG&E.....	III-13
Figure III.8: How Participants Learned about Program - SCE.....	III-16
Table III.15: Reason Customer Decided to Participate in Energy Survey - SCE.....	III-16
Figure III.9: Importance of Utility Sponsorship in Customer’s Participation Decision - SCE	III-17
Table III.16: Ratings of Clarity of Energy Savings Calculation Form - SCE	III-17
Table III.17: Ratings of Usefulness of Information on Energy Use in Business - SCE	III-17
Figure III.10: Ratings of Importance of Energy Calculation - SCE	III-18
Figure III.11: Participants’ Ratings of Clarity of Overall Program Information - SCE.....	III-18
Table III.18: Evaluation of Aspects of Energy Assessment & Installation – SCE	III-19
Figure III.12: Participant Satisfaction with Lighting Installed – SCE	III-19
Figure III.13: Pre- and Post-Program Understanding Energy Efficiency in Business - SCE.....	III-20
Table III.19: Pre-Program Energy Improvements - SCE.....	III-20
Table III.20: Participants’ Reported Participation in Other Utility Programs – SCE.....	III-21
Table III.21: Likelihood Participant Would Have Installed the Lighting within the Next Two Years in Absence of Program - Freeridership - SCE	III-21
Table III.22: Participants’ Post-Program Savings on Energy Bill - SCE	III-21
Table III.23: Participants’ Other Benefits of Lighting Measures- SCE	III-22
Table III.24: Participants’ End-Uses - SCE.....	III-22
Table III.25: Participants’ Fuel by End-Use - SCE	III-22
Table III.26: Energy Actions in Business Taken in Business by Nonparticipants – SCE.....	III-23
Figure III.14: Nonparticipants Rating of Understanding of How to Improve Energy Efficiency in Their Business – SCE	III-23
Table III.27: Program Material Left with Nonparticipants – SCE ...	III-24
Table III.28: Reasons for Nonparticipation – SCE Type 1 and 3.....	III-24

IV. Impact Evaluation Results IV-1

Table IV.1: Distribution of Installed Measures in Site Visits and Population – SDG&E.....	IV-1
Table IV.2: Verification of Installation by Measure – SDG&E	IV-2
Table IV.3: Energy and Demand: Goals and Realized – SDG&E	IV-2

Table IV.4: Distribution of Installed Measures in Site Visits and Population - SCE.....	IV-3
Table IV.5: Verification of Installation by Measure – SCE	IV-3
Table IV.6: Energy and Demand: Goals and Realized – SCE.....	IV-4

V. Conclusions V-1

Appendix A. Interview Guide and Customer SurveysA-1

Appendix B. Site Visit Sample/Population:

Comparison by Type of Business.....B-1

Table B.1: Participant Business Type.....	B-1
---	-----

Appendix C. Cross-Utility DataC-1

Table C.1 How did you learn about the program?.....	C-1
---	-----

Table C.2 Why did you decide to participate in the energy survey?.....	C-1
--	-----

Table C.3 How clear was the form used by the technician to calculate your potential savings?	C-1
--	-----

Table C.4 How useful was this information about energy use for your business?.....	C-2
--	-----

Table C.5 How important was the information on this form in helping you decide to install the new equipment?	C-2
--	-----

Table C.6 How clear was the information presented to you about the Small Business Lighting Retrofit Program?	C-2
--	-----

Table C.7 Was the survey completed at a time that was convenient to you?	C-3
--	-----

Table C.8 Did the technician complete the energy survey in a reasonable length of time?	C-3
---	-----

Table C.9 Did you have any issue or concerns with the energy survey?	C-3
--	-----

Table C.10 Before you participated in this program, what was your understanding of how to improve your business's energy efficiency?.....	C-3
---	-----

Table C.11 After you participated in this program, what was your understanding of how to improve your business's energy efficiency?.....	C-4
--	-----

Table C.12 Was the installation of equipment scheduled at a time that was convenient to you?.....	C-4
---	-----

Table C.13 Did the installer arrive at the agreed upon time?	C-4
--	-----

Table C.14 Did they call to inform you of the change in time?.....	C-4
--	-----

Table C.15 Did the installer complete the installation in a reasonable length of time?	C-5
--	-----

Table C.16 How much of the lighting equipment installed is operating in your business at this time?.....	C-5
--	-----

Table C.17 How satisfied have you been with the lighting installed in your business?	C-5
--	-----

Table C.18 What is the likelihood that you would have installed the lighting within the next two years if this program had not been available?.....	C-5
Table C.19 Have you noticed savings on your energy bill?	C-6
Table C.20 Had you made energy savings improvements in your business prior to participation in the program?.....	C-6
Table C.21 Have you participated in any utility sponsored programs before?	C-6
Table C.22 Have you participated in any utility sponsored programs since you received the energy survey and free equipment?.....	C-6
Table C.23 In deciding to participate, how important was it to you that your utility was providing the program?.....	C-7
Table C.24 Participant End-Uses.....	C-7
Table C.25 Participant Fuel Type by End-Use	C-8
Table C.26 Have you taken any actions in the past two years to conserve energy at your business?	C-8
Table C.27 What actions have you taken in the past two years to conserve energy at your business?.....	C-9
Table C.28 How would you rate your understanding of how to improve your business's energy efficiency?	C-9
Table C.29 Did the technician leave information with you about the program?	C-9
Table C.30 How clear was this information?.....	C-10
Table C.31 What is the main reason you chose not to have the energy survey and install the equipment offered?.....	C-10
Table C32 Would you be interested in participating if this program were offered again?	C-10
Table C.33 Non-Participant End-Uses.....	C-11
Table C.34 Participant Fuel Type by End-Use	C-11
Table C.35 Have you taken any actions in the past two years to conserve energy at your business?	C-12
Table C.36 What actions have you taken in the past two years to conserve energy at your business?.....	C-12
Table C.37 How would you rate your understanding of how to improve your business's energy efficiency?	C-13
Table C.38 Non-Participant End-Uses.....	C-13
Table C.39 Participant Fuel Type by End-Use	C-14

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 three programs: San Diego Gas & Electric’s (SDG&E) Small Business Energy Assessment and EZ Turnkey Program and Southern California Edison’s (SCE) Small Nonresidential Hard to Reach Program. All three programs attempt to provide energy savings opportunities to economically disadvantaged, small, hard-to-reach customers through energy assessments and installation of free 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 2002
- Assessment of the success in implementing the programs as designed
- Assessment of participants’ satisfaction and the degree to which the programs influenced their businesses’ energy efficiency

Using interviews with utility staff and contractors, customer surveys, and site visits to verify installations, Quantec conducted both a process and impact evaluation of these programs. While both programs targeted similar end-users and provided lighting measures, there were differences in the demographics of the communities served and in the mechanisms of program delivery, which limited direct program comparisons in our analysis.

Key Results: Process

San Diego Gas & Electric

Customer Response and Profiles

- Almost three-quarters of SDG&E participants surveyed said utility sponsorship of the programs was “very important” in their decision to participate.
- Surveyed participants report high levels of satisfaction with the energy assessment, installation, and the lighting measures.
- Participants’ post-program rating of their understanding of how to improve energy efficiency in their business increased, with those

rating their understanding as high or fairly high at 33% pre-program and 74% post-program.

- Fifty-nine percent of surveyed participants reported post-program energy savings on their bills.
- When asked why they did not participate, SDG&E nonparticipants most commonly responded that the Program did not apply to their business or that they had already installed lighting measures. A higher percentage of SDG&E nonparticipants reported “a high level of understanding” of how to improve energy efficiency in their business than were participants (pre-program).
- Nonparticipants with no exposure to the program were more likely to report having taken energy actions in their businesses than were nonparticipants approached about the program (but not participating) or participants. Actions taken included: installing energy efficient lighting, replacing old equipment with energy efficient models, and making behavior changes.

Contractor Delivery. SDG&E used one contractor for energy assessments and another for the installation of lighting measures. SDG&E stakeholders felt that having two different contractors provided a higher quality, and perhaps more costly, service, as well as a system of “checks and balances.” Surveyed customers key responses regarding program delivery included:

- The majority of SDG&E customers gave “to learn more about energy efficiency in their business” as the main reason they chose to participate, reflecting the approach taken by the assessment contractors to “sell the program as one of many ways to save energy.”
- More than 90% of surveyed customers reported that the energy assessments were completed at a convenient time and in a reasonable length of time. More than 90% also reported that the installer arrived on time and completed the installation in a reasonable length of time.

Best Practices. Program attributes cited by stakeholders as best practices were:

- Starting with a targeted customer base and using door-to-door, cold calls to reach customers
- Having utility sponsorship to lend credibility to the program
- Delivering energy assessment and installation through two separate contractors, providing checks and balances
- Keeping the program simple and free of charge

- Ensuring high quality measures for installation, focus on lighting, and rapid installation following assessment
- Flexibility in meeting customer needs
- Use of the Track-It-Fast Database

Southern California Edison

Customer Response and Profiles

- Eighty-one percent of SCE participants surveyed said utility sponsorship of the programs was “very important” in their decision to participate.
- Surveyed participants report high levels of satisfaction with the energy assessment, installation, and the lighting measures
- Participants’ rating of their understanding of how to improve energy efficiency in their business increased, with those rating their understanding as high or fairly high at 30% pre-program and 60% post-program.
- Fifty-one percent of surveyed participants reported post-program energy savings on their bills.
- When asked why they did not participate, SCE nonparticipants most commonly responded that they did not remember being contacted or something interfered with participation.
- Nonparticipants with no exposure to the program were more likely to report having taken energy actions in their businesses than were nonparticipants approached about the program (but not participating) or participants. Actions taken included: installing energy efficient lighting and making behavior changes.

Contractor Delivery. SCE used two contractors conducting both assessments and installations. SCE stakeholders felt that one firm doing all steps simplified the implementation process by minimizing intrusion on customers.

- The majority of SCE customers gave “to get free lighting” as the main reason they chose to participate.
- More than 90% of surveyed customers reported that the energy assessments were completed at a convenient time and in a reasonable length of time. More than 90% also reported that the installer scheduled the installation at a convenient time and completed it in a reasonable length of time.

Best Practices. Program attributes cited by stakeholders as best practices were:

- Starting with a focused customer list for marketing
- Having installations available to meet customers’ schedules
- Having utility sponsorship to lend credibility to the program
- Keeping the program simple and free of charge
- Clearly defined technologies and scope of work

Key Results: Energy and Demand and Impacts

Using the stipulated values for wattage reduction and hours of use, original saving estimates for the visited sites were reassessed based on the verified installation. Realization rates – ratio of verified to reported savings – were then estimated for each visited site. Realization rates, by measure type, were then extrapolated to the entire population of participants.

San Diego Gas & Electric

Based on site visit data for SDG&E, the verified rate of installation for all measures was 100%. Using this realization rate, the SDG&E reported energy savings of 3,582,665 kWh and reported total net demand reduction of 683 KW (as of December 2002) are correct within the limits of statistical accuracy achievable in the verification process. SDG&E exceeded its program goals for both demand and energy savings as shown in Table ES.1.

Table ES.1: SDG&E Energy and Demand: Goals and Realized

	Goal	Realized	Realized vs. Goal
Energy Savings	3,090,842 kWh	3,582,665 kWh	116%
Demand Savings	532 kW	683 kW	128%

SCE

With the exception of “Compact Fluorescent Lamps,” we found a very high rate of consistency between reported installations (program database) and those verified during site visits for SCE. The verified installation rate for all measures was 91%. Based on this realization rate, the SCE reported savings of 3,160,387 kWh are reduced by 9% to 2,875,952 kWh. As of December 2002, SCE reported total net demand reduction of 670 kW. Modifying this by 9% provides a realized demand reduction of 610 kW. (Non-CFL retention realization rate was 99% overall.) Even with the somewhat reduced realization

rate, SCE exceeded its program goals for both demand and energy savings, as shown in Table ES.2.

Table ES.2: SCE Energy and Demand: Goals and Realized

	Goal	Realized	Realized vs. Goal
Energy Savings	2,569,570 kWh	2,875,952 kWh	112%
Demand Savings	529 kW	610 kW	115%

Summary

The evaluation results, from both surveys and site visits, indicate that these first year programs, designed to provide energy savings for very small businesses, were successful in many ways. Participants in both programs expressed high levels of satisfaction with all program components and reported an increase in their knowledge of energy efficiency in their business as a result of participation. Nonparticipants reported higher levels of knowledge of energy efficiency and having taken energy efficiency actions in their businesses than did participants (prior to the program.)

SDG&E staff felt that using two separate contractors, one for assessment and one for installation, provided necessary “checks and balances” for quality control and gave focus to the educational component of the program. SCE staff felt that using a single contractor to deliver both program components minimized intrusion on their customers’ time and business functions. Participants in both programs, regardless of delivery type, expressed high levels of overall satisfaction. Differences found between them included: SDG&E customers more often than SCE customers cited their reason for participation as wanting to learn more about energy efficiency (SCE customers more often said “to receive free bulbs”); and SCE participants gave somewhat lower ratings of satisfaction with the installer’s timeliness than did SDG&E participants.

