

# **Final EM&V Report for Technical Assistance Program (CPUC 1304-04)**

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## ***1. Introduction***

The Technical Assistance Program is designed to provide technical information and support to local public agencies and businesses in the San Diego region. As an informational program, the goal of the program is to assist a business or agency develop a comprehensive energy management strategy, audit their facilities, and provide technical assistance to implement cost effective energy measures. The program attempts to educate business owners and managers and agency representatives on energy efficient practices and new technologies through case studies, feasibility studies, and working group meetings. The program focuses on public agencies, as well as industrial, manufacturing, and healthcare businesses. The ultimate goals of program over the 2004 – 2005 period are to complete seven best practice case studies, 150 energy opportunity assessments (facility audits), four feasibility studies, and seven working group meetings. In addition, qualitative goals include improved delivery of energy information and technical assistance to specific market segments.

Given the program goals, the EM&V activity for this program addresses the following CPUC goals (see page 26 of the Energy Efficiency Policy Manual).

- (1) *Baseline analysis and market assessment.* A review of evaluations for similar California programs was conducted. These were searched for relevant baseline analyses and market assessments as described in the Research Plan. They did not provide usable baselines for the TAP program. Yet, the literature review did provide useful information for this evaluation. No further baseline analysis or market assessment was possible given the limited budget and scope of the evaluation project.
- (2) *On-going feedback, and corrective and constructive guidance regarding the implementation of the program.* One of the primary objectives of this report is to provide conclusions and trends in order to inform the program so that they can be used for corrective action in future manifestations of the Technical Assistance Program. For example, if we were to discover that there was excessive free-ridership, then program details could be altered to offset this behavior (see Section 7).

- (3) *An overall assessment of the performance and success of the program.* Both performance relative to the program goals specified above and customer satisfaction with all program elements are used as measures of program success.
- (4) *An assessment of whether there is a continuing need for the program* (see Section 7).

This final report is organized as follows. In the next section, we present the baseline Analysis. Our review of program specifics and program materials and procedures is the subject of section 3. Our evaluation of program progress through December 31, 2005 is presented in sections 4, 5, and 6. Concluding remarks are detailed in the final section.

## **2. Baseline Analysis**

### **2.1 Introduction**

The objective of our limited literature review was to search for readily available baseline data and to determine the existence and relevance of previous evaluations of comprehensive technical assistance programs. Zebedee & Associates conducted a review of the literature, primarily using the California Measurement Advisory Committee website (<http://www.calmac.org/>), the California Energy Commission website (<http://www.energy.ca.gov/>), and several energy efficiency related websites to determine whether or not baseline data exist for programs similar to SDREO's Technical Assistance Program (TAP).<sup>1</sup> Our literature search produced the following three conclusions. First, there are no readily available baseline data that could be drawn upon for this evaluation. Second, nevertheless there exists several other highly regarded programs similar to the SDREO program. Third, there is recent evidence regarding the effectiveness of a technical assistance program directed at public agencies and businesses. In addition, the Public Agency Focus Group study was quite useful in establishing guidelines for evaluating effectiveness. Consider each of these conclusions in detail below.

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<sup>1</sup> Due to both budgetary and relevance reasons the literature review is limited to California. Our conclusions are therefore limited to California experiences.

## ***2.2 Programs Similar to the Technical Assistance Program***

There exist two programs in California that are quite similar to SDREO's Technical Assistance Program. These are the Local Government and Community Energy Efficiency Program (LGCEE) and the Local Energy Assistance Program (LEAP).

The LGCEE program recruits local government participation through supporting startup of a Community Energy Authority and provides: (1) local government support for retrofitting single-family and multi-family homes and small to medium-sized businesses; (2) assistance in performing energy efficiency analysis, design, and implementation services; (3) assistance in performing audits of local government facilities; and (4) provision of third party financing of energy efficient building retrofits. The ultimate objective is to have educated local governments incorporate energy efficiency into planning and to be responsive to community concerns in this area. The program addresses key market barriers such as performance uncertainty, access to financing, hassle/transaction costs, asymmetric information, and service or product unavailability. The indicators of success include the number of participating local governments, the number of implemented energy saving projects, and the institutionalization of energy efficiency in local planning processes or codes. The expectation is that a mature program would be self-sustaining, once market transformation has occurred.

The LEAP program also attempts to use local governments, and by extension developers, to increase energy efficiency awareness and implementation. The program includes: (1) free consulting services to analyze development plans, public works standards and ordinances; (2) guidelines for developing energy efficient ordinances and standards (e.g., street design, solar access, tree siting); and (3) energy audits of municipal facilities. The corresponding market effects include influencing local government approval processes, making routine the process of conducting energy audits and using the results to implement energy efficiency improvements, and encouraging developers to voluntarily adopt more energy efficient construction processes. The LEAP program has been successful in achieving these market effects as exemplified by: (1) the reduction of street widths in the San Joaquin Valley (reducing ambient temperatures and reducing residential cooling bills); (2) the systematic inclusion of energy efficiency considerations in the planning process leading to newly constructed homes exceeding Title 24 by more

than ten percent; and (3) increasing the number of homes in developments with north-south orientation, which reduces heating and cooling energy usage by 5 – 10 percent.

### ***2.3 Effective Technical Assistance Programs***

There are several important design factors that increase the probability of long-term program success (see VPI Consulting, 2001). These factors, gleaned from the Public Agencies Focus Group study, are divided into three specific areas (information, seminar/workshop design, and technical assistance).

The information related factors include the following:

- an objective database of previously successful energy efficiency projects;
- a central clearinghouse of information regarding products and programs;
- an automatic alert system regarding publications, websites, etc.; and
- a detailed categorization of legislative/regulatory information and actions.

The important seminar/workshop factors include:

- targeted solicitations;
- increased frequency of basic classes;
- technology showcases;
- alternative locations with sensitivity to traffic patterns; and
- small-scale operational training.

Finally, the technical assistance factors include:

- links between technology and energy behavior;
- site-specific audits/visits;
- customer energy policy planning
- analysis tools or links to analysis to prevent excessive duplication; and
- a web-based input system for sharing success stories.

In addition, it is important to understand the reasons why individual agencies and businesses participate in energy efficiency programs. For example, financial incentives,

guaranteed savings, and perceived value are reasons generally offered to explain participation.

#### ***2.4 Previous Measurement and Evaluation Studies***

The most relevant previous study, conducted by Thayer and Zebedee (2004), evaluated the SDREO Public Agency Information and Technical Assistance Program. The following components of the program were evaluated: (1) the program theory and approach; (2) the success of program implementation; (3) the level of participation, relative to projections; (4) program success in raising awareness and affecting decisions of participants to implement the energy efficiency and demand reduction measures; and (5) any unanticipated outcomes/results.

