



# REPORT

## MEASUREMENT AND EVALUATION STUDY OF PG&E'S LOCAL CROSSCUTTING PACIFIC ENERGY CENTER PROGRAM

Final Report

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# **Measurement and Evaluation Study of PG&E's Local Crosscutting Pacific Energy Center Program**

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## PREFACE

This document is the Final Report required per Pacific Gas and Electric Company's contract with Newcomb Anderson Associates for independent measurement & evaluation services for the 2002 Local Crosscutting Pacific Energy Center Program. Newcomb Anderson Associates, of San Francisco, California, prepared this document for Pacific Gas and Electric Company. The authors of this report are Lance C. Kincaid, P.E., and Joshua S. Babcock. This report was reviewed for technical quality by Ann L. McCormick, P.E.

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## 1. EXECUTIVE SUMMARY

This report summarizes the independent measurement and evaluation (M&E) of the 2002 Pacific Energy Center (PEC) Program year. The PEC provides educational programs, consulting services and building performance tools to professional and businesses making design decisions. This program is funded by Public Goods Charge (PGC) and administered under the auspices of the California Public Utilities Commission, (CPUC).

This study examines the Program Year 2002 experiences as well as evaluates the effects of program aspects and changes. This study was completed at the request of Pacific Gas & Electric Company (PG&E) as mandated by the CPUC in Decision 01-11-066 and was designed to measure the effectiveness of the PEC in achieving its program objectives and goals. These objectives and goals included providing services in four program areas: seminars/workshops, tool loans, resource library services, and architectural consultations. Newcomb Anderson Associates accomplished this evaluation of the 2002 PEC Program year through a combination of review of participant records and an independent telephone survey of a random sample of participants of various PEC programs.

At the onset of this study, Newcomb Anderson Associates outlined the proposed M&E methodology in the *Measurement and Evaluation Study Research Plan*. This document was submitted in draft form to PG&E, who then provided comments and suggestions. PG&E's comments and suggestions were addressed and incorporated into the document, and the final plan was submitted to the CPUC for approval. After providing comments on the plan, which were addressed by Newcomb Anderson Associates, the CPUC approved the M&E methodology described in the research plan on March 7, 2003 and gave Newcomb Anderson Associates notice to proceed with the study. This M&E study was performed in accordance with this approved research plan.

This report evaluates the 2002 PEC Program in two ways:

- Achievement of program objectives, which are metrics set forth in the Program Implementation Plan. The objectives are rigidly defined measurements of program performance.
- Program performance with respect to goals, which represents the direction the PEC should move in the future. The Program Implementation Plan does not require that these goals be met for the program to be deemed a success, but that effort should be made to move toward these goals.

The Program Implementation Plan (PIP) for 2002 Local Crosscutting Pacific Energy Center (R. 01-08-028, Energy Division Program Reference Number 10-02, September 2002) indicates the following objective measures for evaluating program successes.

- At least 50 seminars/workshops to be completed
- At least 60 architectural consultations to be completed
- At least 250 tool loans to be completed

Newcomb Anderson Associates' scope of work for this M&E study also included the evaluation of a fourth program component, the Resource Center/Library. The program's PIP did not indicate an objective measure for evaluating this program component.

Participant records provided by the PEC show that each of these objective measures were surpassed during 2002, as shown in Table 1.1. The PEC's records show that over 100 workshops were held, 61 architectural consultations were completed, and 574 tool loan transactions took place. These records were validated by Newcomb Anderson Associates during the M&E process by contacting a randomly selected set of nearly 140 of the approximately 3,150 total participants. These contacts were made in the process of conducting the independent participant telephone surveys, during which, participants were asked to confirm that these records were correct. According to these independently validated records, the 2002 PEC Program Year met its objectives and was a success.

**Table 1.1: Program Objectives**

	<b>Workshops</b>	<b>Architectural Consultations</b>	<b>Tool Loans</b>
Required	50	60	250
Completed	>100	61	574

In addition to validating success based on the aforementioned objective measures, Newcomb Anderson Associates has further characterized the program through the collection and analysis of participant opinions, gathered via telephone interviews, conducted independently by Newcomb Anderson Associates. The results of this independent survey and overall evaluations of the program's effectiveness are summarized in detail in this report. In general, participants were overwhelmingly positive about the PEC's programs. Of the various potential future improvements suggested, those most commonly noted included expanding outreach efforts and increasing program availability to reach a wider, more geographically diverse audience.