Both utilities learned more about the eligible customer base for programs of this type. As a result, SDG&E has revised the energy assessment and educational component that focuses on energy actions that customers can take beyond lighting to better reflect the end uses and behaviors of the types of businesses participating. While lighting is clearly the measure that provides the most savings to small businesses, the longer-term goal of changing awareness of energy efficiency in the businesses is enhanced when customers learn of the many ways in which they can save energy.

Self-reported freeridership is low, with few participants reporting they would have installed the measures in the absence of either of the programs. Both programs exceeded their energy and demand savings goals. Staff reported that

the programs could easily serve many more customers, the measures were clearly those needed by the small business customers, and the need for the programs is evident from the response levels in the first year of implementation.

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, and stipulated the requirements for program Evaluation, Measurement and Verification (EM&V) studies for funded programs.

This report provides the EM&V results, both process and impact analysis, for three programs – two through San Diego Gas & Electric (SDG&E) and one from Southern California Edison (SCE). While these are separate utility programs with slightly different delivery mechanisms they are similar in target audience, the market barriers addressed, and “local program” designation. The CPUC felt that the similarities justified combining them into one EM&V report. However, while both programs targeted similar end-users and provided lighting measures, there were differences in the demographics of the communities served and in the mechanisms of program delivery, which limited direct program comparisons in our analysis.

The Programs

All three programs attempt to provide energy savings opportunities to economically disadvantaged, small, hard-to-reach customers by addressing the following barriers:

- First cost
- Availability of measures
- Lack of credible information
- Language and ethnic barriers

SDG&E’s Small Business Energy Assessment Program

The Small Business Energy Assessment (SBEA) program provides energy audits to very small (less than 20 kW) hard-to-reach nonresidential customers. Onsite audits, performed by Power Logic, provide an assessment of energy consumption and result in proposals of energy-saving opportunities. During the audit, some low- and no-cost measures are installed. Customers interested in additional measures are scheduled through the EZ Turnkey Program. These additional measure installations are handled through American Lighting. Contractor payment is based on pre-established fees on a per-measure basis.

SDG&E’s EZ Turnkey Program

The EZ Turnkey program is designed to increase adoption of energy-efficient measures identified in the SBEA program. Only SBEA participants are

eligible to receive program benefits. SBEA customers are given a list of free program-eligible measures. The assessment contractor, Power Logic, enters the authorized measures into the program database and American Lighting contacts the customer to set up an appointment for installation. The program database, to which the EZ Turnkey lighting contractor has access, is updated daily. As soon as the measures are installed, the contractor updates the database to reflect actual installation. SDG&E conducts quality control audits on 20% of the participating sites.

SCE's Small Nonresidential Hard to Reach Program

This 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 Lighting and CRI, perform an assessment of the energy efficiency opportunities at each customer's facility and then, if the customer is interested, arrange to install the recommended equipment at no cost to the customer. Upon completion of the measure installation, SCE pays the contractor pre-established fees on a per-measure basis. SCE conducts quality control audits on about 12% of the participating sites.

Evaluation Goals

The evaluation goals are:

- Verification of the number of measures installed and calculation of estimates of energy savings and demand reduction for 2002
- Assessment of the success in implementing the programs as designed
- Assessment of participants' satisfaction and the degree to which the programs 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 and nonparticipants. Chapter IV presents the results of the impact analysis. In Chapters III and IV, findings are presented individually for each utility's program(s), and common themes are examined across programs. In this way, the goal of the CPUC to combine the evaluation process is accomplished while not sacrificing the needs for unique program evaluations for each utility.

II. Methodology

Summary of Approach

For each program, the Quantec team reviewed appropriate program materials and design documentation, performed interviews with key stakeholders, conducted telephone and on-site surveys with participating customers, and completed site visits to verify measure installation and retention. The process evaluation focused on an assessment of program delivery and customer response. Data were collected through telephone and on-site surveys, using essentially the same survey protocol for both utilities. 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 measure installations verified through the on-site visits.

Stakeholder Interviews

Quantec staff conducted in-depth, in-person interviews with program managers and other utility staff, program implementation contractors, and SDG&E's database contractor. In all, we conducted 14 in-person interviews with stakeholders. Quantec staff transcribed detailed notes from these interviews and imported the text into qualitative analytic software for analysis (software discussed in more detail in Chapter III).

Customer Surveys

Quantec staff conducted 196 customer surveys across the three programs. Table II.1 displays the completed surveys. One-half of the participant surveys were conducted by telephone. The other half was conducted during the site visits discussed below. We also conducted 56 interviews with nonparticipating customers, categorized into three distinct populations.

- **Type 1.** Those who received program promotional materials but chose not to participate
- **Type 2.** Those with no exposure to the program
- **Type 3.** Those who received an audit but declined installation of any measures

Table II.1: Survey Completions

Population	Surveys Planned	Surveys Complete
Program Participants	140	140
Nonparticipants		
Type 1	30	24
Type 2	30	30
Type 3	10	2
Overall	210	196

See Appendix A for copies of stakeholder interview guide and customer surveys.

Site Visits

Quantec staff completed 72 site visits with participating customers, as shown in Table II.2.

Table II.2: Site Visit Summary

	Population	Sample
SCE	739	35
SDGE	619	37
Overall	1,358	72¹

¹ At two of the sites, while Quantec staff was able to complete the review of installed measures, they were not able to complete a survey because the contact was too busy to do so or otherwise unavailable.

From the participant populations for each utility, we chose a random sample using the following three-stage approach:

1. First, we organized the sites by zip code and alphabetically to ensure as complete distribution of sites as possible.
2. Next, we extracted 105 sites by taking approximately every sixth site. This ensured random samplings from almost all zip codes. Choosing 105 sites provided us with two alternatives for each site needed to complete 35 visits.
3. The 105 sites were then organized to provide 35 primary site selections with two alternates for each. (See Appendix B for comparison between site visit sample and program population). Since two of the site contacts were unavailable for surveys during the review of measures, Quantec staff visited an additional two sites to ensure complete data.

During the unannounced site visits, staff conducted a comprehensive count of the measures installed. At each site, we also conducted a survey of participants. In some cases, the visit was terminated and an alternate site chosen for the following reasons:

- The appropriate contact for the survey was not available
- The business had been discontinued
- The business had changed ownership

The types of business visited are shown in Table II.3.¹

Table II.3: Participant Business Types: SDG&E & SCE Site Visits

Business Type	SCE		SDG&E	
	Frequency	Percent	Frequency	Percent
Service	6	17%	9	24%
Restaurant	2	6%	6	16%
Office	5	14%	7	19%
Automotive	5	14%	0	0%
Retail	11	31%	12	32%
Medical	4	11%	1	3%
Barber/Beauty Salon	2	6%	2	5%
	35	100%	37	100%

Analysis

Analysis of the stakeholder interviews was conducted to identify emerging concepts and trends. We conducted statistical analysis of customer survey data, primarily calculation of frequency of response categories, for each individual utility’s program(s), as well as cumulatively for all customers served.

Using the stipulated values for wattage reduction and hours of use, original saving estimates for the visited sites were reassessed based solely on the verified installation. Realization rates – ratio of verified to reported savings – were then estimated for each measure in the sample. Realization rates, by measure type, were then extrapolated to the entire population of participants.

¹ These categories are not formal designations used by the utility, but reflect Quantec staff’s assessment of the business type during the site visit.

III. Process Evaluation Results

This chapter presents the results of the process evaluation’s data-collection efforts. Findings are presented separately by utility, then a cross-program view is provided as a chapter summary.

SDG&E

Stakeholder Views

Program Development & Administration. The SBEA and EZ Turnkey were envisioned as unique among programs aimed at the very small business customer in that the measures provided were free and were accompanied by energy education. In the past, programs of this type required a co-payment, which was a significant barrier to participation for such small customers.

Two contractors, one each for assessment and lighting installation, delivered the two programs. At the time of program development, the RFP for these program tasks was sent to approximately five companies. Prices were given for each measure, and line items were included in the work scope. Bidding contractors noted that the transparency of this process – “the CPUC makes everything public so everyone knows what everyone is charged for the work” – made it different from others in which they had participated, benefiting those with more experience who knew enough about the market to bid below the cap.

Assessment contractors experienced some initial discomfort during the bidding process because the programs were linked. That is, assumptions had to be made about the Turnkey portion in order to guarantee the kWh goals required. Still, to win the bid, the bidder agreed to perform as many assessments as might be needed to reach the kWh goals (including a willingness to do 10% more sites if necessary). Staff and contractors alike agreed that the savings goals were aggressive, causing concern in the beginning and forcing them, initially, to target the larger of the eligible businesses and concentrate on certain measures to ensure that goals would be reached. Once savings goals were met, however, the contractors could and did revisit the smaller businesses.

Everyone interviewed found program communication to be very effective. By far, the biggest contributor to effective communication was the programs’ proprietary database, Track It Fast. While all parties used e-mail, office

“The database provided central warehousing of information, made it easy to communicate, secured each partner’s information, tracked all changes, and allowed real-time access to monitor program implementation.”

telephones, cell phones, and meetings to ensure adequate communication, everyone agreed that the database was both unique and key to the success of the program. One contractor called the system “remarkable.” The web-based data system allowed real-time, simultaneous access by everyone involved, allowing them to monitor the program, solve problems as they occurred, and schedule installations in a timely manner after assessment. The availability of SDG&E staff to both customers with questions/issues and to contractor’s for in-the-field support was also cited as an important element of successful program administration.

Implementation contractors said they found the program fees to be reasonable. Although staff felt the fees were high, they believed that the quality obtained rendered the investment in the initial year worthwhile.

Outreach & Marketing. SDG&E initially provided the assessment contractor with a list of eligible, small business (“A rate”) customers, focused on hard-to-reach and underserved communities in the service territory. Once contractors received this list, they initially did more sorting by zip codes and corridors of commercial/retail businesses to make implementation more efficient. Once this list was finalized, contractors drove or walked streets, making cold-call, door-to-door contacts. This targeted approach was seen as very effective.

As the program progressed, contractors reported that they could drive around and quickly identify which businesses were likely to qualify. In other cases, business types that clearly would benefit from the lighting measures (“we found hair and nail salons were very over lit”) could be identified from the eligible list using a keyword search, then targeted for contact. Contractors noted that, at first, even though there was concern about reaching kWh goals, they did not sort the list by looking for largest energy consumption; this only occurred later as pressure to meet kWh goals increased. Later in the program year, customer referrals became a source of participants.

“One-on-one sell was best; mass marketing would have overwhelmed them and we also would have spent a lot of time with customers who we could not really have helped.”

Once inside the door, the assessment contractors described the program, using a one-page program handout with key words strategically highlighted. Customers concerned that the offer was a scam could call the Program Manager or SDG&E’s customer service help-line to verify legitimacy. Assessment contractors reported that the booklet, “The Power to Save,” was also very useful in educating customers, especially when questions came up about the incremental cost of replacement.

Originally, SDG&E staff envisioned a key role for affinity groups such as the Chambers of Commerce and Business Improvement Districts (BID) in marketing the program. None of these groups were found to be effective in

this role, but some BIDs received local recognition from their involvement program.

Customer Response. The biggest barrier to customer participation was suspicion of contractor legitimacy and free measures. Contractors report that having SDG&E Identification (shirts, logo on forms, toll-free phone numbers, and staff support for confirmation to customers) and the legitimacy of the utility behind them was very effective in overcoming initial resistance. Contractors also found that, in about 30% of cases, they needed to educate customers about the public purpose charge, often showing them on their bills how the charge is assessed.

The SBEA also required assessors to look at customers energy uses beyond lighting and, using a list of recommended no- and low-cost measures/actions, advise them on ways to reduce their energy consumption. Most businesses were primarily interested in the free lighting. In addition, the assessment contractors found that many of the measures/actions on the list did not apply to the majority of businesses targeted.

In general, SDG&E staff and contractors alike believe that the customers' needs, and in particular their lighting needs, were met by the program. The information component was also well received, with many customers surprised by the energy savings possible in their businesses.

"We probably met 90% of lighting needs – the lighting measures were 'spot on' [exactly what was needed]. And lighting is the biggest area of savings for this customer group."

"Most were very happy to see long-term, permanent savings."

Contractors noted that some customers received certain non-energy benefits from the program including:

- Higher quality lighting (often with fewer lights)
- Verification that they were not paying their neighbor's bill or being exploited by their landlord (customers in old strip malls with one master meter)

Program Issues. Several issues emerged in the first year of program delivery, including:

- **The list of low- and no-costs measures was not really applicable to Class A customers.** For example, although cooking measures were on the form, few restaurants are in this class. The form did not include insulation, timers on vending machines, and other more-applicable measures. Changes to make the list more focused on the type of customers participating in the program were proposed by contractors and revisions were included in the 2003 program.