The program theory and approach refers to both how the program is to operate in the field (implementation theory) and why the program is expected to lead to specific outcomes (program theory). The Public Agency Information and Technical Assistance program was designed to flow from initial contact to workshop attendance to program participation to energy audits of participant facilities to formation of an energy management team to development of an energy action plan to energy efficiency investments and changes in energy use behavior. Thus, there are several linkages that affect the overall performance of the program. For example, ultimate program success requires that SDREO effort directly lead to participant action and corresponding energy savings. On the contrary, a flawed program theory would have linkages that are poorly designed so that the program does not meet its stated objectives (e.g., difficulty finding potential participants, poorly done audits, no change in awareness or behavior).

Success of implementation refers to the quality of the program materials, the ability of the program to reach the intended audience, and the resulting action taken by participants. Success implies that SDREO effort leads to participation and ultimate action on the part of participants.

Level of participation, relative to projections is simply an analysis of program activity compared to program goals. There was also an allowance for the program to receive extra credit for surpassing its stated goals.

Program success in raising awareness and affecting decisions is dependent on the program participant's response to program initiatives. For example, for an information

only program we would expect that a large majority of program participants felt that the program changed their knowledge of energy issues. A program designed to create energy savings would be evaluated according to the magnitude of actual savings.

Finally, Thayer and Zebedee (2004) accounted for any unexpected developments by evaluating the occurrence of any unusual program results. For example, excessive free-ridership, or audits that produce irrelevant energy efficiency recommendations would be cause for downgrading the program effectiveness.

Thayer and Zebedee found the program theory to be essentially sound, in that the information only program was directed at important segment of energy use. In addition, the program materials were considered adequate. In terms of implementation success, there were a large number of contacts, and the number free audits provided to a variety of organizations satisfied program goals, although many participating organizations were familiar with energy efficiency. Also, participating customers were overwhelming satisfied with the services received. The energy team and energy action plan links seemed to be weak links, although this did not seem to hamper overall participation or adoption of ultimate energy efficiency measures.

The ultimate level of participation, as measured by number of workshops, the number of participants, the number of audits and feasibility studies, certainly met expectations. In addition, there seemed to be significant spillovers from the program in that participants shared information regarding the program and energy saving schemes. However, contracting issues may have inadvertently limited participation and the program participants were generally quite knowledgeable regarding energy issues so that the change in awareness and decision-making due to program participation may have been smaller than expected. There may also have been excessive free-ridership as most participants might have completed energy efficiency projects without the program. In addition, some of the audits were deemed incomplete or insufficiently thorough. These final two issues were considered unanticipated outcomes.<sup>2</sup>

### ***2.5 Lessons Learned from Abbreviated Literature Review***

The baseline analysis produced the following conclusions.

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<sup>2</sup> Future evaluations of the Technical Assistance Program should include the National Best Practices Study as a benchmark where its work is relevant.



1. Technical assistance information programs can be valuable whereby participants act on the information by altering energy systems and use patterns. Audit information has proven to be particularly useful from some programs.
2. Participants often want continuing service and help with financial alternatives.
3. There are spillovers associated with information sharing both with external agencies and with internal employees.
4. There could be free-rider issues due to working with a knowledgeable participant group that likely would have identified some of the energy efficiency measures in the absence of the program.
5. Contracting issues and other legal hurdles may limit direct participation.
6. Hard to reach communities are likely underserved.
7. More extensive marketing and outreach to reach the hard to reach are needed. However, the program goals are satisfied by selecting the low hanging fruit, those agencies familiar with the SDREO programs.
8. In order to heighten networking, a clearinghouse of information on previous clients and successful energy efficiency installations, should be created.

Our evaluation of the success of the SDREO's Technical Assistance Program incorporates these lessons.

### ***3. Program Specifics and Review of Program Materials and Procedures***

Program participation is a multi-step process. In the initial step, the SDREO attempts to develop program interest through marketing and workshops/training events. Marketing for the Technical Assistance Program consisted of website and brochure development and more personalized contacts with potential participants. In addition, the SDREO held several workshops/meetings. Once interest is established the agency completes a participation agreement that specifies the services that SDREO will provide (audits, feasibility studies, planning assistance, general technical assistance) and establishes access to the participants' facilities. The SDREO next completes a detailed energy audit of the agency's facilities. The audit specifies energy conservation opportunities, as well as additional measures for consideration. The audit results provide the impetus for the agency, with the assistance of the SDREO, to develop an energy action plan, which includes building energy management, policy review and development, purchasing strategies, etc. The final step is implementation of the energy action plan. At this stage,

the SDREO helps prioritize alternatives, and identifies possible financial incentives and financing alternatives.

The overall program design is excellent, utilizing an easy to follow step procedure. The program workshops and materials (brochures, preliminary assessment form, etc.) are informative and well designed. The facility audits, performed by SDREO staff and free to potential program participants, are extremely detailed and contain substantial information on the types of alternatives that have both energy and financial savings. We have reviewed several of the actual audits and are very impressed at the overall level of detail, the range of options, the potential savings, etc. In addition, at the conclusion of the audit, the program seems to maintain its effectiveness. The number of agencies that have implemented energy efficiency policies and projects evidences this. It seems as though the audits are not treated as free goods with no associated commitment.

#### **4. *Evaluation of Program Relative to Goals, June 2004 – December 2005***

The program has well-defined goals (seven best practice case studies, 150 energy opportunity assessments or audits, four feasibility studies, and seven working group meetings). During the program period, the SDREO met or exceeded the program goals for case studies, assessments or audits, and working group meetings among public agencies.

The SDREO was especially effective in delivering audits in that 178 were completed prior to the close of the program period. The audits were delivered to 26 different building types, with offices (44), office/laboratories (20), and other (20) being the most common building types. The buildings ranged in size from 300 square feet to over five million square feet, with an average of approximately 130,000 square feet. In addition, the identified average savings is quite impressive (397,256 kWh, 55.6 kW, and 1,735.7 therms). The kWh savings figure represents 25.2% of the total building load on average, whereas the kW and therm savings are a much smaller portion of total building load on average (1.35% and 4.34%, respectively). Finally, the average simple payback for the recommended measures was 4.24 years.

As of December 31, 2005, SDREO was deficient in feasibility studies (only two had been completed) and working group meetings in the health care industry (only three

meetings held).<sup>3</sup> In total, the SDREO identified 74 potential participants and signed access agreements with 55 of these agencies. In terms of budget expenditures, the SDREO had spent approximately 60 percent of its budget by December 31, 2005. In summary, the Technical Assistance Program can be considered a success in that the program has satisfied most of its pre-determined goals while spending a disproportionately smaller amount of its budget.