Demographic data, collected from those who participated in the independent telephone survey, indicate that the PEC's programs are reaching their intended audiences, in addition to other groups not specifically identified as target audiences. The data also indicate that the programs have had a significant influence on changing the standard practices of participants regarding energy efficiency. Other demographic data collected during the independent telephone survey include the size of businesses served; the participants' primary business sector; what, if any, incentive programs they have participated in; and how they found out about the PEC. The independent telephone survey data also reflect a high level of awareness of the PEC programs within the target audiences.

In addition to the objective measures of program success, the PIP document includes program goals. These represent the direction that the PEC should move in the future. Program goals indicate a desire to attract and serve customers that are typically underserved by energy-efficiency programs. These groups include architects, engineers, lighting designers, contractors, developers, etc., involved with residential homes and other small-usage customers, and those that reside in geographically hard-to-reach, non-urban areas of Northern California and the Central Valley.

Other significant findings of this study with regard to program goals include:

- The largest group of PEC users during 2002, as reported during the independent telephone survey, worked for businesses with less than 25 employees.

- Approximately 13% of participants interviewed during the independent survey described their primary area of focus as the residential sector.
- A review of Workshop/Seminar records indicated that 18% of the educational offerings were provided at locations outside the City of San Francisco during 2002.
- A total of 59% of those participants surveyed independently reported that their involvement with the PEC caused them to change their standard business practices to accommodate energy efficiency as a matter of course.
- The overwhelming majority of respondents to the independent phone survey indicated that they would recommend the PEC's services to others inside and outside their places of work.

Based on these responses to the independently conducted telephone survey and review of records provided by the PEC, Newcomb Anderson Associates is confident that the PEC's objectives for numbers of workshops, architectural and building consultations, and tool loans provided were exceeded.

In addition to answering multiple choice questions, participants who took part in the independent survey were asked for suggestions for future program improvement. The most often repeated recommendations for improvements to the PEC coming from those participants interviewed indicated a desire for better access to those outside the City of San Francisco, and to those with schedules that make it difficult to attend daytime classes.

Based on the analysis of the participation records provided by the PEC, the PEC met its program objectives in 2002. Based on the satisfaction of the independent survey interviewees, the program can be deemed an overall success. The majority of independent survey interviewees responded with a strong desire to see the program continue in the future. No independently surveyed interviewee expressed a desire to see the program be discontinued.

To further understand how the PEC could better serve the community in the future, Newcomb Anderson Associates gathered data from those who were part of the targeted audience, yet did not make use of the program's services during the 2002 program year. To accomplish this, Newcomb Anderson Associates independently interviewed 50 non-participants in addition to the nearly 140 program participants interviewed during this study. Newcomb Anderson Associates contacted and interviewed these non-participants to gather insight as to their reasons for not using PEC resources, and to evaluate their willingness to attend future offerings. The non-participants included in this study were chosen based on their inclusion in the PEC's stated target audience demographics. Contact information for non-participants was obtained from a combination of trade group membership lists, general industry contacts, and yellow page listings.

Of the non-participants interviewed, all reported attending energy efficiency-related workshops or seminars not associated with the PEC in varying degrees. Of the non-participants interviewed, only 14% indicated that they were unaware of the services offered by the PEC. To a large extent, non-participant interviewees indicated they had not taken advantage of the PEC because the energy-related programs were not relevant to their current work or because they were too busy to properly participate in the program offerings.

Along with this independent evaluation via surveys of a sample of users, Newcomb Anderson Associates also summarized and evaluated other PEC tracking data, including



participant questionnaires, a previous Internet based survey of tool lending users, and a summary of Resource Library contacts. The contact information from these data sources was not complete enough to utilize in constructing the telephone survey sample, but did provide valuable insight about user's high regard for the PEC's services. Of particular note is the fact that the Resource Library staff fielded almost 1,800 inquiries and contacts during the 2002 program year.

This report also includes Newcomb Anderson Associates' recommendations for consideration in the implementation of the PEC program in the future. These recommendations include improvements to program outreach to underserved occupational sectors, enhancing the accessibility to participants either distanced from San Francisco or limited by constrained time schedules, enhancing the collection of tracking data, and improvements to the publicity of lesser well-known program components.