- ***Not all Program measures could be implemented***, often due to local ordinances or landlord preferences. For example, in some of the target communities, window-film could not be installed (e.g., police need to be able to see into buildings when driving through the neighborhoods). In other cases, landlords did not want the film installed, given that the next tenant might want it removed.
- ***Simplification of forms***. The contractors recommended consolidating the energy inventory/audit form with the agreement form to further simplify an already very simple program.
- ***Liability issues*** arose when, for example, contractors had to go onto rooftops to examine air conditioning (AC) coils. In some cases, layers of dirt concealed very deteriorated coils that would disintegrate when cleaned. In other cases, if the assessment contractors touched the coils, it would nullify the customer's service agreement with the AC contractor. In these cases, customers were told what they should request of the AC contractor in terms of cleaning and/or replacement. In other cases, just getting onto the roof was difficult (access was locked). The program contractors suggested that these liability issues be discussed as they related to this and to future programs.

Lessons Learned. Program staff felt that the checks and balances provided by two contractors implementing unique sections of the program, while perhaps more costly, was an investment worth making especially when using very experienced firms. Customers receive a high quality program and there is little worry on the part of staff that “contractors will push the envelope.”

As noted earlier, the initial list of no- or low-cost recommendations was not applicable to this customer base. For example, the contractors found that AC economizers are meaningless to customers without AC or who rarely use AC due to income constraints. In addition, almost none of the businesses had cooking facilities. The assessment contractors have identified more appropriate measures for these customers, and SDG&E has undertaken revision of the list for 2003.

The quality of some of the lighting measures was lower than program staff expected. Even those labeled ENERGY STAR show wide variation. The contractor has replaced measures, such as faulty lighting fixtures, where there were problems/failures with the program-provided measures. For 2003, however, the utility has tried to tighten guidelines for lighting quality, giving more scrutiny to the design specifications of measures proposed by contractors.

Survey Results

Participants. We first asked customers to identify how they learned about programs and the primary reason they chose to participate. As shown in Figure III.1 and Table III.1 the door-to-door outreach approach and the marketing message used by the contractors. No specific examples of “other” were given by respondents.

Figure III.1: How Participants Learned about Program – SDG&E

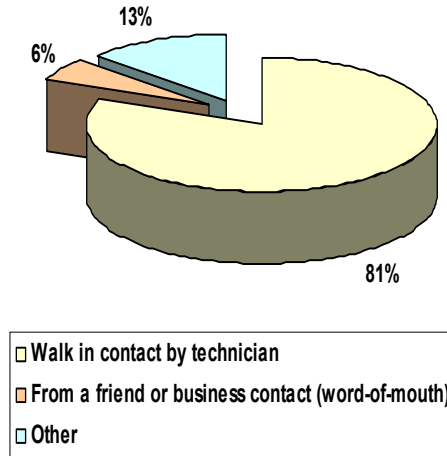


Table III.2: Reason Customer Decided to Participate in Energy Survey - SDG&E

Reason	Frequency	Percent
To learn more about ways to reduce energy costs	47	67%
To get free lighting and other equipment	21	30%
Technician indicated energy survey would help you	2	3%
	70	100%

We also asked customers how important SDG&E’s program sponsorship was to their decision to participate. As shown in Table III.2, 80% said it was “very important” or “somewhat important.”

Table III.3: Importance of Utility Sponsorship of Program in Customer’s Participation Decision – SDG&E

Rating	Frequency	Percent
Very important	49	70%
Somewhat important	7	10%
Not at all important	12	17%
Do not know/do not remember	2	3%
	70	100%

The next few tables and figures show participant responses to questions regarding the clarity and usefulness of the information they received from the energy survey, the usefulness of the form used to show them potential savings from measure installation, and the overall clarity of the information they received. More than half of the surveyed customers (53%) remembered the specific information on the energy savings calculation form and said that they found it “very clear.” Additionally, 36% recalled that the information provided on how to use energy in their business was “very useful” and “very important” in their decision to install the Turnkey measures. About 67% of customers found the overall program information “very clear.”

Table III.4: Ratings of Clarity of Energy Savings Calculation Form – SDG&E

Rating	Frequency	Percent
Very clear	37	53%
Somewhat clear	1	1%
Do not know/do not remember	32	46%
	70	100%

Figure III.2: Ratings of Usefulness of Information –SDG&E

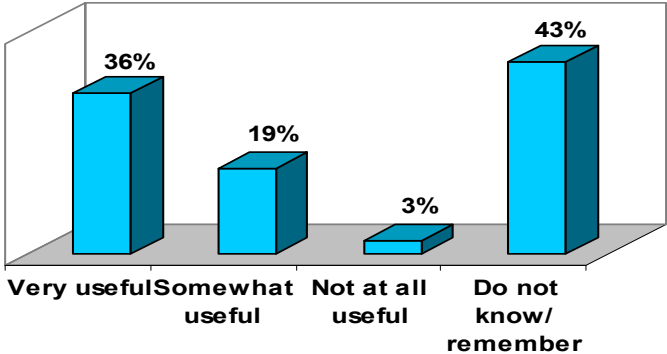


Figure III.3: Ratings of Importance of Energy Calculation Information – SDG&E

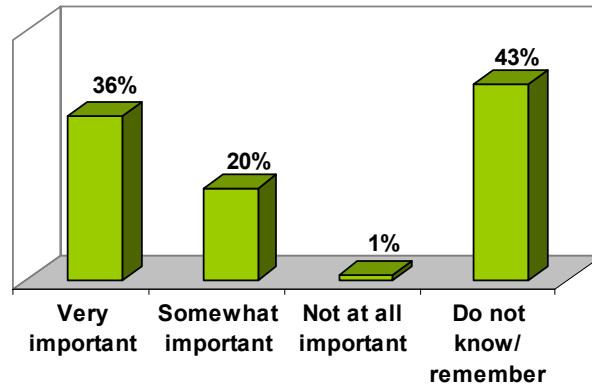


Table III.5: Ratings of Clarity of Overall Program Information – SDG&E

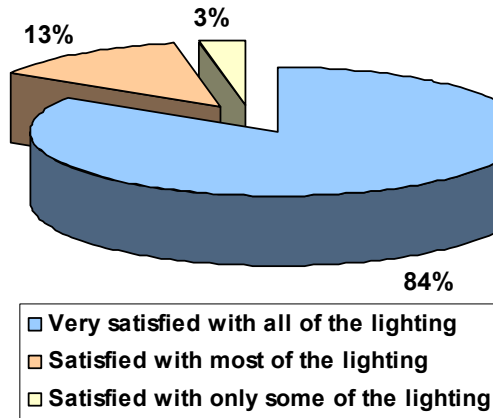
Rating	Frequency	Percent
Very clear	47	67%
Somewhat clear	1	1%
Not at all clear	2	3%
Do not know/do not remember	20	29%
	70	100%

We also asked customers to rate various aspects of delivery of both the energy assessment and measure installation(s), as well as their satisfaction with the lighting measures received (Table III.5 and Figure III.4). The majority of customers reported that the energy assessment and subsequent installation occurred at a convenient time and was completed in a reasonable amount of time and as scheduled. Few had any concerns with the energy assessment. Of the four who said the installer did not arrive on time, two said the installer called to inform them of the change in schedule.

Table III.6: Evaluation of Aspects of Energy Assessment & Installation – SDG&E

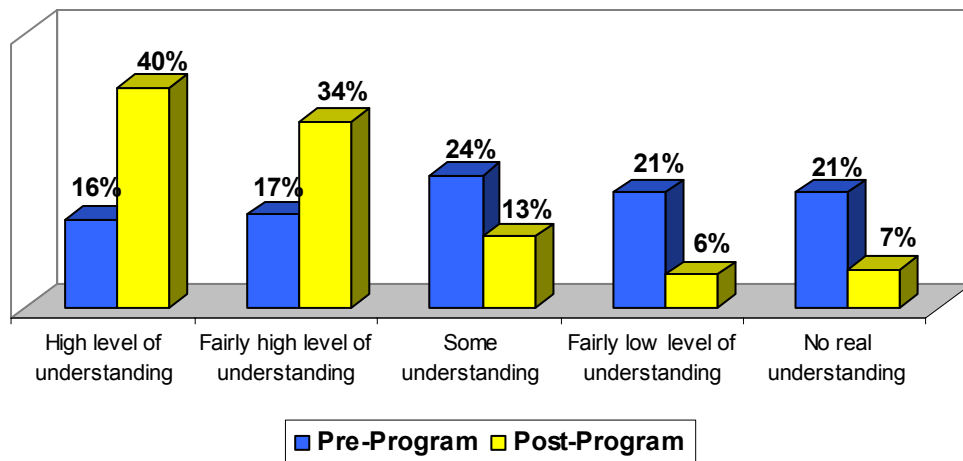
Evaluation Component	Yes	No	Don't Know/ Don't Remember
Energy Assessment			
Completed at a convenient time	94%	4%	1%
Completed in reasonable length of time	99%	0%	1%
Had concerns/issues with assessment	3%	94%	3%
Installation			
Scheduled at a convenient time	94%	6%	0%
Installer arrived on time	90%	6%	4%
Completed in a reasonable length of time	96%	3%	1%

Figure III.4: Satisfaction with Lighting Installed – SDG&E



As one measure of the effect of the program on customer’s knowledge, we asked them to rate their pre- and post-program understanding of how to improve energy efficiency in their business. As shown in Figure III.5, the number of customers reporting a “high level of understanding” increased by 24% as a result of program participation. The percent reporting a “fairly high level of understanding” doubled.

Figure III.5: Pre- and Post-Program Understanding of Energy Efficiency in Business – SDG&E



We also asked customers what energy improvements they had made prior to the program. Table III.6 shows their response.

Table III.7: Participants’ Pre-Program Energy Improvements – SDG&E

	Frequency	Percent
Made Improvements?		
Yes	26	37%
No	41	59%
Do not know/do not remember	3	4%
	70	100%
Types of Improvements Cited*		
Bought energy efficient equipment, including new lighting, cooler vs. AC, sensors, other energy efficient products	11	
Minimize lighting (leave some off, unscrew some bulbs, monitor usage)	9	
Monitor all energy use closely	3	
Improved building shell	2	
Switched fuel for dryer	1	
Do not recall specific improvement	2	

* Multiple responses possible.

For those reporting no pre-program energy improvements, most said they were unsure why they had not taken actions. For those citing reasons for not making improvements, examples included not owning the building and no awareness of what could be done to save energy.

To assess freeridership, we asked customers about their past involvement in utility-sponsored programs and that they estimate the likelihood of installing the program measures in the next two years in the absence of program support. As shown in Tables III.7 and III.8, few customers had participated in other utility programs prior and only one had participated in another program since SBEA/EZ Turnkey. A total of 20% percent said it was either “very likely” or “somewhat likely” that they would have installed the measures without the program.

Table III.8: Reported Participation in Other Utility Programs –SDG&E

Participation	Yes		No	
	Frequency	Percent	Frequency	Percent
Participated in other programs prior	6	9%	64	91%
Participated in other programs since	1	1%	69	99%

Table III.9: Likelihood Participant Would Have Installed Lighting within the Next Two Years in Absence of Program (Freeridership) – SDG&E

Rating	Frequency	Percent
Very likely	3	4%
Somewhat likely	11	16%
Not at all likely	55	78%
Do not know/do not remember	1	1%
	70	100%

Finally, as a qualitative assessment of program impact on customers’ energy usage, we asked if they had noticed savings on their energy bill since participating in the program. More than half said they had (see Table III.9). Other benefits customers perceived (see Table III.10) include brighter light, improved light quality, and less flickering.

Table III.10: Post-Program Savings on Energy Bill – SDG&E

Savings Noticed	Frequency	Percent
Yes	41	59%
No	14	20%
Do not know/do not remember	15	21%
	70	100%

Table III.11: Other Benefits of Lighting Measures- SDG&E*

Benefits	Frequency
Bright light/more light	12
Improved light quality	22
Less flickering	5

* Multiple responses possible

During both the telephone and on-site surveys, we asked a series of questions allowing us to profile the customers’ business end uses and fuel types. Responses to these questions are summarized in Tables III.11 and III.12.

Table III.12: Participants' End-Uses – SDG&E

End Use	Yes		No	
	Frequency	Percent	Frequency	Percent
Lighting	70	100%	NA	NA
Space heating	22	31%	48	69%
Air conditioning	34	49%	36	51%
Refrigeration	16	23%	54	77%
Cooking	7	10%	63	90%
Computers	27	39%	43	61%
Other electronics	15	21%	55	79%
Water heater*	7	10%	63	90%

* Many sites were businesses with shared toilet facilities, as in strip developments or shared office suites.