## **5. *Evaluation of Program Outputs***

In this section, we provide our review of a sample of case and feasibility studies created by the SDREO as a portion of the Technical Assistance Program. We reviewed one feasibility study (“Detailed Lighting Feasibility Study for San Diego City Libraries”) and three case studies.<sup>4</sup> As a comparison we also examined a document prepared in 2003 entitled “Technology Assessment of Light Emitting Diodes (LED) for Street and Parking Lot Lighting Applications.” This latter study was chosen because, in our opinion, the report was well done and very informative. Further, it provides a great background about the technology, an exhaustive summary of the typical baseline equipment, a detailed summary of the commercially available product choices, and a comparison of savings estimates for a selection of product choices. Finally, it discusses the cost-effectiveness of the options and since there is a special case with the San Diego area rate tariff, it discusses possible rate strategies that could be implemented. As such, this comparison study provides a model template for all case studies.

In general, we found that the topics of the case studies seemed random without any unifying theme. The measures installed also seemed to be pre-conceived. If there were other measure options considered, the reader of the case study would not be provided with this valuable information. The logical approach for conducting the case studies would be to determine the most common end-use/application for the target market, which appears to be local public agencies and business. Given that, the logical choices would be offices in public agencies and small retail business and/or small offices. The SDREO

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<sup>3</sup> It is our understanding that all four feasibility studies have now been completed. In addition, the SDREO made an explicit decision to not concentrate on the health care industry after that industry was forced to focus on seismic retrofits rather than energy efficiency.

<sup>4</sup> Case Study at Torrey Pines Elementary School (“Philips Energy Advantage 25-Watt T8 Fluorescent Lamps”), Case Study at East County Family Resource Center (“Retrofit of Air-Cooled Chiller with an Oil-Less Centrifugal Compressor”), and Case Study at the San Diego Library Headquarters (“Suspended Indirect/Direct Lighting”).

should consider how many other public agencies and or businesses could benefit from the demonstration projects and how the results of one case would be different for other applications. The case studies should follow a template that would include:

- background;
- baseline equipment/baseline requirements (e.g., minimum lighting level requirements – recommendations from organizations such as the Illuminating Engineers Society);
- special requirements for the case site, if applicable;
- baseline load measurement approach and observed data;
- description of commercially available product options;
- pros/cons of different comparable products;
- post-installation load measurement, and measured savings; and
- costs/benefits from different products.

In terms of the specific studies, we found the following.

- The choice of case study sites was often sub-optimal. For example, the selection of a small retail operation was likely a better choice than a school to demonstrate 25-Watt lights.
- The choice of replacement equipment was reasonable – however, there was little discussion of alternative replacement equipment options;
- The savings estimates lacked accuracy. For example, at the San Diego Ice Arena an individual is quoted as saying that only two banks of lights are being used post-retrofit. Thus, it is possible that less lighting was needed in the facility than was installed. It may have been useful to install lighting loggers in both the pre-retrofit and post-retrofit cases. Also, it may have been useful to do some simulation work to estimate the interactive effects of the lighting and the refrigeration system for the ice. It is highly likely that the savings in the Case Study are under-stated due to actual post-retrofit usage patterns and reduced refrigeration load from lower Wattage lamps. In another example (Suspended Indirect/Direct Lighting at the County of San Diego Library Headquarters), it is

unclear what the pre-retrofit lighting levels were other than “spotty and ugly.” It might have been useful to perform some measurement of the existing lighting levels prior to the retrofit. Since the baseline equipment was not actually ever installed, only engineering estimates are available and it is not clear that the County’s specification would have resulted in “spotty and ugly” lighting quality. The energy savings seem reasonable but the baseline is sort of an inefficient case. The savings values may be misleading to others trying to apply the Best Practices to their own application.

In summary, we found the case studies to provide less information and be less valuable than we had expected, especially in relation to our comparison study.<sup>5</sup>

## **6. *Survey Results***

Zebedee & Associates, with the assistance of our subcontractor Social Science Research Laboratory (SSRL) at San Diego State University, conducted a telephone survey of program participants. There are two groups of program participants: those who signed a participation or access agreement and those who failed to sign a participation agreement. Both groups are important to help assess the success of the Technical Assistance Program. The survey instrument focused on the specific program goals, as well as the following general issues:

- participant issues and needs;
- the success of program implementation;
- program success in raising awareness and affecting decisions of participants to implement the energy efficiency and demand reduction measures;
- the relative values of the various elements/components of the program;
- any perceived energy savings; and,
- any unanticipated outcomes/results.

This survey instrument is attached in the appendix for the review of all interested parties.

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<sup>5</sup> We realize that the case studies were not supposed to be as detailed as the feasibility studies and that it is difficult to provide a wealth of information in 2 to 3 pages. However, we suggest that if the case studies focus on specific market sectors, follow a defined template, and examine various alternatives the output could be substantially more valuable to both the individual recipient and to the overall marketplace.

### 6.1 Sampling Plan

The survey sample was developed from the list of contacts in the Technical Assistance Program, which during the June 2004 – December 2005 period included several hundred unique individuals. However, this list contained significant duplication within an agency. For example, if the city of La Mesa was contacted, then the city mayor, various council members, facilities managers, etc. were listed as relevant contacts. Therefore, we eliminated the obvious duplication and created an initial survey list of 458 individuals. However, this list was also encumbered by duplication within facilities since there may have been several individuals associated with a specific audited facility. But without an alternative, we decided this value represented the relevant population.

In order to determine the appropriate sample size, we began with the following formula:

$$n = \frac{\{Z_{\alpha/2}\}^2 pq}{E^2}$$

, where n is the sample size, Z is the normal distribution Z-score, 1- $\alpha$  is

the degree of confidence, p is the population proportion, q = 1-p, and E is the margin of error. Since the population was not infinite we corrected the formula above by the finite

correction factor. This produced the following equation:

$$n = \frac{Npq\{Z_{\alpha/2}\}^2}{pq\{Z_{\alpha/2}\}^2 + (N-1)E^2}$$

where N is the population size (458) and all other variables are defined above (see Triola, 2001). In addition, we used a 90 - 10 sample model, consistent with CALMAC procedures, implying Z = 1.60 and E = 0.10. Finally, since we were most interested in the customer satisfaction with both the audit process (previous estimate was that 60% were “very satisfied”) and the overall program (previous estimate was that 85% were “very satisfied”), we used knowledge gained from our previous work to provide an *a priori* estimate of p equal to 0.70 (see Thayer and Zebedee, 2004). Thus, our target sample size was 48 individuals. In fact, we surveyed 50 individuals.

### 6.2 Survey Implementation

Individuals on the final contact list were telephoned to ascertain his/her willingness to participate in the survey. This initial inquiry resulted in one of the following outcomes:

- unknown eligibility (e.g., busy signal, answering machine, left message, unqualified refusal, language barrier, etc.);

- ineligible (Fax/Modem, disconnected number, incorrect number, pager/cell, unqualified respondent such as individual no longer employed at the organization, etc.)
- unwillingness to participate; or,
- completed survey.