## 2. INTRODUCTION

This report summarizes Newcomb Anderson Associates' independent measurement and evaluation study that examines the effectiveness of the 2002 PEC Program. This study was completed at the request of PG&E as mandated by the CPUC.

In Decision 01-11-066, the CPUC set forth rules and criteria for 2002-03 energy efficiency programs (Energy Efficiency Policy Manual Draft November 29, 2001) that include a provision for statewide evaluation of information-only programs, such as the PEC. These rules indicated that established (non-new), information-only programs needed evaluation plans that would meet the following objectives:

- Provide feedback and corrective and constructive guidance regarding Program implementation
- Measure indicators of the effectiveness of the Program
- Assess the overall performance and success of the Program
- Assess whether there is an ongoing need for the Program.

The PIP for 2002 Local Crosscutting Pacific Energy Center (R. 01-08-028, Energy Division Program Reference Number 19-02, September 2002) indicates the following objective measures for evaluating program performance:

- At least 50 seminars/workshops to be completed
- At least 60 architectural consultations to be completed
- At least 250 tool loans to be completed

The M&E team of Newcomb Anderson Associates has determined that all of these measures were surpassed by the PEC during the 2002 program year. The PEC's records show that over 100 workshops were held, 61 architectural consultations were completed, and 574 tool loan transactions took place.

The validity of these records were confirmed by Newcomb Anderson Associates, through a process of contacting via telephone or email a randomly chosen set of participants listed for each program component. All participants contacted by Newcomb Anderson Associates confirmed that these records were correct. According to the measures listed above and the validated program records, the 2002 PEC Program can be deemed a success.

Also included in the PIP are the following program goals. While these goals are not considered grounds for measuring program success or failure, they represent the direction that PEC representatives would like to see the program move:

- Residential participants to receive about 10-15% of the total services of the PEC
- Advertise to 15,000 small usage customers, such as smaller building owners/operators and businesses and other larger customers in non-urban areas that have been underserved
- Offer 25 classes in geographical hard-to-reach areas of Northern California and the Central Valley that have been underserved (goal is 25% of total workshops to be offered in these geographic areas)

The evaluation of the program relative to these goals is discussed in detail in both the “Results” and “Recommendations” Sections of this report.

The Pacific Energy Center is located at 852 Howard Street, in San Francisco’s South of Market district, and is in its twelfth year of operation. The center serves the greater San Francisco Bay Area, with a portion of its programs directed at reaching members of its target demographic in the Central Valley and Northern California. The center is open on weekdays and is convenient to public transportation. The center’s 2002 budget was \$4.1 million, funded through public benefits charges. Specific target audiences are listed below.

The PEC Program centers around outreach and education and its purpose is to reduce the barriers faced by businesses, academia and government professionals in adopting energy efficiency measures. The program consists of four components:

- Technical workshops and educational programs: the PEC offers classes and evening lectures free of charge.
- A forum for the discussion of technical information and on-site consulting: the PEC offers staff for daylight model testing, sunlight penetration and shading scale model research with their onsite heliodon, and consultations.
- An energy resource center/library: the PEC provides users the opportunity to contact a staff member for help, review resources available at the Resource Center, access fact sheets, link to selected reports and websites and read about what’s new in energy efficiency.
- A building performance diagnostic tool lending library: this lending library contains devices from over 100 vendors, including hand-held instruments that provide instantaneous read-outs, simple data logging equipment for short-term studies, photographic equipment, lap-top computers and other helpful monitoring accessories.

These services are categorized as “information only”, and are expected to have indirect rather than direct energy and load reduction impacts. More in-depth description of the PEC program offerings can be found on their website at [www.pge.com/pec](http://www.pge.com/pec).

The PEC Program has been designed to target five distinct participant groups:

- Commercial building operators
- Commercial businesses
- Commercial developers, architects, and engineers
- Residential architects
- Energy efficiency program implementers

This independent M&E study evaluates the effectiveness of the PEC program using data collected through a series of user surveys. The M&E approach and methodology are outlined in detail in the previous project submittal, the Research Plan, dated February 2003, and are summarized in Section 3 of this report.