Table III.13: Participants' Fuel by End-Use – SDG&E

Fuel Use	Electric		Gas		NA	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Space heating	17	24%	5	7%	48	69%
Water heating	3	4%	4	6%	63	90%
Air conditioning	34	49%	0	0%	36	51%
Cooking	3	4%	4	6%	63	90%

Nonparticipants. We surveyed two² types of nonparticipating customers for SDG&E:

- **Type 1.** Those who received program information (exposure) but chose not to participate in the energy assessment or install measures
- **Type 2.** Those customers who had no exposure to the program

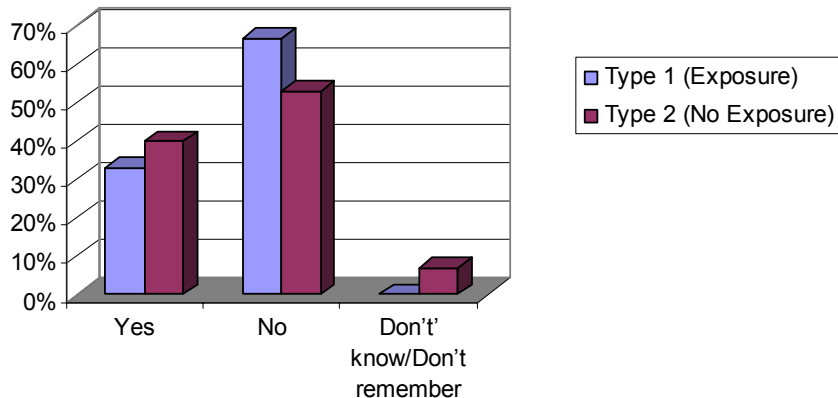
We asked these nonparticipants some of the same questions and some questions specific to their status. Where questions were asked of both types of nonparticipants, their responses are shown individually in the tables below.

The first set of questions was designed to assess the customers' past and current understanding of energy efficiency in their business and any actions taken to improve their business's energy efficiency. Figures III.6 and III.7 and Table III.13 summarize their responses. Both types of customers were similar in their reporting of past actions – few had taken any measures. A higher percentage (20%) of those with exposure to the program rated their understanding of how to improve energy efficiency as “very high” than did those with no program exposure (7%). These percentages, however, given the

² SDG&E had no Type 3 customers, i.e., those who received an audit but declined to participate.

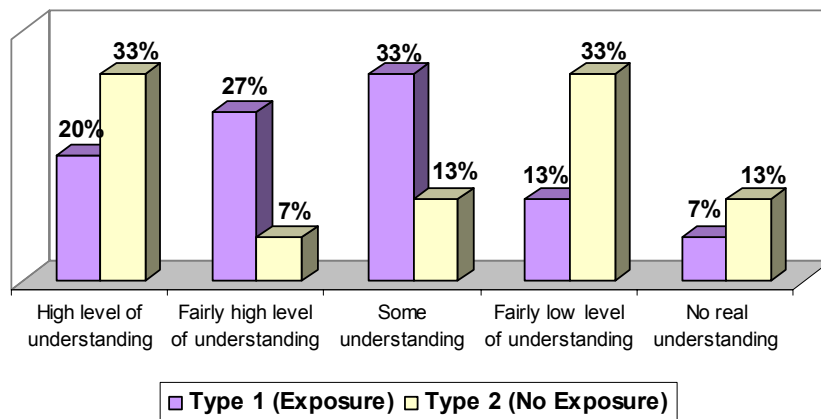
very small sample, cannot be interpreted as indicating significant differences in the two groups.

Figure III.6: Energy Actions in Business Taken by Nonparticipants – SDG&E



Of those who said they had taken energy actions in their business, actions taken included installation of energy efficient lighting, replacing old equipment with energy efficient models, and some behavioral changes.

Figure III.7: Nonparticipants Rating of Understanding of How to Improve Energy Efficiency in Their Business – SDG&E



For those receiving program information, we asked a series of questions to determine whether they recalled receiving program material and if the information was clear. Two-thirds of those surveyed did not know or did not remember if the assessment contractor left them information about the program. Of the five who said the contractor did leave information, only one remembered the material and said it was “very clear.”

We also asked customers to identify their primary reasons for not participating in the programs and whether they would be interested in this type of program in the future. As shown in Table III.13, almost 60% of the nonparticipants who received program information said that it did not apply to their business, and 20% had already installed efficient lighting.

Table III.14: Reasons for Nonparticipation – SDG&E

Reason	Frequency	Percent
Program does not apply to business	9	60%
Already installed efficient lighting	3	20%
Other	3	20%
	15	100%

When asked if they would be interested in participating in a program like this if it were offered to them again, 47% said yes. An additional four (27%) said they would be interested but needed more details to determine if the program would be applicable to their business.

SCE

Stakeholder Views

Program Administration. Prior to implementation, SCE solicited bids from contractors for program delivery. Contractors reported that SCE did a good job outlining the scope of work, that there was a good and fair mechanism in place to answer bidders’ questions, and that there was a good screening process at the time of the interviews with bidders. As a result, two contractors, Catalina and CRI, delivered SCE’s Small Business Lighting Retrofit program. Each of these firms conducted the energy assessments and installed the lighting measures. The priority geographic areas for the program were divided between them, with one contractor serving two communities and the other serving three.

Initially, SCE started with the intent of including twenty-six measures in order to keep this program consistent with statewide programs. Ultimately SCE used only those measures identified as most used by customers in this rate class: “about 5 measures, all lighting.”

The Program Manager and the contractors communicated by telephone, e-mail, meetings, and on-site visits. All interviewed felt that communication was very effective, with contractors noting that SCE was very responsive to their questions/issues/requests.

Contractors were initially concerned about meeting the kWh goals, especially since they were restricted to implementing the program in only a few

communities. In the end, however, they were able to exceed kWh goals by 12% and SCE expended almost the entire program budget for the year.

SCE staff reported that they paid contractor fees slightly below market. As one staff person noted, he knew that one of the contractors wanted to expand their presence in the market and had probably bid low to obtain the contract. Contractors themselves felt that fees were fair market per fixture and noted that having a very clear scope of work outlined by the utility – “if you find this in this site, install this measure” – greatly simplified implementation and cost. Both contractors reported that the paperwork required was beyond what they anticipated, but, given that the program was new, it was not overly burdensome and was definitely overshadowed by the quick payment schedule SCE maintained.

Both staff and contractors viewed using two firms as working well. The key to this success was that both firms were able to provide assessment and installation, allowing each participant to deal with only one contractor. One contractor noted that their firm brought a great deal of knowledge and experience in working with small customers to the program, as well as being a one-stop contact for customer questions and issues related to the lighting measures. Both staff and contractors reported that flexibility on everyone’s part was needed during this first year of implementation and had been key to meeting program goals.

Outreach & Marketing. SCE provided the contractors with lists of eligible GS-1 customers. From this point, the contractors diverged in their next step. Catalina first screened customers by telephone, while CRI did door-to-door visits. While there was not a high level of participation by affinity groups, the Program Manager attended one event sponsored by the Chamber of Commerce in one of the target communities; this Chamber was also the program’s first retrofit. Staff felt that attending this event increased awareness of the utility’s presence in the community.

Customer Response. As with SDG&E, customers were somewhat reluctant to participate, believing the free service and measures might be a scam. All of those interviewed agreed that having SCE involved – the name, the badge – lent credibility essential to the program’s success.

Staff reports that the customer response has been very positive, partly because they were happy that they were finally selected for a utility program and because the utility made the program minimally invasive on their time. Contractors felt that the program literature was simple and easily understood by customers, although many customers asked to have a “projected dollar amount” of savings they could expect after the retrofit in addition to the information the energy assessment form provided on kWh savings. While assessors were reluctant to provide this dollar estimate, assuming that

customers would think it was an absolute figure, most continued to add a section to the form estimating annual dollar savings.

All interviewed felt that the program definitely met the customers' lighting needs. In some cases, although the original scope of work had not asked contractors to clean fixtures, SCE did allow for reimbursement of this and for a few minor repairs. In addition, using high quality lighting products further ensured that customer needs were met. The customers reported other benefits from the lighting, including reduction in heat from replacing magnetic ballasts with electronic ones and improved light quality.

While most customers were pleased with lighting installations, some asked for further assistance with AC, compact fluorescent lightbulbs, exit signs, gas, and other measures. SCE materials on other programs was provided to these customers. Customers contacted by the contractors but found to be ineligible for the program were also referred to other SCE programs such as Express Efficiency.

"We definitely met customer needs. We mostly saw lighting that had not seen attention in years."

"Customers gained a lot of light. We hadn't anticipated this increase in quality."

Program Issues. Contractors and staff reported few problems with delivery of the program. As noted earlier, the contractors made some changes to the measure audit form, allowing for a gross estimate of annual savings in dollars, as well as kWh. The contractors also encountered some problems with very old lighting systems; in these cases, the retrofits could not be completed and customers were unhappy with the outcome. Contractors also noted that, in the beginning, they were not prepared to educate customers to the extent needed on the public goods charge and how the program was funded.

Another factor presenting some issues for the contractors were customers in multi-suite businesses, each suite having separate meters. Because the combined kWh would disqualify the customer for the program, the contractors counted each meter individually and provided the lighting measures. There was confusion in some instances between landlords and tenants as to who has the legal right to sign the program authorization form. SCE relied on CPUC ruling that if customer pays toward the Public Goods Charge, then they have the right to participate; thus, tenants can authorize participation.

Lessons Learned. Staff discovered that assumptions made about the product mix were not valid for the targeted customers. For example, most had no exit signs, resulting in no savings on Light Emitting Diode (LED) installations. Staff also reflected that, while developing the program materials in-language was seen as very important, most customers wanted to conduct business in English. While having the materials in-language may be important for

establishing trust and credibility with customers, it may not be essential for success of the program. Having the Chambers of Commerce and other affinity groups send out a letter in advance of program delivery would also improve initial program acceptance.

Staff reported that the CPUC funding process also hampers delivery. The funds come later than promised, or in small amounts versus annual payment, making it difficult to plan with contractors for workload requirements.

Survey Results

As shown in Figure III.8 and Table III.14, the majority (90%) of SCE customers said they learned about the program through the door-to-door call made by the contractor, and two-thirds said they decided to participate to get free lighting.

Figure III.8: How Participants Learned about Program - SCE

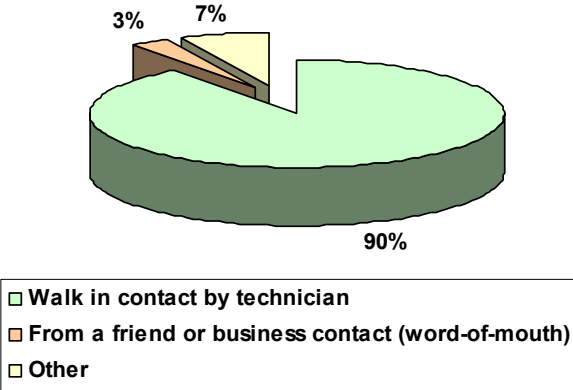
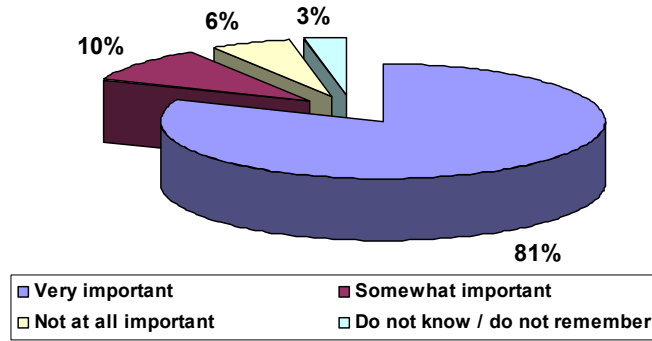


Table III.15: Reason Customer Decided to Participate in Energy Survey - SCE

Reason	Frequency	Percent
To get free lighting	46	66%
To learn more about ways to reduce energy costs	23	33%
Another business or friend participated	1	1%
	70	100%

We then asked customers how important the utility’s sponsorship was to their decision to participate. As shown in Figure III.9, more than 90% said it was “very” or “somewhat important.”

Figure III.9: Importance of Utility Sponsorship in Customer's Participation Decision - SCE



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. While many did not remember much about the form, 59% said the energy calculation form was very clear and half (51%) said the information on energy use in their business was “very useful.” Less than half said the information was “very important” in their decision to install the lighting measures. Overall, most customers (87%) reported that the program information was “very clear.”