For those individuals in the first category, we left messages and/or telephoned again in an attempt to place them in the other categories, defined by willingness to complete the survey. This had the effect of reducing the number of unknown eligibles but a significant number remained (247). Fortunately, only fifteen individuals contacted were deemed unwilling to be surveyed (qualified refusal or early termination of the survey).

In Table 1, we present the complete attrition analysis, including both sampling and survey implementation. As illustrated in the table, 50 surveys were completed. This converts to a response rate of 11 percent (50 of 458) of the original list sample.

Alternatively, one can calculate the following rates for the program as (all values taken from Table 1):

- Eligibility Rate =  $E^* = \text{Eligible}/(\text{Eligible} + \text{Ineligible}) = 65/(65 + 80) = 44.8\%$
- Response Rate =  $R^* = \text{Completes}/(\text{Eligible} + \text{Unknown Eligibility}) = 50/(65 + 247) = 16.0\%$
- Cooperation Rate =  $C^* = \text{Completes}/\text{Eligible} = 50/65 = 76.9\%$

As is evident, the survey implementation can be characterized as quite successful, especially in the cooperation of the respondents.

The high proportion of unknown eligibility 53.9% indicates that the original list sample was poorly developed. It would have been much more efficient if the SDREO had maintained separate lists for contacts, program participants (those who signed access agreements), and program non-participants (those contacted but did not sign access agreements). A significant expenditure of effort on the part of the survey team could have been eliminated if this had been done.

**Table 1**  
**Attrition Analysis**

<b>Sampling/Survey Step</b>	<b>Number of (Potential) Respondents</b>
<b>Initial Survey List</b>	458
<b>Attempted Calls</b>	392
<b>Remove Unknown Eligibility</b>	247
<b>Remove Ineligible Records</b>	80
<b>Remove Unwilling to Participate</b>	15
<b>Completed Surveys</b>	50

### ***6.3 Respondent Characteristics***

Respondent characteristics are presented in Table 2. As is illustrated by the data in the table the following general statement can be made. The respondents are primarily male managers/supervisors with relatively high educational attainment and extensive work experience. One-half of the respondents work for local governments. In addition, only 12% of the respondents indicated that they “never” make energy decisions whereas 50% of the respondents make them frequently. This would suggest that the program is reaching its targeted audience of energy decision-makers, particular those that work for local governments.



**Table 2**  
**Respondent Characteristics**

<b>Characteristic</b>	<b>Units of Measure</b>	<b>Survey Value N=50</b>
<b>Gender</b>	% Male	88
<b>Education</b>	% With Education Beyond Bachelors Degree	54
<b>Agency Type</b>	% Local Government	50
<b>Position</b>	% in Management Positions	64
<b>Years in Position</b>	Mean Years in Current Position	8.7
<b>Supervisor</b>	Mean Number of Employees Directly or Indirectly Supervise	30.1
<b>Decisions</b>	% That Frequently Make Energy Related Decisions	50
<b>Energy Audit</b>	% of Organizations that Signed Participation Agreement	52.0

#### ***6.4 Customer Satisfaction***

In order to test the level of customer satisfaction, we examined six different aspects of the program:

- the initial workshop;
- the participation agreement process;
- the energy efficiency audits provided by SDREO;
- SDREO's role in creation of the energy action plan;
- implementation of energy saving measures; and
- overall satisfaction.

##### *Workshop*

In Table 3, we present the various measures of customer satisfaction pertaining to the workshop (columns 3 and 4) and the lead presenter at the initial program workshop

(column 2). As is evident, the twenty respondents who attended an initial workshop were overwhelmingly satisfied with the workshop presentation and corresponding materials. In fact, it is difficult to imagine doing a better job in terms of meeting the needs of the participating individuals. The most valuable aspects of the workshop, as reported by the respondents, were program details, exposure to new energy efficiency ideas, program handouts, dissemination of program contacts, networking, and obtaining a better understanding of the audit process and the corresponding benefits of facility audits.

**Table 3**  
**Customer Satisfaction – Technical Assistance Program**  
**Workshop Elements (n=20)**

<b>Workshop Aspect</b>	<b>“Yes” (%)</b>	<b>“Excellent” (%)</b>	<b>“Good” (%)</b>
<b>Initial Workshop</b>			
<b>Presenter Demonstrated Knowledge</b>	95.0		
<b>Presenter Communicated Clearly</b>	95.0		
<b>Workshop Organized Effectively</b>	95.0		
<b>Presenter Provided Sufficient Information</b>	95.0		
<b>Presenter Answered Questions</b>	95.0		
<b>Workshop Positive Experience</b>	95.0		
<b>Time Provided for Workshop</b>		50.0	40.0
<b>Technical Level of Information</b>		55.0	45.0
<b>Usefulness of Written Materials</b>		35.0	55.0
<b>Convenience of Location</b>		60.0	15.0

*Participation Agreement*

As indicated in Table 2, approximately one half of the respondents were associated with an organization that signed an access or participation agreement with the SDREO. In Table 4, we present some measures of respondent satisfaction with that process. As is illustrated, the respondents were quite satisfied with the assistance they received from the SDREO. There is only a slight suggestion that the information provided to the respondents may have been less valuable than expected.

**Table 4**  
**Customer Satisfaction – Technical Assistance Program**  
**Participation Agreement Process (n=26)**

<b>Aspect of Participation Process</b>	<b>“Excellent” %</b>
<b>Satisfaction with SDREO Assistance</b>	90.9
<b>Obtaining Expected Information</b>	72.7
<b>Usefulness of Assistance Provided</b>	81.8

As indicated above, we also interviewed several representatives of organizations that to date have chosen not to fully participate by signing a participation agreement in the Technical Assistance Program. Two distinct groups of these non-participants emerged. The first group indicated that they did not have sufficient resources (staff, funding) to participate. The second group was not interested in participation since they were working with another entity (SDG&E or a consulting firm). In general, all groups were quite supportive of the premise of the program but significant hurdles prevented more extensive program participation.

*Energy Audit*

Approximately 77 percent of the respondents representing participating entities reported that their organizations had received free energy efficiency audits from the San Diego Regional Energy Office. In Table 5, we present information on the respondent’s level of satisfaction with the audit process. As is evident, the respondents generally found the audit process to be a positive experience. In fact, these satisfaction values are a considerable improvement over the satisfaction levels achieved by the predecessor to this program (see Thayer and Zebedee, 2004 for a review of the Public Agency Program).

The audit process was widely praised for providing innovative energy efficiency and conservation ideas, the level of detail of the audit, the payback and energy savings calculations, the overall technical information, the identification of low-cost measures that could produce immediate savings, and for the auditors being available for consultation after the audits were completed and delivered to the participating agency.