### 3. METHODOLOGY

#### 3.1 Overview

The purpose of the 2002 PEC M&E Study is as follows:

- Provide feedback and corrective and constructive guidance regarding the implementation of the PEC Program
- Measure indicators of the effectiveness of the PEC Program
- Assess the overall level of the PEC Program's performance and success
- Assess whether there is a continuing need for the program.

The methodology proposed here satisfies this purpose through review of program participation documentation and an accompanying independent telephone survey of a sample of 2002 program participants. Feedback and guidance were generated directly from interviewees' responses. Further guidance was obtained from Newcomb Anderson Associates' findings resulting from analysis of the responses in aggregate. The effectiveness of the program was measured based on the interviewees' perceptions of program value. Outreach effectiveness was measured based on the responses of the interviewees with respect to their occupation, market sector, and geographic location.

Early in the M&E process, Newcomb Anderson Associates developed the *Measurement and Evaluation Study Research Plan*, in which the proposed study implementation methodology was discussed in detail. This document was submitted in draft form to PG&E, who then provided comments and suggestions. PG&E's comments and suggestions were addressed, and the final plan was submitted to the CPUC for approval on February 11, 2003. The CPUC was given the opportunity to comment on the final plan. After the CPUC's comments were satisfactorily addressed, they approved the M&E methodology described in the research plan on March 7, 2003, and gave Newcomb Anderson Associates notice to proceed with the study. This M&E study was performed in accordance with this approved research plan.

#### 3.2 Evaluation Process

The evaluation of the 2002 PEC Program consisted in part of a review of participant records for the PEC's four component programs. The evaluation also included a review of the Workshop and Tool Lending Service participant surveys kept by the PEC. These two sources of information were generated prior to the M&E study summarized in this report. The primary effort of the M&E study was focused on the independently conducted telephone survey of a random sample of participants.

The participant records corresponding to the four component programs were investigated to confirm the number of workshops/classes, architectural/building consultations, and tool loan transactions provided during the 2002 program year. Participant records were also used to generate the interview sample used for the survey conducted under this project (see Section 3.4). By interviewing people from these participant lists at random, Newcomb Anderson Associates confirmed the validity of these records. The prior survey results collected by the PEC for the Workshop/Educational Service and Tool Lending Service components were reviewed by Newcomb Anderson Associates and used as a point of

comparison alongside the results of the independently conducted participant survey completed under this study.

The main focus of the M&E process was an independent telephone survey of a randomly selected group of 2002 program participants. This survey process is discussed in detail in the following sections.

### 3.3 General Discussion of Surveys

Newcomb Anderson Associates conducted interviews with program participants and non-participants as the primary focus of the evaluation process for each of the program components. These interviews were conducted using a standard questionnaire that was customized for each of the four program components. Sample questionnaires for each of the four program components can be found in Appendix E of this report. Additionally, non-participants were interviewed to gain information about how the program could improve outreach to members of the targeted customer groups.

The majority of the participant and non-participant surveys were conducted over the telephone, with a Newcomb Anderson Associates staff member reading the questionnaire to the interviewee and answering questions about the meaning of questions if they arose. Some interviewees requested that the questionnaire forms be emailed to them, at which point they completed the forms on their own, and returned the results by fax or email to Newcomb Anderson Associates. To help ensure consistency, a small group of three phone surveyors was used.

In some instances, interviewees were unavailable by telephone and were reached by email only. In these cases, the email request for an interview included a short description of the M&E project and the appropriate questionnaire form as an email attachment. In these cases, the interviewee had the option of calling Newcomb Anderson Associates at a time when it was convenient for him/her to conduct the interview, or simply to complete the form and fax the results back to Newcomb Anderson Associates' offices.

### 3.4 Constructing the Interview Sample

The sample set of interviewed participants was sized and configured such that the program success in meeting its outreach goals could be appropriately characterized. Program records obtained from the PEC show 3,145 unique participants during 2002. The term "unique participants" indicates that people who participated in the programs more than once during 2002 (e.g., attended more than one class or borrowed tools more than once) are only counted once in this list.

The following formula<sup>1</sup> represents a method of calculating an appropriate sample size based on the desired level of confidence in the overall results and the size of the initial population to be surveyed. This calculation is performed as follows:

$$SS = Z^2 (P) (1 - P) / CI$$

where,

SS = Infinite population sample size  
Z = Z value (1.96 for 95% confidence level)  
P = Percentage picking a choice (0.5 is used prior to survey being conducted)  
CI = Confidence interval, expressed as a decimal.