Table III.16: Ratings of Clarity of Energy Savings Calculation Form - SCE

Rating	Frequency	Percent
Very clear	41	59%
Somewhat clear	7	10%
Do not know/do not remember	22	31%
	70	100%

Table III.17: Ratings of Usefulness of Information on Energy Use in Business - SCE

Rating	Frequency	Percent
Very useful	36	51%
Somewhat useful	9	13%
Not at all useful	3	4%
Do not know/do not remember	22	31%
	70	100%

Figure III.10: Ratings of Importance of Energy Calculation - SCE

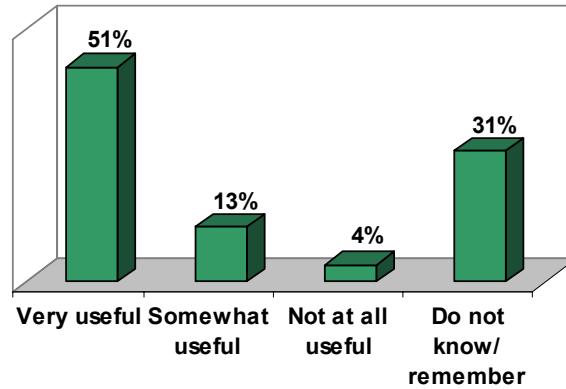
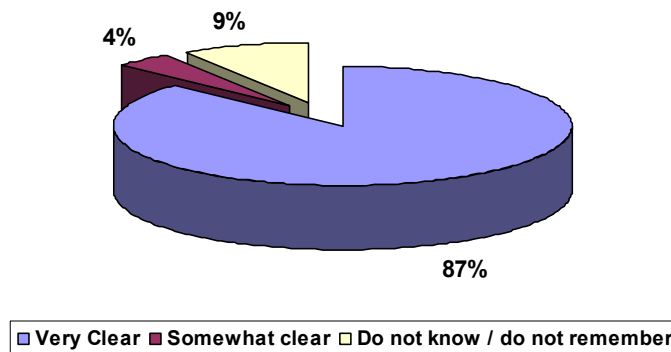


Figure III.11: Participants' Ratings of Clarity of Overall Program Information - SCE



As shown in Table III.17, almost all surveyed customers said the energy assessment was completed at a convenient time and in a reasonable length of time. Of those with concerns, these included:

- Making sure the installation can take place during normal business hours
- Technician seemed to take more time than necessary to complete the work
- Some technicians for one of the contractors did not have any identification or uniform so customers initially thought it might be a scam

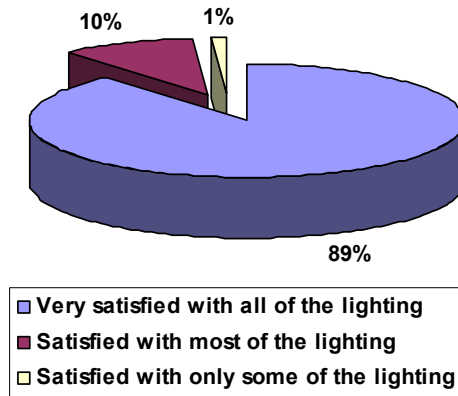
Positive responses were given regarding the installation, but with fewer customers (84%) reporting that the installer arrived on time. The majority, 89%, of customers said they were “very satisfied” with the lighting measures installed.

Table III.18: 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	97%	1%	1%
Completed in reasonable length of time	97%	1%	1%
Concerns/issues with assessment	6%	93%	1%
Installation			
Scheduled at a convenient time	90%	10%	0%
Installer arrived on time	84%	11%	4%
Completed in a reasonable length of time	96%	1%	3%

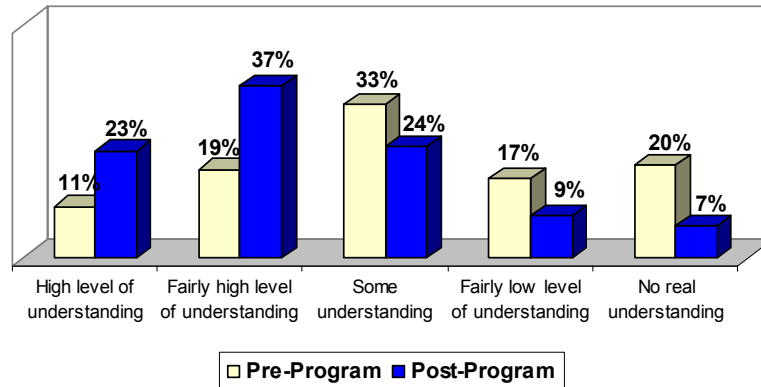
Of those who reported that the installer did not arrive on time, seven said that the installer did not call them to tell them of a change in schedule.

Figure III.12: Participant Satisfaction with Lighting Installed – SCE



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.13, the number of customers reporting either a “high level” or “fairly high level” of understanding doubled after the program.

Figure III.13: Pre- and Post-Program Understanding Energy Efficiency in Business - SCE



About one-third (34%) of surveyed customers said they had made some energy efficiency improvements prior to participating in this program, very few 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.18 and III.19).

Table III.19: Pre-Program Energy Improvements - SCE

	Frequency	Percent
Improvements Made?		
Yes	24	34%
No	46	66%
	70	100%
Type of Improvements*		
Minimized lighting (leave some off, unscrew some bulbs, monitor usage)	10	
Bought energy efficient equipment, including installation of new lights, cooler vs. AC, sensors, other energy efficient products	7	
Use fans/leave door open vs. AC	5	
Monitor all energy use closely	3	
Power down computers	3	
Switched to a more efficient fuel type	1	

* Multiple responses possible.

Table III.20: Participants’ Reported Participation in Other Utility Programs – SCE

Participation	Yes		No	
	Frequency	Percent	Frequency	Percent
Participated in other programs prior	4	6%	66	94%
Participated in other programs since	0	0%	70	70%

Of those who reported making no energy improvements before this program and cited specific reasons for their inactivity, the following reasons were given:

- Tenant rents/leases the building (4)
- Hadn’t considered/given much thought to it (6)
- Unaware of what can be done (7)
- Do not consume a lot of energy (3)

As shown in Table III.20, only 9% of customers said that it was “very” or “somewhat” likely that they would have installed the lighting measures in the absence of the program.

Table III.21: Likelihood Participant Would Have Installed the Lighting within the Next Two Years in Absence of Program - Freeridership - SCE

Rating	Frequency	Percent
Very likely	2	3%
Somewhat likely	4	6%
Not at all likely	62	89%
Do not know/do not remember	2	3%
	70	100%

Only half of the participants reported saving energy on their electric bills since participating in the program. We also asked customers if there were any other benefits from having the lighting measures installed. Their responses are summarized in Table III.22.

Table III.22: Participants’ Post-Program Savings on Energy Bill - SCE

Savings Noticed	Frequency	Percent
Yes	36	51%
No	6	9%
Do not know/do not remember	28	40%
	70	100%

Table III.23: Participants’ Other Benefits of Lighting Measures- SCE*

Benefits	Frequency
Bright light/more light	31
Improved light quality	18
Less flickering	4
Cooler than previous lights	1

* Multiple responses possible

Customers were asked, as a final section of the survey, to report their end uses and fuel types. Their responses are summarized in Tables III.23 and III.24.

Table III.24: Participants’ End-Uses - SCE

End-Use	Yes		No	
	Frequency	Percent	Frequency	Percent
Lighting	70	100%	NA	NA
Space heating	11	16%	59	84%
Air conditioning	55	79%	15	21%
Refrigeration	13	19%	57	81%
Cooking	4	6%	66	94%
Computers	43	61%	27	39%
Other electronics	34	49%	36	51%
Water heater*	11	16%	59	84%

* Many sites were businesses with shared toilet facilities, as in strip developments or shared office suites.

Table III.25: Participants’ Fuel by End-Use - SCE

Fuel Use	Electric		Gas		NA	
	Freq	Percent	Freq	Percent	Freq	Percent
Space heating	4	6%	7	10%	59	84%
Water heating	6	9%	5	7%	59	84%
Air Conditioning	55	79%	0	0%	15	21%
Cooking	0	0%	4	6%	66	94%

Nonparticipants. For SCE, we surveyed three types of non-participating customers:

- **Type 1.** Those who received program information (exposure) but chose not to participate in the energy assessment or install measures
- **Type 2.** Those customers who had no exposure to the program
- **Type 3.** Those who had an energy assessment but chose not to install the lighting measures.

Since there were so few Type 3 customers (those who had the assessment but no installation - five total, of which only two completed the survey), we combined their responses with the Type 1 participants, defining the total, 11, as those “with exposure” to the program.

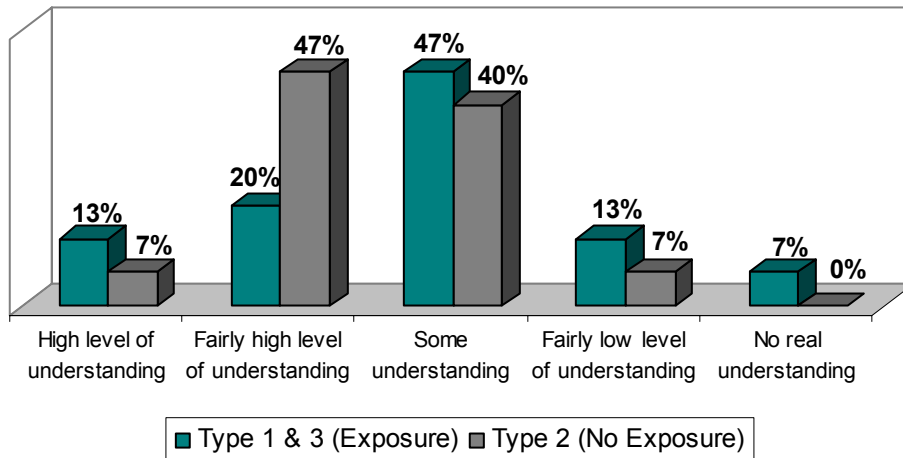
We first asked nonparticipants about any actions they might have taken to improve energy efficiency in their business and, if actions had been taken, what these included. About half of the Type 1&3 and two-thirds of the Type 2 customers had taken some actions to save energy. Type 2 customers reported taking more actions.

Table III.26: Energy Actions in Business Taken in Business by Nonparticipants – SCE

Actions	Types 1 & 3		Type 2	
	Frequency	Percent	Frequency	Percent
Yes	5	45%	10	67%
No	5	45%	5	33%
Don't know/Don't remember	1	9%	0	0%
	11	100%	15	100%

As shown in Figure III.14, Type 2 customers were much more likely to say they had a “fairly high level” of understanding of energy efficiency in their business than were nonparticipants who were approached about the program (47% vs. 20%).

Figure III.14: Nonparticipants Rating of Understanding of How to Improve Energy Efficiency in Their Business – SCE



For those nonparticipants approached by the program contractor, four reported that the contractor left them information (Table III.26). Of those who said they

were left program information, two said the information was “very” or “somewhat” clear.

Table III.27: Program Material Left with Nonparticipants – SCE

Contractor Left Information	Frequency	Percent
Yes	4	36%
No	2	18%
Do not know/do not remember	5	45%
	11	100%

Table III.28: Reasons for Nonparticipation – SCE Type 1 and 3

Reasons	Frequency
Don't remember being contacted	5
Did not believe offer was true	2
Could not find application form	1
Something interfered with participation (too late, did not get proper notice, tried but couldn't participate)	3

One of the customers who received an audit but did not install the measures cited the following reason:

The other manager of the store didn't want to deal with it - didn't immediately pass along the information about the program to the other manager (who would have been interested in participating) because he was skeptical of the program.

We asked the nonparticipants who had exposure to the program if they would be interested in participating in a program like this one if it were offered again. Nine (82%) said “yes,” with the remaining two “not sure.” Of those who were unsure, one had just completed a remodel and did not know if measures were still applicable while the other noted that “there was not follow up last time,” so he was not sure he would want to get involved again.

IV. Impact Evaluation Results

Most of the energy and demand impact components were stipulated in the Program Implementation Plan (PIP). Those components included 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.

SDG&E

The SDG&E program had a total of 619 participants who had a variety of measures installed. The list of those measures and the number of installations (as provided by SDG&E) is provided in Table IV.1 below. The numbers of measures installed in the sample of 37 sites are also provided. As may be seen in the table, the distribution of the measures in the sample is reasonably close to that of the overall population.

Table IV.1: Distribution of Installed Measures in Site Visits and Population – SDG&E

Measure	Sample Size (n=37)		Population (N=619)	
	Frequency	Percent	Frequency	Percent
Setback Programmable Thermostat	3	0.1	222	0.5
Install 4ft T-8/T-5 Lamp & LBO Elec. Ballast	2,177	84.5	36,578	82.2
Wall-Box Lighting Sensor	26	1.0	591	1.3
Screw-in 14-26 Watt CF Lamp	127	4.9	2,204	4.6
Screw-in 23 Watt CF Lamp with Reflector	81	3.1	1,567	3.5
High Efficiency LED Exit Signs New Exit Sign	7	0.3	150	0.3
Screw-in 15 Watt CF Lamp with Reflector	74	2.9	1,639	3.7
Install 2 4ft T-8 Lamp & Elec. Ballast convert 8f	74	2.9	1,319	2.9
Screw-in 5-13 Watt CF Lamp	6	0.2	188	0.4
Other*	2	0.1	57	0.1
	2,577	100.0	44,515	100.0

* The category "Other" represents a very small portion (<1/10th of 1%) of the total kWh savings. These measures include: Install 4ft T-8/T-5 Lamp & Elec. Ballast, Wall or Ceiling Mounted Lighting Sensor, Install Premium 8ft T-8/T-5 Lamp & Elec. Ballast, Install 2ft T-8/T-5 Lamp & LBO Elec. Ballast, Install 8ft T-8/T-5 Lamp & Elec. Ballast, Install 2ft T-8/T-5 Lamp & Elec. Ballast, Reflective Window Film.