However, there were some problems as implied by the 5.0 percent value for “somewhat dissatisfied” for the information in the energy audit. For example, one respondent indicated that the facilities audit was incomplete or not thorough enough, while another respondent stated that some projects were not practical, and still another indicated that there were inaccuracies in the cost estimates on the energy saving improvements. The process producing obvious outcomes was also cited as a problem with the audits.

**Table 5**  
**Customer Satisfaction --- Technical Assistance Program**  
**Audit Process (n=26)**

Satisfaction Measure	“Very Satisfied” (%)	“Somewhat Dissatisfied” (%)
<b>Audit Scheduling</b>	90.0	0.0
<b>Knowledge of Energy Auditor</b>	90.0	0.0
<b>Information in Energy Audit</b>	70.0	5.0
<b>Usefulness of Information</b>	75.0	5.0

*Energy Action Plan*

Twelve of the respondents reported that their organizations had created an energy action plan and seven of these agencies relied on SDREO assistance in creating the plan.<sup>6</sup> In Table 6, we present information on the respondent’s level of satisfaction with the role of the SDREO in this process. As is evident, the respondents generally found SDREO’s role and the energy action plan process to be a positive experience. Respondents cited resulting energy savings, and the development of priorities as the most valuable components of developing the energy action plan. One respondent did indicate that the scope of the action plan was unrealistic.

<sup>6</sup> We did not analyze the percent of participants that completed each step of the program. An interesting analysis for a future evaluation would be to investigate why/where individual entities decided to drop out of the process or to continue to next step in the program.

**Table 6**  
**Customer Satisfaction --- Technical Assistance Program**  
**Creation of Energy Action Plan (n=12)**

<b>Satisfaction Measure</b>	<b>“Very Satisfied” (%)</b>	<b>“Somewhat Dissatisfied” (%)</b>
<b>Knowledge of SDREO Representative</b>	85.7	0.0
<b>Extent of Issues Covered in Energy Action Plan</b>	71.4	0.0
<b>Usefulness of Energy Action Plan</b>	84.7	14.3

As specified above, the program participants were generally quite satisfied with the individual program components. We next turn to the energy impacts of the program. The SDREO Technical Assistance Program is primarily designed to provide information and audit recommendations to large-volume energy users in order to produce energy savings. Approximately 65 percent of the participating respondents indicated that their organizations had actually implemented energy saving measures as a result of participation in the program. The most common measures installed were energy efficient HVAC units and lighting, 76.4 percent and 35.3 percent, respectively of the respondents that indicated they had implemented measures. Respondents also indicated that their organizations had also adopted a variety of energy saving measures such as squeezing the hours of HVAC use, installing energy miser vending machines, reducing outdoor lighting and nighttime energy use, installing variable frequency drives and motors, installing LED exit signs and traffic signals, and replacing major equipment such as HVAC units and lighting systems.

In addition, many of the respondents’ organizations have plans to adopt more extensive measures, with energy efficient lighting being the most common measure mentioned. Thus, it seems that the program has had a significant impact on energy usage among the program participants. In fact, most respondents stated that the predominant obstacle to further adoption of energy efficiency measures is the budget situation facing most government and non-government agencies, something that SDREO has no control over.

*Overall Satisfaction*

The final aspect of customer satisfaction is the overall satisfaction with the program. As indicated in Table 7, the respondents were nearly unanimous in expressing the sentiment that they would choose to participate again in the program. In addition, 58.7 percent of the respondents indicated that they were “very satisfied” with the overall program. Finally, on the question of whether or not participation increased one’s knowledge of energy issues, approximately 91.5 percent of the respondents indicated that participation increased their knowledge of energy issues. These individuals were nearly split evenly between “a great deal” and “somewhat.”

**Table 7**  
**Customer Satisfaction --- Technical Assistance Program**  
**Overall Satisfaction**

<b>Satisfaction Measure</b>	<b>Units of Measure</b>	<b>Survey Value N=50</b>
<b>Number of References to SDREO Technical Assistance Program</b>	% of Respondents that have Referred Others	24.5
<b>Information Sharing</b>	% of Respondents that have Shared with Others	68.0
<b>Knowledge Improvement</b>	% of Respondents whose Knowledge increased a “Great Deal”	40.4
<b>Overall Satisfaction</b>	% “Very Satisfied”	58.7
<b>Willingness to Participate Again</b>	% “Yes”	97.8

One other aspect of the value of the Technical Assistance Program can be gleaned from Table 7. This relates to the potential for spillover of information; that is, the extent to which information provided through the program is shared not only through out that organization but also other parties. We asked, "Have you referred any other agencies to the SDREO Technical Assistance program?" Of the 50 respondents, 24.5% indicated that they had referred other agencies to the program. These respondents indicated that they had referred a total of 70 entities indicating that program referrals may account for a significant portion of the program population. However, it should be noted that there might be double counting of the referred agencies within the referred group, as two or more individuals could have referred the same agency. Furthermore, it is unclear if the

referred agency chose to subsequently participate in the program. However, it is clear program participants were extremely satisfied with program and recommended other entities to participate.

We also asked "Have you shared any of the information you obtained from the program with any other people?" Of the 50 respondents, 34 individuals (68%) indicated that they had shared information with other individuals. These individuals indicated that they had shared information with 339 other individuals. Note that most of the sharing may be with individuals internal to the agency as opposed to external to the agency. It is difficult to assess what these individuals did with the information received and no attempt to quantify these impacts was undertaken. However, this spillover of information is another important parameter in judging the success of information only programs and there does appear to be spillover of information for the San Diego Technical Assistance Program.

Finally, we also asked "Where did you first hear about the SDREO Technical Assistance program?" Most respondents had first heard about the program either through work or "other" (such as SDGE), indicating that the most effective method of informing respondents was via the participants networking channels. The bottom line is that there appears to be significant networking regarding the program, and participation or information sharing is significantly enhanced as a result of this networking.

### ***6.5 Suggested Program Improvements***

Suggestions for improving the program focused on two central themes. First, several respondents wanted the program to expand and indicated this notion by stating that: (1) the program should have greater funding; (2) more auditors should be hired to speed and expand the program and provide more frequent communication; and (3) the program needs a more diverse staff that includes a liaison or ombudsman. One respondent also suggested that the SDREO pay higher salaries to limit staff turnover. This theme was offered by respondents that were overwhelmingly satisfied with the program. The other theme implied a greater level of dissatisfaction with the overall program. This second theme included comments such as: (1) the SDREO should maintain a long-term relationship with the agencies rather than disappear after the audits are completed; (2) the program forms should be more user-friendly; (3) the program should be more imaginative; and (4) the SDREO should help identify additional financial incentives and

be more knowledgeable about funding and financing options for energy efficiency options.