A second step is performed to apply the preceding results to a finite population, as is encountered in the 2002 PEC participant records:

$$FP SS = (SS) / (1 + (SS - 1) / POP)$$

where,

FP SS = Finite population sample size  
POP = Initial population size.

When this analysis is applied to the initial population of the unique 2002 PEC program participation records (i.e., POP = 3,145), with a desired confidence level of 95% and a confidence interval of 10%, an appropriate sample size of 93 interviews is generated. In other words, if 93 interviews are conducted, the probability that the responses gathered accurately reflect the views of the total group of participants is 95%.

The sample size of participants to be interviewed during this M&E project was discussed in a meeting between Newcomb Anderson Associates and the PG&E M&E Project Manager on June 16, 2003. During this interview, a targeted number of interviews of 140 were decided upon, based on the time and resources available to complete the study. In the end, Newcomb Anderson Associates completed 132 interviews of program participants, which is well above the number required for significant results, as indicated by the calculation above. The probability that the results of these completed surveys accurately reflect the entire group of 2002 participants is greater than 95%.

Care was taken in choosing people to be interviewed such that no person interviewed for impressions of one program component was also interviewed for a different program component. Because of this precaution, all 132 interviewees are unique. These unique interviewees represent a sample that is 4.2% of the total unique 2002 PEC Program participants.

While an effort was made to ensure that each participant interview represented a unique person, each interviewee was, in fact, asked whether they had experience with program

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<sup>1</sup> ref. Edgar Barry Moser, Louisiana State University Department of Experimental Statistics, "Simple Random Sampling", [www.stat.lsu.edu/faculty/moser/exst7012/exst7012.htm](http://www.stat.lsu.edu/faculty/moser/exst7012/exst7012.htm). Generally accepted practice used in previous utility survey projects.

components other than that for which they were being interviewed. This question was intended to gain insight into the interactions between the various program components and the interviewees' cross-component participation. The following list shows the amount of repeat participation indicated by the records the PEC provided for 2002:

- 1,181 class participants utilized more than one class
- 87 tool loan participants made more than one tool loan transaction
- 11 architectural and building consultation participants took part in more than one consultation
- 8 library participants made use of the library more than once
- 141 program participants made use of more than one program component

Within the records of program participants, repeat users were identified in order to construct a list of unique interviewees. Individual participant records that did not have contact information associated with them were eliminated from the potential interview list. The list of unique participants for each component was then placed in random order and the participants were contacted based on this ordering.

Importance was placed on keeping the interviewed participants unique, rather than interviewing single participants for their full experience of multiple program components. The study was conducted in this manner in order to obtain the greatest diversity of opinions with the limited time and resources available.

Records provided by the PEC for this M&E Study included telephone numbers and/or email addresses for the majority of 2002 program participants, except for those records associated with the Resource Center/Library component. Availability of contact information for the program components other than the Resource Center/Library were as follows: Architectural and Building Consultations, 87%; Diagnostic Tool Lending, 99%; Workshops/Educational Services, 100%.

The user records provided by the PEC for the Resource Center/Library Services initially contained no contact information for any of the participants. Some names and telephone numbers were obtained by cross-referencing the records of those who participated in the Resource Center/Library component with those who participated in the other PEC components. This cross-referencing yielded contact information for 10 participants. A PEC representative, Marlene Vogelsang, was able to provide contact information for an additional 13 participants. In this way, contact information was provided for 23 of the 51 total 2002 Resource Center/Library participants (45% contact information availability).

These initial records for the Resource Center/Library Services represented data collected for in-depth Resource Library consultations, which typically required more than 15 minutes of staff time. Additional data that tracked more informal consultations, contacts, and requests for information were provided later. This information, as summarized in Section 4.3, shows the impressive frequency at which the Resource Library is utilized. Note that these users could not be contacted nor verified in the course of constructing the sample for this survey, however, because names and contact information were not recorded.

Of the 61 total participant records for the Architectural and Building Consultations, 8 were lacking both phone number and email contact information.