Overall, we found a very high rate of consistency between reported installations (program database) and those verified during site visits. The measures and their individual installation rates are shown in Table IV.2 below. The verified rate of installation for all measures was 100%. Based on this realization rate, the SDG&E reported savings of 3,582,665 kWh and reported total net demand reduction of 683 kW (as of December 2002) are

correct within the limits of statistical accuracy achievable in the verification process.

The only differences we found between reported (program database) and verified measures were for “Screw-in 14-26 Watt CF Lamps” and “Screw-in 15 Watt CF Lamp with Reflector.” The differences are net figures based on some minor excess installations at one site combined with mild under-installations found at two other sites. The under-installations of “Screw-in 14-26 Watt CF Lamps” at one site were due to an unexplained acceleration of CFL burnouts. The installations of “Screw-in 15 Watt CF Lamp with Reflector” were three short of the reported 69. Two of these occurred at the same site that had the accelerated burn out of the “Screw in 14-26 Watt CF Lamps” described above. This suggests that while the CFL installation may have been correct, there was a problem with the electrical system at the site that ultimately resulted in the failure and removal of the installed CFLs.

Table IV.2: Verification of Installation by Measure – SDG&E

Measure	Verified	Reported (Database)	Correct Installation Percentage
Setback Programmable Thermostats	3	3	100%
Install 4ft T-8/T-5 Lamp & LBO Elec. Ballast	2,201	2,177	101%
Wall-box Lighting Sensor	25	26	96%
Screw-in 14-26 Watt CF Lamp	107	113	95%
Screw-in 23 Watt CF Lamp with Reflector	71	71	100%
High Efficiency LED Exit Signs New Exit Sign	7	7	100%
Screw-in 15 Watt CF Lamp with Reflector	66	69	96%
Install 2 4ft T-8 Lamp & Elec. Ballast convert 8ft	74	74	100%
Install 4ft T-8/T-5 Lamp & Elec. Ballast	2	2	100%
Screw-in 5-13 Watt CF Lamp	6	6	100%

Table IV.3 below provides the goals and the realized energy and demand savings for SDG&E. SDG&E’s program exceeded goals (as stated in 4th Quarter 2002 Report) for energy and demand savings by 16% and 28% respectively.

Table IV.3: Energy and Demand: Goals and Realized – SDG&E

	Goal	Realized kWh	Realized vs. Goal
Energy Savings	3,090,842 kWh	3,582,665kWh	116%
Demand Savings	532 kW	683 kW	128%

SCE

The SCE program had a total of 739 participants who had a variety of lighting measures installed. The list of those measures and the number of installations (as provided by SCE) are provided in Table IV.4 below. The number of measures found in the sample of 35 sites is also provided. The distribution of the measures in the sample is reasonably close to that of the overall population.

Table IV.4: Distribution of Installed Measures in Site Visits and Population - SCE

Measure	Sample Size (n=35)	Percent	Population (n=739)	Percent
Compact Fluorescent Lamps	161	6.2	3,987	6.8
4 Ft Fixtures T-8 (1 to 4 lamps)	1,629	63.2	37,297	64.3
8ft Fixtures replaced by 4ft T-8 (1 to 4 lamps)	656	25.4	14,422	24.9
8ft Fixtures replaced by 8ft T-8 (1 to 4 lamps)	82	3.2	1,460	2.5
LED Exit Signs	16	0.6	255	0.4
U-bend Tubes (2 lamp)	24	0.9	391	0.7
High Output T5	8	0.3	164	0.3
Other*	3	0.1	40	0.1
	2,579	100.0	58,016	100.0

* "Other" represents a very small portion (<1/10th of 1%) of the total kWh savings. These measures include: 2'ft Ballast and Lamp, 3'ft Ballast and Lamp, Interior HID 36-70 Mercury Vapor, Repair 4' Socket.

With the exception of "Compact Fluorescent Lamps," we found a very high rate of consistency between reported installations (program database) and those verified during site visits. The measures and their individual installation rates are shown in Table IV.5 below.

Table IV.5: Verification of Installation by Measure – SCE

Measure	Installed	Reported (Database)	Correct Installation Percentage
Compact Fluorescent Lamps	112	161	70%
4 Ft Fixtures T-8 (1 to 4 lamps)	1,627	1,629	100%
8ft Fixtures replaced by 4ft T-8 (1 to 4 lamps)	586	656	98%
8ft Fixtures replaced by 8ft T-8 (1 to 4 lamps)	80	82	98%
LED Exit Signs	14	16	88%
U-bend Tubes (2 lamp)	24	24	100%
T5	8	8	100%
Other	3	3	100%

The verified installation rate for all measures was 91%. Based on this realization rate, the SCE reported savings of 3,160,387 kWh should be reduced by 9% to 2,875,952 kWh. As of December 2002, SCE reported total net demand reduction of 670 kW. Modifying this by 9% provides a realized demand reduction of 610 kW.

For the CFLs, site visits revealed three key types of discrepancies: fewer fixtures found than recorded by the contractor; partial installation by the contractor with remaining CFLs provided “loose” to the participant; and removal of CFLs due to burn out or dissatisfaction. Note that excluding the CFL issues raises the overall realization rate for the remaining measures to 99% for both demand and energy savings.

Table IV.6 below provides the goals and the realized energy and demand savings for SCE. Even with the impact of the CFL realization rate on the realized savings, SCE exceeded both the energy and the demand goals (based on "Southern California Edison Company's 2002 Energy Efficiency Programs Final Fourth Quarter Report," May 1, 2003) by 12% and by 15%, respectively.

Table IV.6: Energy and Demand: Goals and Realized – SCE

	Goal	Realized	Realized vs. Goal
Energy Savings	2,569,570 kWh	2,875,952 kWh	112%
Demand Savings	529 kW	610 kW	115%

V. Conclusions

The evaluation results, from both surveys and site visits, indicate that these first year programs, designed to provide energy savings for very small businesses, were successful in many ways.

- Participants expressed high levels of satisfaction with the utilities' programs, including the energy assessment, the installation, and the measures.
- Participants in both programs reported an increase in their knowledge of energy efficiency in their business as a result of participation. Nonparticipants were more likely to report a higher level of knowledge of energy efficiency than were participants prior to program involvement. Nonparticipants were also more likely to report having taken energy efficiency actions in their businesses, including lighting installations, than were participants (before program involvement).
- SDG&E staff felt that using two separate contractors, one for assessment and one for installation, provided necessary "checks and balances" for quality control and gave focus to the educational component of the program. Using an assessment contractor, who emphasized "selling energy efficiency and not just free bulbs," resulted in customers' often reporting their reason for participating as "to learn more about energy efficiency" rather than to obtain free bulbs. SCE staff felt that using a single contractor to deliver both program components minimized intrusion on their customers' time and business functions. While participants in both programs, regardless of delivery type, expressed high levels of overall satisfaction, differences found between them included: SDG&E customers more often than SCE customers cited their reason for participation as wanting to learn more about energy efficiency (SCE customers more often said "to receive free bulbs"); and SCE participants gave somewhat lower ratings of satisfaction with the installer's timeliness than did SDG&E participants.
- Both utilities learned more about the eligible customer base for programs of this type. As a result, SDG&E has revised the energy assessment and educational component that focuses on energy actions that customers can take beyond lighting to better reflect the end uses and behaviors of the types of businesses participating. While lighting is clearly the measure that provides the most savings to small businesses, the longer-term goal of changing awareness of energy efficiency in the businesses is enhanced when customers learn of the many ways in which they can save energy.

- Self-reported freeridership is low, with few participants reporting they would have installed the measures in the absence of either of the programs.
- Both programs exceeded their energy and demand savings goals. Staff reported that the programs could easily serve many more customers, measures were clearly those needed by the small business customers, and need for the programs is clear due to the response levels in the first year of implementation.

Appendix A. Interview Guide and Customer Surveys

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:
 - 1 Not at all clear
 - 2 Somewhat clear
 - 3 Very clear
 - 9 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:
- 1 Not at all useful
 - 2 Somewhat useful
 - 3 Very Useful
 - 9 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?
- 1 Not at all important
 - 2 Somewhat important
 - 3 Very important
 - 9 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:
- 1 Not at all clear
 - 2 Somewhat clear
 - 3 Very clear
 - 9 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:

- 5 High level of understanding
- 4 Fairly high level of understanding
- 3 Some understanding
- 2 Fairly low level of understanding
- 1 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:

- 5 High level of understanding
- 4 Fairly high level of understanding
- 3 Some understanding
- 2 Fairly low level of understanding
- 1 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:
- 5 Very satisfied with all of the lighting
 - 4 Satisfied with most of the lighting
 - 3 Satisfied with only some of the lighting
 - 2 Satisfied with very little of the lighting
 - 1 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?
- 3 Very likely
 - 2 Somewhat likely
 - 1 Not at all likely
 - 9 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?

- 1 Very important
- 2 Somewhat important
- 3 Not at all important
- 9 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?

SDG&E Local Non-Residential Small Business Energy Assessment and EZ Turnkey

Participant Survey

Insert customer name:

Hello, my name is _____. I'm calling on behalf of San Diego Gas & Electric. We are following up with customers who we visited last year to recommend some energy-saving equipment they could install. You may have received some new equipment - such as new lighting- through our EZ Turnkey Program. Our records show that one of our technicians visited your business in (mo) ____ (yr)_____ to talk to you about energy savings and installing free equipment.

[If not sure, prompt again: “An SDG&E technician – probably carrying a ladder – stopped by your business, checked your building for ways to save energy, scheduled or installed some free energy saving equipment, such as new lighting, and offered ideas on other steps you could take to make your business more energy efficient and save money.” If still not certain, or does not want to participate, thank and terminate.]

Are you the person who worked with the SDG&E technician from Power Logic or American Lighting? [Probe with Ken Moss or Cesar if needed]

If yes, proceed.

If no, ask when that person will be available or how to contact (could be landlord)

INTRO

We are conducting a survey of customers who received energy surveys and various energy efficiency equipment to learn about their experience with the program. This information will help SDG&E to determine the energy savings achieved through the programs and improve its services to small business customers like you. All information will remain confidential. IF NEEDED: This survey will take about 10 minutes. Is this a good time to talk?

[If customer indicates this is not a good time, ask if you can call again and what might be a good time to do so. RECORD TIME FOR CALLBACK:

_____]

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): _____

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

- To understand more about how energy costs are determined
- To learn more about ways to reduce energy costs
- To get free lighting and other equipment
- A neighboring business or friend participated
- A 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:

- 1 Not at all clear
- 2 Somewhat clear
- 3 Very clear
- 9 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:

- 1 Not at all useful
- 2 Somewhat useful
- 3 Very Useful
- 9 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:

- 1 Not at all important
- 2 Somewhat important
- 3 Very important
- 9 Don't know/don't remember (do not read)

6. Second, the technician provided information about the EZ Turnkey Program and the free equipment that could be installed in your business. How clear was this information? Would you say it was:
- 1 Not at all clear
 - 2 Somewhat clear
 - 3 Very clear
 - 9 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:
- 5 High level of understanding
 - 4 Fairly high level of understanding
 - 3 Some understanding
 - 2 Fairly low level of understanding
 - 1 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:
- 5 High level of understanding
 - 4 Fairly high level of understanding
 - 3 Some understanding
 - 2 Fairly low level of understanding
 - 1 No real understanding

Now, I would like to ask you about the installation of the lighting or other 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

Our records show that you had a variety of new energy efficient equipment installed in your business. I would like to ask you a few questions about this equipment.

15. [Equipment from database] – ex. Lighting

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:

- 5 Very satisfied with all of the lighting
- 4 Satisfied with most of the lighting
- 3 Satisfied with only some of the lighting
- 2 Satisfied with very little of the lighting
- 1 Not satisfied with any of the lighting

15c. What is the likelihood that you would have installed the lighting in the next two years if this program had not been available? Would you say it was:

- 3 Very likely
- 2 Somewhat likely
- 1 Not at all likely
- 9 Don't know/not sure

16. [Equipment from database] – ex. Light sensor

Is the light sensor(s) installed operating at this time?

- Yes [GO TO Q. 16b]
- No

16a. If not operating: why is the sensor(s) not operating?

16b. How satisfied have you been with the light sensor installed in your business? Would you say:

- 5 Very satisfied
- 4 Somewhat satisfied
- 3 Neither satisfied nor dissatisfied
- 2 Somewhat dissatisfied
- 1 Not satisfied with any of the lighting

16c. What is the likelihood that you would have installed the light sensor within the next two years if this program had not been available? Would you say it was:

- 3 Very likely
- 2 Somewhat likely
- 1 Not at all likely
- 9 Don't know/not sure

17. [Equipment from database] – ex. Programmable thermostat

Is the programmable thermostat installed operating at this time?

- Yes [GO TO Q. 17b]
- No

17a. If not operating: why is the programmable thermostat not operating? _____

17b. How satisfied have you been with the programmable thermostat installed in your business? Would you say:

- 5 Very satisfied
- 4 Somewhat satisfied
- 3 Neither satisfied nor dissatisfied
- 2 Somewhat dissatisfied
- 1 Not satisfied with any of the lighting

17c. What is the likelihood that you would have installed the programmable thermostat within the next two years if this program had not provided it? Would you say it was:

- 3 Very likely
- 2 Somewhat likely
- 1 Not at all likely
- 9 Don't know/not sure

[Equipment to continue as needed with same series of questions for each]

18. The technician may have recommended other actions, beyond the free equipment installed, which could help reduce your energy costs. Do you remember these recommendations?