### ***6.6 Overall Evaluation from Survey Data***

In summary, it seems that the survey respondents were quite satisfied with the SDREO Technical Assistance Program. However, several potential problem areas were identified in the survey. These include:

- the lack of in-roads into the harder-to-reach customer segments, such as those smaller agencies staffed by individuals who are not self-motivated;
- the finding that five percent of the organizations that received free audits felt “somewhat dissatisfied” with the usefulness of the information received;
- the request that the program offer more frequent correspondence and quicker turnaround and a more diverse and professional staff;
- the lack of an interactive energy database (and/or a newsletter) that includes case studies, model policies, success stories, and a list of qualified vendors/contractors; and
- more accurate tracking of contacts, participants, and measures implemented.

### ***7. Overall Evaluation of Technical Assistance Program***

In our original scope of work we stated that we would develop a scoring system to be used to evaluate the long-term efficacy of the program. Our scoring system uses a 1-10 scale to evaluate the following components of the program: (1) the program theory and approach; (2) the success of program implementation; (3) the level of participation, relative to projections; (4) program success in raising awareness and affecting decisions of participants to implement the energy efficiency and demand reduction measures; and (5) any unanticipated outcomes/results. The overall scale value is then used to make conclusions regarding the program future.

The program theory and approach refers to both how the program is to operate in the field (implementation theory) and why the program is expected to lead to specific outcomes (program theory). The Technical Assistance Program is designed to flow from initial contact via marketing and workshop/training events, to participation and access, to



energy audits, to establishment of an energy action plan, and ultimate energy savings. Thus, there are several linkages that affect the overall performance of the program. For example, ultimate program success (i.e., a 10 on our scale) requires that SDREO effort directly lead to participant action and corresponding energy savings. On the contrary, a flawed program theory would have linkages that are poorly designed so that the program does not meet its stated objectives (e.g., difficulty finding potential participants, failure to progress to participation, poorly designed audits, inaction).

Success of implementation refers to the quality of the program materials, the ability of the program to reach the intended audience, and the resulting action taken by participants. Success implies that SDREO effort leads to participation and ultimate action on the part of participants.

Level of participation, relative to projections is simply an analysis of program activity compared to program goals. If the program satisfies its goals we award a value of 8 out of a maximum value of 10, thereby allowing for the program to receive extra credit for surpassing its stated goals.

Program success in raising awareness and affecting decisions is dependent on the program participant's response to program initiatives. For example, for an information only program we would expect that a large majority of program participants felt that the program changed their knowledge of energy issues. A program designed to create energy savings would be evaluated according to the magnitude of actual savings.

Finally, we account for any unexpected developments by evaluating the occurrence of any unusual program results. For example, excessive free ridership, or action that does not create energy savings would be cause for downgrading the program effectiveness.

Our overall evaluation of the Technical Assistance Program is presented in Table 8 below. As is illustrated, we found the program theory to be essentially sound. In addition, the level of participation, as measured by number participants certainly met expectations. However, as identified in the table, there may be implementation issues.

An additional consideration concerns free-ridership, which is difficult to assess for an information only program. However, several portions of our research point to potential free riding behavior. For example, a high percentage of survey respondents learned about the Technical Assistance program only through the established work-related

networking channels. Also, only 40.4% had their knowledge improved “a great deal.” In addition, the survey respondents were highly educated (54% with education beyond a bachelors degree) and made energy related decisions frequently (50%). These survey elements point to a group of participants that are already engaged in energy efficiency activities and should have knowledge of the benefits and costs of energy efficiency alternatives.

Finally, consider the issue of whether there is a continuing need for the Technical Assistance Program. On the one hand the Technical Assistance Program was well designed, seemed to fulfill a market niche, met participation goals, and altered the awareness and subsequent decisions of the participants. On the other hand, there were some implementation problems and evidence consistent with free-ridership. Therefore, our overall assessment is positive but the CPUC should consider replacing this type of program with a market alternative.

**Table 8**  
**Overall Evaluation of the**  
**Technical Assistance Program**

	<b>Technical Assistance Program Value</b>	<b>Comments</b>
<b>Program Theory and Approach</b>	8	Linkages well-designed, easy to follow procedure, and the facility audits, performed by SDREO staff and free to potential program participants, are extremely detailed and contain substantial information on the types of alternatives that have both energy and financial savings.
<b>Success of Implementation</b>	8	Program materials informative and personal contacts valuable to establishing participation. However, participation limited to relatively known entities (i.e., failure to expand participation to hard-to-reach audiences). The overall satisfaction with the program was acceptable, spillovers (references, information sharing) were significant, and the willingness to participate again was almost unanimous.
<b>Level of Participation</b>	6	Generally satisfied all programmatic goals, although some of the program outputs (e.g., feasibility studies) were delivered after the close of the program year. In addition, the quality of the case studies could be improved.
<b>Change in Awareness, Decisions</b>	7	Sixty-five percent of respondents to survey commented that the program caused implementation of energy saving measures and 40.4% of respondents had a significant knowledge improvement.
<b>Unanticipated Outcomes</b>	5	Potential free-ridership, and concerns that the SDREO should maintain a long-term relationship with the agencies rather than disappear after the audits are completed; (2) the program forms should be more user-friendly; (3) the program should be more imaginative; and (4) the SDREO should help identify additional financial incentives and be more knowledgeable about funding and financing options for energy efficiency.
<b>Total</b>	34	

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*Appendix – Survey Instrument*

**SDREO's Technical Assistance Program Survey**  
**(Spring 2006)**

INTRO. Hello, my name is \_\_\_\_\_. May I speak with... **{INSERT NAME FROM LIST}? [WHEN SPEAKING WITH LISTED PERSON:]** I'm calling from the Social Science Research Lab at San Diego State University. We're conducting a study to follow up with organizations who have participated in the San Diego Technical Assistance program, which is sponsored by the San Diego Regional Energy Office. Do you have a few minutes right now to answer some questions? **[SCHEDULE A CALL BACK IF NEEDED; IF NOT THE PERSON MOST KNOWLEDGABLE ABOUT THIS ORGANIZATION'S PARTICIPATION IN THE PROGRAM, REQUEST THAT PERSON'S NAME]**

VER. **[VERSION OF INTERVIEW:]** 1 - VERSION A 2 - VERSION B\*  
\* = RESPONSE OPTIONS REVERSED ON VERSION B FOR ALL QUESTIONS INDICATED