If a participant was unable to be contacted (e.g., because of outdated contact information) or was contacted and did not wish to participate in the M&E survey, that participant was replaced with a participant from further down the list of potential interviewees. A small fraction of participants who indicated they were employed by the PEC were excluded from the group of potential interviewees.

Initially, a target of 140 completed participant interviews was set for the M&E study. This was to include 14 Resource Center/Library Service participants, 14 Architectural and Building Consulting Service participants, 56 Tool Lending Service participants, and 56 Workshop/Educational Service participants.

The target number of interviews was met for the two larger PEC components, specifically the Workshop/Educational Services and the Tool Lending Services. The targets for the two smaller PEC components, the Resource Center and the Consulting Services, were not met because of the limited number of contacts available for these components, the occurrence of out-of-date contact information, and the number of people who were not interested in participating in the M&E survey. It is estimated that the ratio of successful contacts (those that resulted in a completed survey form) to total contacts attempted was approximately 40%.

The sample set of interviewed participants by program component is shown in Table 3.1. The term “PEC Unique Program Total” in Table 3.1 is less than the sum of unique component participants because of those people who participated in more than one component during 2002 (e.g., took a class and utilized the library).

In addition to contacting program participants, Newcomb Anderson Associates attempted to contact more than 300 non-participants, and conducted subsequent interviews with 50. Non-participants to be interviewed were chosen based on their being within the PEC’s targeted demographic, but not showing up in 2002 participant records.

Non-participant contacts were gathered from a combination of trade group membership records (e.g., American Institute of Architects, American Society of Heating, Refrigeration, and Air-Conditioning Engineers), industry contact lists maintained by Newcomb Anderson Associates, and surveys of Yellow Pages listings for energy-related companies (e.g., architectural, engineering, energy consulting firms). Non-participants were interviewed based on their inclusion in the PEC’s stated target participant groups, and their confirmation of non-participation in 2002. The target participant groups are as follows:

- Commercial building operators
- Commercial businesses
- Commercial developers, architects, and engineers
- Residential architects
- Energy efficiency program implementers

Non-participants identified from the indicated sources were “cold-called” via telephone and asked to respond to a short survey regarding their business and involvement in energy-related informational programs. These non-participant interviewees were also asked about their awareness of the PEC and reasons for not taking advantage of the services in 2002.



**Table 3.1 : 2002 Distribution of Program Participants and M&E Sample**

<b>Program Component</b>	<b>Total Number of 2002 Program Participants as Indicated by PEC Records</b>	<b>Component's Percentage of All Participants</b>	<b>Number of Participants Included in Newcomb Anderson Associates' Independent Survey</b>	<b>Component Interviews as a Percentage of the Total Number of Interviews</b>	<b>Component Interviews as a Percentage of Component Participants</b>
Total Unique Resource Center/Library Participants*	51	1%	10	7%	20%
Total Unique Architectural and Building Consultation Participants	61	2%	9	8%	15%
Total Unique Diagnostic Tool Lending Participants	292	9%	56	42%	19%
Total Unique Workshop/Educational Service Participants	2,881	88%	57	43%	2%
Component Total	3,285	100%	132	100%	
PEC Unique Program Total	3,145				4%

\* Note that the information listed for this program component represents users tracked by the PEC. PEC staff generally recorded contact information in cases where at least 15 minutes of staff time were required. A review of more informal PEC data for 2002 Resource Center contacts shows approximately 1,800 total contacts.

### 3.5 Follow-up Survey Questionnaire Tools

The survey tools used during the M&E interviewing process can be found in Appendix E. Included are the four questionnaires corresponding to the four PEC program components and a fifth questionnaire that was used when interviewing non-participants.

Each of the program participant questionnaire forms contains between 16 and 18 questions. The first nine questions are general in nature and common to all surveys. When conducted by telephone, participant interviews lasted between 5 to 10 minutes. It is estimated that participants who opted to complete the forms on their own time and fax in the results spent a similar amount of time on the survey as did those reached by telephone (i.e., 5 to 10 minutes).

The program non-participant forms that were used when interviewing people who did not make use of the PEC during 2002 contained nine questions. These questionnaires required less than five minutes to complete, whether the interview was conducted by telephone or whether the interviewee opted to complete the form on his/her own time.