- Yes
- No [GO TO Q.19]

18a. Have you adopted any of those recommendations?

- Yes
- No [GO TO Q. 18c]

18b. What actions have you taken?

18c. Do you plan to take any of these actions the future?

- Yes [GO TO Q. 19]
- No
- Don't know [GO TO Q19]

18d. Why have you decided not to do the recommended actions?

19. Have you noticed savings on your energy bill?

- Yes
- No

20. In addition to savings on your bill, what other benefits, if any, have you seen from the new equipment – lighting, etc. – that were installed?

21. Had you made energy saving improvements in your business prior to participation in these programs?

- Yes
- No [GO TO Q. 21b]

21a. What improvements had you made? _____

21b. Why had you not made improvements before? _____

22. Have you participated in any SDG&E programs prior to this one?

- Yes
- No [GO TO Q. 23]
- Don't know/don't remember [GO TO Q. 23]

22a. Which programs? _____

23. Have you participated in any SDG&E programs since you received the energy survey and free equipment?

- Yes
- No [GO TO Q.24]

23a. Which programs? _____

24. In deciding to have the energy survey and install the lighting, how important was it to you that SDG&E was providing the program?

- 1 Very important
- 2 Somewhat important
- 3 Not at all important
- 9 Don't know/not sure

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

25. What are the main uses of energy in your business?

- Lighting
- Air conditioning
- Refrigeration
- Cooking
- Other: (Specify _____)

25b. For each listed: What fuel is used to power this use?

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

27. Do you have any comments or suggestions about the Small Business Energy Survey and EZ Turnkey programs?

Those are all the questions I have for you today. I would like to thank you for your time and for participating in the SDG&E program.

Interview Guide: Stakeholders

SDG&E: Small Business Assessments and “EZ” Turnkey Programs

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

Program Design

1. What has been your role in the design and implementation of the program?

What are your current responsibilities?
2. How would you describe the contributions of the various stakeholders to the program’s design and delivery?
3. How was communication between stakeholders conducted? Has this been effective throughout the project?
4. IMPLEMENTERS ONLY: What motivated you to apply to implement the program? (Explore: fee levels, past experience)

Program Goals and Objectives.

1. Some of the program goals are stated in terms of the number assessed while others in terms of energy savings. Did this cause any confusion regarding goals and objectives?
2. To what extent were customer needs reflected in the programs’ goals?

How was this ensured?
3. To what extent were the goals reasonable, given budgets, timeline, and history with these market sectors?

4. To what extent did the program design support of participation in both programs? Can you describe how this has worked in implementation?
5. IMPLEMENTERS: How would you characterize your experience of identifying qualified customers? (Probe: using the database; initial efforts)

Program Success

1. The program implementation – using two contractors performing different aspects of program delivery – was key to meeting program goals. How did this work in practice?
2. To what extent were the marketing efforts effective in reaching the targeted customer? What has been their response to program materials?
3. Has the program meet established goals and objectives? (explore links between SBEA and EZ Turnkey and challenges this posed for program goals)
 - 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? (explore role of database in communication and delivery)
 - 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 might these barriers be addressed in the future?

Overall Implementation

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

SDG&E [SCE] Local Non-Residential Small Business Energy Assessment and EZ Turnkey [Small Business Lighting Retrofit Program]

Nonparticipant Type I (Information only) and III (Information & Audit, no measures)

Utility: _____

Contractor: _____

Customer name: _____

Hello, my name is _____. I'm calling on behalf of SDGE/SCE. We are following up with small business customers who are eligible for an energy survey and free equipment – such as lighting - from SDG&E/SCE. Last year, one of our technicians contacted your business. Are you the person who was contacted by an SDG&E/SCE technician about the survey and equipment available?

If yes, continue.

If no: is there someone else in your business that would know about this?

If yes, ask for name and contact time or number.

If no, Thank and end.

Do you have a few moments to answer some questions about energy use in your business?

If yes, proceed.

If no, ask if we can schedule a time to call back

Intro

- 1. First, have you taken any actions in the past two years to conserve energy in your business?
 - Yes
 - No [GO TO Q.2]
 - Don't know/don't remember [GO TO Q.2]

1a. What actions have you taken?

Use code if mentioned:

- 1 Energy efficient lighting
- 2 Replaced old equipment with more energy efficient (refrigeration, office equipment, motion sensors, hot water – specify: _____)
- 3 Installed weatherization measures (caulk, weatherstripping, ee windows)
- 4 Reduced water heating temperature
- 5 Reduced heating/ac temperature
- 6 Programmable thermostat
- 7 Light sensor
- 8 Other (Specify _____)

2. Did you take any of these actions with assistance from an SDG&E/SCE program?

- Yes
- No [GO TO Q. 2b]

2a. Which program(s)? _____

2b. Did you take these actions with assistance from a program sponsored by some other organization?

- Yes
- No [GO TO Q. 3]

2c. Which agency or organization provided this assistance? _____

3. On a scale where 1 indicates “no real understanding” and 5 indicates “high level of understanding, how would you rate your understanding of how to improve your business’s energy efficiency? Would you say:

- 5_ High level of understanding
- 4_ Fairly high level of understanding
- 3_ Some understanding
- 2_ Fairly low level of understanding
- 1_ No real understanding

4. When the SDG&E/SCE technician called on you about the availability of a free energy survey and energy efficient equipment, what did you think of the offer?

5. Did the technician leave information with you about the program?

- Yes
- No [GO TO Q. 6]
- Don't know/don't remember [GO TO Q. 6]

5a. How clear was this information? Would you say it was:

- 1 Not at all clear
- 2 Somewhat clear
- 3 Very clear
- 4 Don't know/don't remember

FOR THOSE WITH NO AUDIT: (SDG&E and SCE:Catalina)

6. What is the main reason you chose not to have the energy survey and install the equipment offered?

- 1 Already installed efficient lighting
- 2 Just not interested
- 3

FOR THOSE WITH AUDIT BUT NO INSTALLATION: (SCE: CRI – faxed list)

What is the main reason you chose not to install the equipment offered?

7. Would you be interested in participating if this program were offered again?

- Yes [GO TO Q. 8]
- No
- Not sure/it depends

7a. Why are you not interested in future programs (or not sure if you would like to participate)? _____

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

8. What are the main uses of energy in your business?
- Lighting
 - Air conditioning
 - Refrigeration
 - Cooking
 - Other (Specify _____)
- 8b. For each listed: What fuel is used to power this use? _____
8. What other factors affect how you use energy in your business?
9. SDG&E [SCE] is interested in the needs of small business customers. Do you have any comments or suggestions about how the utility might better meet your energy needs?

These are all the questions I have for you today. I would like to thank you for your time.

SDG&E [SCE] Local Non-Residential Small Business Energy Assessment and EZ Turnkey [Small Business Lighting Retrofit Program]

Nonparticipant Type II (No exposure to Program)

Utility: _____

Customer name: _____

Hello, my name is _____. I'm calling on behalf of SDGE/SCE. We are doing a brief survey with small business customers to explore possible ways in which we might help them save energy. Are you the person who pays the utility bill and/or makes decisions about energy use in your business?

If yes, continue.

If no: is there someone else in your business that would know about this?

If yes, ask for name and contact time or number.

If no, Thank and end.

Do you have a few moments to answer some questions about energy use in your business? (Five minutes or less)

If yes, proceed.

If no, ask if we can schedule a time to call back

Intro

1. First, have you taken any actions in the past two years to conserve energy in your business?

- Yes
- No [GO TO Q.2]
- Don't know/don't remember [GO TO Q.2]

1a. What actions have you taken? _____

Use code if mentioned:

- 1 Energy efficient lighting
- 2 Replaced old equipment with more energy efficient (refrigeration, office equipment, motion sensors, hot water – specify: _____)
- 3 Installed weatherization measures (caulk, weatherstripping, ee windows)
- 9 Reduced water heating temperature
- 10 Reduced heating/ac temperature
- 11 Programmable thermostat
- 12 Light sensor
- 13 Other (Specify _____)

2. Did you take any of these actions with assistance from an SDG&E/SCE program?

- Yes
- No [GO TO Q. 2b]

2a. Which program(s)? _____

2b. Did you take these actions with assistance from a program sponsored by some other organization?

- Yes
- No [GO TO Q. 3]

2c. Which agency or organization provided this assistance? _____

3. On a scale where 1 indicates “no real understanding” and 5 indicates “high level of understanding, how would you rate your understanding of how to improve your business’s energy efficiency? Would you say:
- 5 High level of understanding
 - 4 Fairly high level of understanding
 - 3 Some understanding
 - 2 Fairly low level of understanding
 - 1 No real understanding
4. What are the main uses of energy in your business?
- Lighting
 - Air conditioning
 - Refrigeration
 - Cooking
 - Other (Specify _____)
- 4b. For each listed: What fuel is used to power this use? _____
5. What other factors affect how you use energy in your business?
- _____
- _____
6. SDG&E [SCE] is interested in the needs of small business customers. Do you have any comments or suggestions about how the utility might better meet your energy needs?

These are all the questions I have for you today. I would like to thank you for your time.

Appendix B.

Site Visit Sample/Population: Comparison by Type of Business

The categories of business types in the population were inferred by Quantec staff from business name and, in the sample, from knowledge of business gained during site visits. We expect some error in inference of business types by name alone in the database; thus, population percentages by business are solely estimates. (Database did not include SIC code to allow more accurate characterization of business types).

Table B.1: Participant Business Type

Business Type	SDG&E		SCE	
	Population %	Sample %	Population %	Sample %
Automotive	1.3%	0.0%	12.3%	14.3%
Barber/ Beauty Salon	10.2%	5.4%	8.9%	5.7%
Church	0.3%	0.0%	1.4%	0.0%
Dry Cleaners	0.6%	0.0%	3.1%	2.9%
Medical	5.2%	2.7%	6.9%	11.4%
Office	14.6%	18.9%	16.9%	14.3%
Restaurant	6.5%	16.2%	3.0%	5.7%
Retail	23.9%	32.4%	27.1%	31.4%
School	0.8%	0.0%	0.9%	0.0%
Service	36.6%	24.3%	19.5%	14.3%
	100.0%	100.0%	100.0%	100.0%

Appendix C. Cross-Utility Data

Participants

Table C.1
How did you learn about the program?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Walk in contact by technician	63	90%	57	81%	120	86%
Other	5	7%	9	13%	14	10%
From a friend or business contact (word-of-mouth)	2	3%	4	6%	6	4%
	70	100%	70	100%	140	100%

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

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
To learn more about ways to reduce energy costs	23	33%	47	67%	70	50%
To get free lighting and other equipment	46	66%	21	30%	67	48%
Technician indicated energy survey would help you	.	.	2	3%	2	1%
Another business or friend participated	1	1%	.	.	1	1%
	70	100%	70	100%	140	100%

Table C.3
How clear was the form used by the technician to calculate your potential savings?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Very clear	41	59%	37	53%	78	56%
Somewhat clear	7	10%	1	1%	8	6%
Do not know/do not remember	22	31%	32	46%	54	39%
	70	100%	70	100%	140	100%

Table C.4
How useful was this information about energy use for your business?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Very useful	36	51%	25	36%	61	44%
Somewhat useful	9	13%	13	19%	22	16%
Not at all useful	3	4%	2	3%	5	4%
Do not know/do not remember	22	31%	30	43%	52	37%
	70	100%	70	100%	140	100%

Table C.5
How important was the information on this form in helping you decide to install the new equipment?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Very important	30	43%	25	36%	55	39%
Somewhat important	12	17%	14	20%	26	19%
Not at all important	6	9%	1	1%	7	5%
Do not know/do not remember	22	31%	30	43%	52	37%
	70	100%	70	100%	140	100%

Table C.6
How clear was the information presented to you about the Small Business Lighting Retrofit Program?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Very clear	61	87%	47	67%	108	77%
Somewhat clear	3	4%	1	1%	4	3%
Not at all clear	.	.	2	3%	2	1%
Do not know/do not remember	6	9%	20	29%	26	19%
	70	100%	70	100%	140	100%

Table C.7
Was the survey completed at a time that was convenient to you?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	68	97%	66	94%	134	96%
No	1	1%	3	4%	4	3%
Do not know/do not remember	1	1%	1	1%	2	1%
	70	100%	70	100%	140	100%

Table C.8
Did the technician complete the energy survey in a reasonable length of time?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	68	97%	69	99%	137	98%
No	1	1%	.	.	1	1%
Do not know/do not remember	1	1%	1	1%	2	1%
	70	100%	70	100%	140	100%

Table C.9
Did you have any issue or concerns with the energy survey?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	4	6%	2	3%	6	4%
No	65	93%	66	94%	131	94%
Do not know/do not remember	1	1%	2	3%	3	2%
	70	100%	70	100%	140	100%