SEX. **[RECORD GENDER OF RESPONDENT:]**  
1 - MALE  
2 - FEMALE

----- **QUALIFIED RESPONDENT: QUOTAS CHECKED; DATA SAVED** -----

Q1. Where did you first hear about the San Diego Technical Assistance Program (TAP)?  
**[DO NOT READ, RECORD ONLY ONE]**  
1 - SDREO/SDERC'S WEBSITE  
2 - SDREO/SDERC'S FACILITY (FLYERS AT FACILITY)  
3 - WORKPLACE  
4 - TRADE/PROFESSIONAL ORGANIZATIONS/CONVENTIONS  
5 - OTHER, SPECIFY: \_\_\_\_\_  
9 - DK/REF

**Initial Workshop Section:**

Q2. Have you ever attended a workshop where the details of the Technical Assistance Program were presented?  
1 - YES  
2 - NO -----> **GO TO PARTICIPATION AGREEMENT SECTION**  
9 - DK/REF -----> **GO TO PARTICIPATION AGREEMENT SECTION**

Q3. **[IF YES:]** Thinking now about the workshop that you attended for the Technical Assistance Program, please evaluate the workshop presenter regarding each of the following: did the presenter...\*\*

	<u>YES</u>	<u>NO</u>	<u>DK/REF</u>
1) demonstrate knowledge of the subject?	1	2	9
2) communicate information clearly?	1	2	9
3) organize the presentation effectively?	1	2	9
4) give you sufficient information to participate successfully in the workshop?	1	2	9
5) answer any questions you had to your satisfaction?	1	2	9
6) make the workshop a positive experience?	1	2	9

Q4. How would you rate the workshop in terms of each of the following...\*\*  
Would you say excellent, good, fair or poor?

\*\* = ITEMS ON LIST RANDOMLY ROTATED FOR ALL QUESTIONS INDICATED

	<u>Exc</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>	<u>DK/REF</u>
1) the amount of time provided for the workshop?	1	2	3	4	9
2) the technical level of information provided?	1	2	3	4	9
3) the usefulness of the written materials provided (if any)?	1	2	3	4	9
4) convenience of the location?	1	2	3	4	9
5) convenience of the day and time it was scheduled?	1	2	3	4	9

**[ONLY IF POOR ON "5"):]** When would be your preferred day and time for a workshop?

---

99 - DK/REF

Q5. What one aspect of that workshop was most valuable for you?  
**[PROBE AND RECORD ONE MAIN ISSUE]**

---

99 - DK/REF

Q6. What one aspect of that workshop was least valuable for you?  
**[PROBE AND RECORD ONE MAIN ISSUE]**

---

99 - DK/REF

**Participation Agreement Section:**

Q7. Did your organization sign a Participation Agreement with SDREO?

1 - YES

2 - NO ----- > **GO TO NON-PARTICIPANT SECTION**

9 - DK/REF----- > **GO TO NON-PARTICIPANT SECTION**

Q8. **[IF YES:]** Did a representative from the San Diego Regional Energy Office, or SDREO, assist your organization in completing the Participation Agreement Form?

1 - YES

2 - NO ----- > **GO TO Q9**

9 - DK/REF ----- > **GO TO Q9**

Q8a. **[IF YES:]** Overall, how satisfied were you, in terms of the SDREO's assistance in helping complete the Participation Agreement Form? The first one is...\*\*  
Would you say very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?\*

	<u>Very Sat</u>	<u>Smwt Sat</u>	<u>Smwt Dissat</u>	<u>Very Dissat</u>	<u>DK/REF</u>
1) the level of knowledge of the SDREO representative?	1	2	3	4	9
2) getting the information that you expected to get from the SDREO representative?	1	2	3	4	9
3) the usefulness of the information that you received?	1	2	3	4	9

Q9. Overall, what one aspect of completing the Participation Agreement Form was most valuable for you? **[PROBE AND RECORD ONE MAIN ISSUE]**

---

99 - DK/REF

Q10. Overall, what one aspect of completing the Participation Agreement Form was least valuable or most problematic for you? **[PROBE AND RECORD ONE MAIN ISSUE]**

---

99 - DK/REF

## Energy Audit Section:

Q11. Did your organization have a free energy audit, conducted by a representative of the San Diego Regional Energy Office, or SDREO?

1 - YES

2 - NO ----- > **GO TO ENERGY ACTION PLAN SECTION**

9 - DK/REF ----- > **GO TO ENERGY ACTION PLAN SECTION**

Q12. **[IF YES:]** Overall, how satisfied were you, in terms of the following aspects of the audit? The first one is...\*\* Would you say very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?\*

	<u>Very Sat</u>	<u>Smwt Sat</u>	<u>Smwt Dissat</u>	<u>Very Dissat</u>	<u>DK/REF</u>
1) the efficiency with which the audit was scheduled?	1	2	3	4	9
2) the level of knowledge of the energy auditor?	1	2	3	4	9
3) getting the information that you expected to get from an energy audit?	1	2	3	4	9
4) the usefulness of the information that you received?	1	2	3	4	9

Q13. What one aspect of the energy audit was most valuable for you?  
**[PROBE AND RECORD ONE MAIN ISSUE]**

---

99 - DK/REF

Q14. What one aspect of the energy audit was least valuable for you?  
**[PROBE AND RECORD ONE MAIN ISSUE]**

---

99 - DK/REF



**Energy Action Plan Section:**

Q15. Did your organization create an Energy Action Plan?

1 - YES

2 - NO ----- > GO TO **IMPLEMENT ENERGY ACTION PLAN SEC**

9 - DK/REF ----- > GO TO **IMPLEMENT ENERGY ACTION PLAN SEC**

Q16. **[IF YES:]** Did the SDREO assist your organization in forming the Energy Action Plan?

1 - YES

2 - NO ----- > GO TO Q17

9 - DK/REF ----- > GO TO Q17

Q16a. **[IF YES:]** Overall, how satisfied were you, in terms of the SDREO's assistance in helping form the Energy Action Plan? The first one is...\*\* Would you say very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?\*

	<b><u>Very Sat</u></b>	<b><u>Smwt Sat</u></b>	<b><u>Smwt Dissat</u></b>	<b><u>Very Dissat</u></b>	<b><u>DK/REF</u></b>
1) the level of knowledge of the SDREO representative?	1	2	3	4	9
2) the extent of the issues that you expected to cover in an energy action plan?	1	2	3	4	9
3) the usefulness of the plan that was created?	1	2	3	4	9

Q17. Overall, what one aspect of the Energy Action Plan was most valuable for you?  
**[PROBE AND RECORD ONE MAIN ISSUE]**

---

99 - DK/REF

Q18. Overall, what one aspect of the Energy Action Plan was least valuable for you?  
**[PROBE AND RECORD ONE MAIN ISSUE]**

---

99 - DK/REF

## Implementation of Energy Action Plan Section:

Q19. Has your agency actually implemented any energy-saving measures as a result of participating in SDREO's Technical Assistance Program?