The majority of the questions put to the interviewees were presented in multiple choice format. The responses to these questions have been tabulated and presented in graphs in order to give an indication of the demographic makeup of the PEC program participants as a whole, as well as that of the participants according to the PEC components they used. (See Section 4, "Results"). In addition to establishing the demographics of the program, the survey was also designed to ascertain how well the program helps participants implement state-of-the-art energy efficient technologies.

During the interviews, open-ended questions were also posed to the interviewees regarding future improvements they would like to see made to the PEC services and their general program impressions. These responses have been categorized for the purposes of analyzing their significance. Like responses have been combined for purposes of analyzing their repetition, yet unique and insightful suggestions have also been highlighted. (See the "Results" and "Recommendations" Sections for reporting and analysis of M&E findings).

The effectiveness of PEC's outreach efforts was analyzed by reviewing the available outreach documentation alongside the Program participation records. In addition, follow-up interviewees were asked about the manner in which they became aware of the services they used.

During the M&E process, the PEC's efforts to formalize relationships with various city government energy efficiency departments, universities, and trade associations was evaluated. This evaluation was accomplished by reviewing program records with respect to these partnering entities, as well as by asking interviewees about their relationships to these groups.

### 3.6 Analysis of Results

Once all the participant and non-participant interviews were complete, the results were compiled into an Excel spreadsheet (See Appendix B for a hardcopy printout of this file). This spreadsheet provided a single location where all the survey results could be gathered, and allowed the results to be easily summarized. By summarizing the interviewees' responses to the multiple-choice questions, Newcomb Anderson Associates was able to determine the percentage responses for each of the choices, both categorized by program component and across the entire PEC Program as a whole. Responses for questions of particular interest are discussed in Section 5 of this report.

PEC representatives provided Newcomb Anderson Associates with access to the results of three participant surveys completed prior to the onset of this M&E study. These included both pre-workshop and post-workshop survey forms completed by the Workshop/Educational Service participants immediately prior to and following the workshops, and the results of an online survey completed by participants in the Diagnostic Tool Lending program. A summary analysis of this data appears in Appendix C. Newcomb Anderson Associates used the summary analysis of the prior surveys to preliminarily validate the results that were obtained during the surveys conducted under this study.

### 3.7 Summary of Tracking Data Collected by PEC

At the beginning of this M&E study, the PEC provided Newcomb Anderson Associates with the following tracking data.

- Hard copies of Fall 2002 and Spring 2002 Pre-course Surveys. Class participants completed these forms at the beginning of the sessions they attended. The forms asked for information about participants' businesses, and their related projects.
- Hard copies of Fall 2002 and Spring 2002 Post-class Evaluations. Class participants completed these forms at the end of the sessions they attended. These evaluations asked for participants' impressions of class effectiveness, their perceived performance improvements (Fall forms only), and how they found out about the class (Spring forms only).
- Electronic results of an Internet-based survey of 2002 Tool Lending Program users. This survey asked 115 participants for the projected electric demand, electric energy, and natural gas savings associated with the projects associated with their tool loans. They were also asked about their general satisfaction with the service, their participation in various incentive programs, and the category of the energy analysis they undertook.

The telephone survey of a random sampling of 2002 PEC Program participants Newcomb Anderson Associates conducted, which was the primary focus of the M&E evaluation described in this report, was completely independent of the tracking data sources listed above.

The PEC provided class/workshop program pre-course surveys and post-class evaluations to Newcomb Anderson Associates in hard-copy form. Electronic results of the questionnaires were requested of the PEC, but were not available. The absence of electronic results made it infeasible to compare the participant data gathered from these sources to the results obtained from the independent telephone survey of participants Newcomb Anderson Associates conducted under this M&E study.

To get a general idea of the data contained within the Pre-course Surveys and Post-class Evaluations, Newcomb Anderson Associates compiled the results of these forms for four Spring 2002 classes and four Fall 2002 classes (consisting of approximately 150 individual forms). In order to obtain a broad range of responses within the compiled results, a class from each of the categories of energy measurement, mechanical systems, architecture and lighting were chosen from each season, as follows:

- *Building Energy Audits*, Spring 2002 and *Benchmarking and CAL-ARCH*, Fall 2002
- *Capturing Motor Efficiency Opportunities*, Spring 2002 and *Chilled Water Plant Retrofits*, Fall 2002
- *The Glass Class*, Spring 2002 and *Solar Geometry*, Fall 2002
- *Lighting Fundamentals*, Spring 2002 and *Task and Ambient Lighting*, Fall 2002

Later in the study, a summary of Resource Library contacts was also provided.