Table C.10
Before you participated in this program, what was your understanding of how to improve your business's energy efficiency?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
High level of understanding	8	11%	11	16%	19	14%
Fairly high level of understand	13	19%	12	17%	25	18%
Some understanding	23	33%	17	24%	40	29%
Fairly low level of understanding	12	17%	15	21%	27	19%
No real understanding	14	20%	15	21%	29	21%
	70	100%	70	100%	140	100%

Table C.11
After you participated in this program, what was your understanding of how to improve your business's energy efficiency?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
High level of understanding	16	23%	28	40%	44	31%
Fairly high level of understanding	26	37%	24	34%	50	36%
Some understanding	17	24%	9	13%	26	19%
Fairly low level of understanding	6	9%	4	6%	10	7%
No real understanding	5	7%	5	7%	10	7%
	70	100%	70	100%	140	100%

Table C.12
Was the installation of equipment scheduled at a time that was convenient to you?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	63	90%	66	94%	129	92%
No	7	10%	4	6%	11	8%
	70	100%	70	100%	140	100%

Table C.13
Did the installer arrive at the agreed upon time?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	59	84%	63	90%	122	87%
No	8	11%	4	6%	12	9%
Do not know/do not remember	3	4%	3	4%	6	4%
	70	100%	70	100%	140	100%

Table C.14
Did they call to inform you of the change in time?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	.	.	2	3%	2	1%
No	7	10%	3	4%	10	7%
Do not know/do not remember	1	1%	.	.	1	1%
N/A	62	89%	65	93%	127	91%
	70	100%	70	100%	140	100%

Table C.15
Did the installer complete the installation in a reasonable length of time?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	67	96%	67	96%	134	96%
No	1	1%	2	3%	3	2%
Do not know/do not remember	2	3%	1	1%	3	2%
	70	100%	70	100%	140	100%

Table C.16
How much of the lighting equipment installed is operating in your business at this time?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
All	66	94%	62	89%	128	91%
Some	4	6%	7	10%	11	8%
None	.	.	1	1%	1	1%
	70	100%	70	100%	140	100%

Table C.17
How satisfied have you been with the lighting installed in your business?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Very satisfied with all of the lighting	62	89%	59	84%	121	86%
Satisfied with most of the lighting	7	10%	9	13%	16	11%
Satisfied with only some of the lighting	1	1%	2	3%	3	2%
	70	100%	70	100%	140	100%

Table C.18
What is the likelihood that you would have installed the lighting within the next two years if this program had not been available?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Very likely	2	3%	3	4%	5	4%
Somewhat likely	4	6%	11	16%	15	11%
Not at all likely	62	89%	54	78%	116	83%
Do not know/do not remember	2	3%	1	1%	3	2%
	70	100%	69	100%	140	100%

Table C.19
Have you noticed savings on your energy bill?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	36	51%	41	59%	77	55%
No	6	9%	14	20%	20	14%
Do not know/do not remember	28	40%	15	21%	43	31%
	70	100%	69	100%	140	100%

Table C.20
Had you made energy savings improvements in your business prior to participation in the program?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	24	34%	26	37%	50	36%
No	46	66%	41	59%	87	62%
Do not know/do not remember	.	.	3	4%	3	2%
	70	100%	70	100%	140	100%

Table C.21
Have you participated in any utility sponsored programs before?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	4	6%	6	9%	10	7%
No	66	94%	64	91%	130	93%
	70	100%	70	100%	140	100%

Table C.22
Have you participated in any utility sponsored programs since you received the energy survey and free equipment?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	.	.	1	1%	1	1%
No	70	100%	69	99%	139	99%
	70	100%	70	100%	140	100%

Table C.23
In deciding to participate, how important was it to you that your utility was providing the program?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Very important	57	81%	49	70%	106	76%
Somewhat important	7	10%	7	10%	14	10%
Not at all important	4	6%	12	17%	16	11%
Do not know/do not remember	2	3%	2	3%	4	3%
	70	100%	70	100%	140	100%

Table C.24
Participant End-Uses

Action Taken	SCE				SDGE				Overall			
	Yes		No		Yes		No		Yes		No	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Lighting	70	100%	0	0%	70	100%	0	0%	140	100%	0	0%
Space heating	11	16%	59	84%	22	31%	48	69%	33	24%	107	76%
Air conditioning	55	79%	15	21%	34	49%	36	51%	89	64%	51	36%
Refrigeration	13	19%	57	81%	16	23%	54	77%	29	21%	111	79%
Cooking	4	6%	66	94%	7	10%	63	90%	11	8%	129	92%
Computers	43	61%	27	39%	27	39%	43	61%	70	50%	70	50%
Other electronics	34	49%	36	51%	15	21%	55	79%	49	35%	91	65%
Water heater	11	16%	59	84%	7	10%	63	90%	18	13%	122	87%

**Table C.25
Participant Fuel Type by End-Use**

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Space Heating						
Electric	4	6%	17	24%	21	15%
Gas	7	10%	5	7%	12	9%
NA	59	84%	48	69%	107	76%
Water heating						
Gas	5	7%	4	6%	9	6%
Electric	6	9%	3	4%	9	6%
NA	59	84%	63	90%	122	87%
Air Conditioning						
Electric	55	79%	34	49%	89	64%
NA	15	21%	36	51%	51	36%
Cooking						
Gas	4	6%	4	6%	8	6%
Electric	.	.	3	4%	3	2%
NA	66	94%	63	90%	129	92%

Nonparticipants, Types 1 and 3

**Table C.26
Have you taken any actions in the past two years to conserve energy at your business?**

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	5	45%	5	33%	10	38%
No	5	45%	10	67%	15	58%
Do not know/do not remember	1	9%	.	.	1	4%
	11	100%	15	100%	26	100%

Table C.27
What actions have you taken in the past two years to conserve energy at your business?

Action Taken	SCE				SDGE				Overall			
	Yes		No		Yes		No		Yes		No	
	Freq	%	Freq	%	Freq	%	%	Freq	%	%	Freq	%
Installed Energy Efficient Lighting	2	18%	9	82%	4	27%	11	73%	6	23%	20	77%
Replaced Old Equipment with EE Equipment	.	.	11	100%	1	7%	14	93%	1	4%	25	96%
Weatherization	.	.	11	100%	.	.	15	100%	.	.	26	100%
Lowered Hot Water Setting	.	.	11	100%	.	.	15	100%	.	.	26	100%
Adjusted Room Temp. Setting	.	.	11	100%	.	.	15	100%	.	.	26	100%
Installed Programmable Thermostat	1	9%	10	91%	.	.	15	100%	1	4%	25	96%
Installed Light Sensor	.	.	11	100%	.	.	15	100%	.	.	26	100%
EE Behavioral Change	2	18%	9	82%	1	7%	14	93%	3	12%	23	88%
Other	1	9%	10	91%	.	.	15	100%	1	4%	25	96%

Table C.28
How would you rate your understanding of how to improve your business's energy efficiency?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
High level of understanding	1	9%	3	20%	4	15%
Fairly high level of understand	2	18%	4	27%	6	23%
Some understanding	5	45%	5	33%	10	38%
Fairly low level of understanding	2	18%	2	13%	4	15%
No real understanding	1	9%	1	7%	2	8%
	11	100%	15	100%	26	100%

Table C.29
Did the technician leave information with you about the program?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	4	36%	5	33%	10	38%
No	2	18%	.	.	15	58%
Do not know/do not remember	5	45%	10	67%	1	4%
	11	100%	15	100%	26	100%

Table C.30
How clear was this information?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Very clear	1	9%	1	7%	2	8%
Somewhat clear	1	9%	.	.	1	4%
Not at all clear	1	9%	.	.	1	4%
Do not know/do not remember	1	9%	4	27%	5	19%
N/A	7	64%	10	67%	17	65%
	11	100%	15	100%	26	100%

Table C.31
What is the main reason you chose not to have the energy survey and install the equipment offered?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Already installed efficient lighting	.	.	3	20%	3	12%
Program does not apply to business	.	.	9	60%	9	34%
Other	9	82%	3	20%	12	46%
N/A	2	18%	.	.	2	8%
	11	100%	15	100%	26	100%

Table C.32
Would you be interested in participating if this program were offered again?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	9	82%	7	47%	16	62%
No	.	.	1	7%	1	4%
Not sure	2	18%	3	20%	5	19%
If program was modified	.	.	4	27%	4	15%
	11	100%	15	100%	26	100%

**Table C.33
Non-Participant End-Uses**

	SCE				SDGE				Overall			
	Yes		No		Yes		No		Yes		No	
	Freq	%	Freq	%	Freq	%	%	Freq	%	%	Freq	%
Lighting	11	100%	.	.	15	100%	.	.	26	100%	.	.
Space heating	2	18%	9	82%	1	7%	14	93%	2	8%	24	92%
Air conditioning	8	73%	3	27%	7	47%	8	53%	15	58%	11	42%
Refrigeration	2	18%	9	82%	1	7%	14	93%	3	12%	23	88%
Cooking	1	9%	10	91%	.	.	15	100%	1	4%	25	96%
Computers	.	.	11	100%	6	40%	9	60%	6	23%	20	77%
Other electronics	4	36%	7	64%	4	27%	11	73%	8	31%	18	69%
Water heater	3	27%	8	73%	1	7%	14	93%	4	15%	22	85%

**Table C.34
Participant Fuel Type by End-Use**

Fuel Use	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Space Heating						
Electric	.	.	1	7%	1	4%
Gas	2	18%	.	.	2	8%
NA	9	82%	14	93%	23	88%
Water heating						
Gas	3	27%	1	7%	4	15%
NA	8	73%	14	93%	22	85%
Air Conditioning						
Electric	8	73%	7	47%	15	58%
NA	3	27%	8	53%	11	42%
Cooking						
Gas	1	9%	.	.	1	4%
NA	10	91%	15	100%	25	96%

Nonparticipants, Type 2

Table C.35

Have you taken any actions in the past two years to conserve energy at your business?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Yes	7	67%	6	40%	16	53%
No	5	33%	8	53%	13	43%
Do not know/do not remember	.	.	1	7%	1	3%
	15	100%	15	100%	30	100%

Table C.36

What actions have you taken in the past two years to conserve energy at your business?

Action Taken	SCE				SDGE				Overall			
	Yes		No		Yes		No		Yes		No	
	Freq	%	Freq	%	Freq	%	%	Freq	%	%	Freq	%
Installed Energy Efficient Lighting	2	13%	13	53%	1	7%	14	93%	3	10%	27	90%
Replaced Old Equipment with EE Equipment	6	40%	9	60%	2	13%	13	87%	8	27%	22	73%
Weatherization	2	13%	11	87%	.	.	15	100%	2	7%	28	93%
Lowered Hot Water Setting	.	.	0	100%		100%	15	100%	.	.	30	100%
Adjusted Room Temp. Setting	3	20%	12	80%		100%	15	100%	3	10%	27	90%
Installed Programmable Thermostat	1	7%	14	93%	1	7%	14	93%	2	7%	28	93%
EE Behavioral Change	4	27%	11	73%	6	40%	9	60%	10	33%	20	66%
Other	.	.	15	100%	1	7%	14	93%	1	3%	29	97%

Table C.37
How would you rate your understanding of how to improve your business's energy efficiency?

	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
High level of understanding	2	13%	3	20%	4	15%
Fairly high level of understand	3	20%	4	27%	6	23%
Some understanding	7	47%	5	33%	10	38%
Fairly low level of understanding	2	13%	2	13%	4	15%
No real understanding	1	7%	1	7%	2	8%
	15	100%	15	100%	26	100%

Table C.38
Non-Participant End-Uses

	SCE				SDGE				Overall			
	Yes		No		Yes		No		Yes		No	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Lighting	15	100%	.	.	15	100%	.	.	30	100%	.	.
Space heating	4	27%	11	73%	9	60%	6	40%	13	52%	12	48%
Air conditioning	14	93%	1	7%	12	73%	3	27%	26	87%	4	13%
Refrigeration	3	20%	12	80%	1	7%	14	93%	4	13%	21	87%
Cooking	1	7%	14	93%	1	7%	14	93%	2	7%	28	93%
Computers	10	67%	5	33%	9	60%	6	40%	19	63%	11	37%
Other electronics	7	47%	8	53%	10	67%	5	33%	17	57%	13	43%
Water heater	4	27%	11	73%	4	27%	11	73%	8	27%	22	73%

**Table C.39
Participant Fuel Type by End-Use**

Fuel Use	SCE		SDGE		Overall	
	Freq.	%	Freq.	%	Freq.	%
Space Heating						
Electric	2	13%	8	53%	10	33%
Gas	2	13%	1	7%	3	10%
NA	11	73%	6	40%	17	57%
Water heating						
Gas	4	27%	1	7%	5	17%
Electric	.	.	3	20%	3	10%
NA	11	73%	11	73%	22	73%
Air Conditioning						
Electric	14	93%	12	80%	26	87%
NA	1	7%	3	20%	4	13%
Cooking						
Gas	1	7%	1	7%	2	7%
NA	14	93%	14	93%	28	93%