- 1 - YES
- 2 - NO ----- > **GO TO Q20**
- 9 - DK/REF ----- > **GO TO Q20**

Q19a. **[IF YES:]** What energy-saving measures have been implemented?  
**[DO NOT READ; RECORD ALL MENTIONED]**

- 1) INSTALL ENERGY EFFICIENT LIGHTING (T-5, T-8)
- 2) INSTALL NEW PACKAGED HVAC UNITS
- 3) INSTALL VARIABLE FREQUENCY DRIVES  
(AIR-HANDLERS, CHILLERS, CONDENSERS)
- 4) INSTALL OCCUPANCY SENSORS
- 5) INSTALL COOL ROOF
- 6) CHANGE TEMPERATURE SETPOINTS
- 7) OTHER, SPECIFY: \_\_\_\_\_
- 8) DK/REF

Q20. Are there any energy-saving measures that you still plan to implement?

**[DO NOT READ; RECORD ALL MENTIONED]**

- 1) INSTALL ENERGY EFFICIENT LIGHTING (T-5, T-8)
- 2) INSTALL NEW PACKAGED HVAC UNITS
- 3) INSTALL VARIABLE FREQUENCY DRIVES  
(AIR-HANDLERS, CHILLERS, CONDENSERS)
- 4) INSTALL OCCUPANCY SENSORS
- 5) INSTALL COOL ROOF
- 6) CHANGE TEMPERATURE SETPOINTS
- 7) OTHER, SPECIFY: \_\_\_\_\_
- 8) DK/REF

Q21. Are there any energy-saving measures you intended to implement that you will not be implementing? **[DO NOT READ; RECORD ALL MENTIONED]**

- 1) INSTALL ENERGY EFFICIENT LIGHTING (T-5, T-8)
- 2) INSTALL NEW PACKAGED HVAC UNITS
- 3) INSTALL VARIABLE FREQUENCY DRIVES  
(AIR-HANDLERS, CHILLERS, CONDENSERS)
- 4) INSTALL OCCUPANCY SENSORS
- 5) INSTALL COOL ROOF
- 6) CHANGE TEMPERATURE SETPOINTS
- 7) OTHER, SPECIFY: \_\_\_\_\_
- 8) DK/REF

Q21a. **[IF ANY MENTIONED:]** Why not? **[PROBE AND RECORD ALL REASONS]**

---

99 - DK/REF

**IF Q7=NO/DK/REF, GO TO NON-PARTICIPANT SECTION;  
OTHERWISE, GO TO OVERALL PROGRAM SATISFACTION SECTION**

### Non-Participant Section:

Q22. What was the one main reason why your organization did not continue with the Technical Assistance Program? **[PROBE AND RECORD ONE MAIN REASON; THEN ASK:]** Were there any other reasons? **[CLARIFY AND RECORD BELOW, ONE ISSUE PER LINE UP TO FOUR REASONS]**

- a. [1ST REASON] \_\_\_\_\_
- b. [2ND REASON] \_\_\_\_\_
- c. [3RD REASON] \_\_\_\_\_
- d. [4TH REASON] \_\_\_\_\_

### Overall Program Satisfaction Section:

Q23. Have you referred any other agencies to the San Diego Technical Assistance Program? **[IF YES:]** Approximately how many agencies have you referred?

\_\_\_\_\_ AGENCIES REFERRED TO PROGRAM

- 0 - NO/NONE
- 97 - 97 OR MORE
- 99 - DK/REF

Q24. Have you shared any of the information you obtained through this program with any other people? **[IF YES:]** Approximately how many people have you shared this information with?

\_\_\_\_\_ PEOPLE SHARED INFORMATION WITH

- 0 - NO/NONE
- 97 - 97 OR MORE
- 99 - DK/REF

Q25. Do you think that your participation in the Technical Assistance Program has increased your knowledge of energy issues...\*

- 1 - a great deal,
- 2 - somewhat, or
- 3 - not at all?
- 9 - DK/REF

Q26. Overall, how satisfied or dissatisfied are you with the Technical Assistance Program? Are you...\*

- 1 - very satisfied,
- 2 - somewhat satisfied,
- 3 - somewhat dissatisfied, or
- 4 - very dissatisfied?
- 9 - DK/REF

Q27. If you had it to do over again, would you choose to participate in this program or not?

- 1 - YES
- 2 - NO
- 9 - DK/REF

Q28. What one suggestion would you offer to improve this program?  
**[PROBE AND RECORD ONE MAIN RESPONSE]**

---

99 - DK/REF

EDU. In closing, the following questions are for comparison purposes only. What is the highest grade or year of school that you have completed and received credit for...

- 1 - high school or less;
- 2 - at least one year of college, trade or vocational school;
- 3 - graduated college with a bachelor's degree; or
- 4 - at least one year of graduate work beyond a bachelor's?
- 9 - DK/REF

TYP. Which of the following best describes your agency...

- 1 - a school,
- 2 - local government,
- 3 - a public utility,
- 4 - health care,
- 5 - or another type? [SPECIFY:] \_\_\_\_\_
- 9 - DK/REF

FTE. Approximately how many full-time employees are there in your organization, including San Diego County locations only?

\_\_\_\_\_ TOTAL FULL-TIME EMPLOYEES (OR EQUIVALENT)  
99997 - 10,000 OR MORE  
99999 - DK/REF

POS. Which best describes your position in the organization...

1 - management,  
2 - engineer,  
3 - architect,  
4 - designer, or  
5 - some other position? [SPECIFY:] \_\_\_\_\_  
9 - DK/REF

YRS. How long have you been in your current position?

\_\_\_\_\_ YEARS IN POSITION  
99 - DK/REF

DEC. In your position, how often do you make energy-related decisions about HVAC systems, architectural designs, lighting or lighting controls, or other energy-related matters? Would you say...\*

1 - frequently.  
2 - occasionally,  
3 - rarely, or  
4 - never?  
9 - DK/REF

SUP. How many employees do you directly or indirectly supervise, if any?

\_\_\_\_\_ TOTAL EMPLOYEES SUPERVISED  
99997 - 10,000 OR MORE  
99999 - DK/REF

## Closing Section:

PHN. Those are all the questions I have. I'd like to confirm that I reached you at...

**[VERIFY AND INSERT TELEPHONE NUMBER:]** \_\_\_\_\_

NAM. And that I'm speaking with...

**[VERIFY AND INSERT RESPONDENT'S NAME:]** \_\_\_\_\_

Your name and phone number will be separated from your responses to these questions and destroyed after the data has been processed. **[THANK RESPONDENT; RECORD REMAINING INFORMATION BELOW]**

TIN. **[INTERVIEWER NUMBER:]**

LEN. **[LENGTH OF INTERVIEW IN MINUTES:]**

DAT. **[DATE OF INTERVIEW:]**

REC. **[CATI RECORD NUMBER:]**

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