Review of the data provided by the PEC is discussed in the following section.

#### 4. REVIEW OF PG&E TRACKING DATA

##### 4.1 PG&E Class Participant Questionnaires

The results of the compilation of questionnaires discussed in Section 3.7 are summarized in this section. Note that this information does not represent as accurate a picture of the program population as a whole as do the responses from the telephone survey Newcomb Anderson Associates independently conducted, which was a random sampling. The results gathered from the Pre-class Surveys and Post-class Evaluations will be biased toward those demographic groups with specific interests in those classes indicated. However, for reference purposes, the compilation of this tracking data from these eight specific classes is presented in Table 4.1.

Due to the difference between the random sampling procedure Newcomb Anderson Associates used during the independent telephone survey, and the review of the pre-existing Pre-class Surveys and Post-class Evaluations associated with specific classes presented here, the results cannot be accurately compared. The random sampling method Newcomb Anderson Associates used while conducting the independent telephone survey provides a more accurate depiction of the demographic breakdown of the entire population of 2002 PEC Program participants.

The results of Pre-class Surveys show the demographic breakdown of the business sectors that participants were associated with as well as descriptions of their associated projects. Respondents were allowed to indicate multiple sectors and project types, leading to totals greater than 100%.

The results from the Post-class Evaluations show the participants' opinions of the classes they participated in based on a scoring system of 1 (worst) to 5 (best). These evaluations also asked about the percentage of time respondents were involved with tasks associated with the class subject matter and their perceived performance improvements (fall respondents only). They were also asked where they found out about the PEC classes (spring respondents only).

**Table 4.1: Results of Pre-class Surveys Gathered by the PEC Prior to the Beginning of the Current M&E Study**

<b>Participant Title</b>	
Commercial Building Operator	7%
Commercial Business Rep	15%
Energy Efficiency Program Implementer	9%
Commercial Developer	9%
Commercial Architect	12%
Engineer	28%
Residential Architect	5%
Other	1%
Not Specified	5%
<b>Current Projects</b>	
New Construction	34%
Renovation/Retrofit	56%
Other	1%
Not Specified	23%
Residential	23%
Commercial	45%
Industrial	17%
Agricultural	3%
Institutional/Educational	23%
Other	1%
Not Specified	19%
Heating	3%
Cooling	38%
Lighting	38%
Architectural Design	24%
Other	5%
Not Specified	3%

**Table 4.2: Results of Post-class Evaluations Gathered by the PEC Prior to the Beginning of the Current M&E Study**

<b>Participants' Impressions of Class</b> (1=worst, 5=best)	
	<b>Average</b>
Overall Impression	4.35
Appropriateness – Level	4.05
Appropriateness – Relevance	4.12
Organization	4.30
Instructor Ability	4.28
Handouts	4.17
Presentation Graphics	4.30
<b>Participants' Time Spent on Relevant Projects and Performance</b> (Answers from Fall 2002 Forms)	
	<b>Average</b>
Percentage of Time Spent on Associated Projects	25%
Performance Before Class	34%
Performance After Class	66%
Performance Improvement	33%
<b>How Participants' Discovered Classes</b> (Answers from Spring 2002 Forms)	
	<b>Percentage</b>
Calendar	27%
Web Page	24%
Colleague	9%
Email	45%
Fax	0%
PG&E Rep	6%
Newsletter	0%
Other	1%

#### 4.2 Internet-based Survey of Tool Lending Participants Gathered Prior to Current M&E Study

The results of this Internet-based survey were provided to Newcomb Anderson Associates in electronic format. All respondents indicated positive satisfaction with the program, with all providing satisfaction ratings of either “good”, “very good”, “great”, or “excellent”. These results are in keeping with the overall satisfaction levels expressed by the respondents to Newcomb Anderson Associates’ independently conducted telephone survey, which was the primary focus of the current M&E Study.

Respondents were asked to estimate the energy savings resulting from the projects associated with their use of the Tool Lending Program. These numbers have not been verified by any independent source. Since the PEC Program is deemed to be “information only”, specific energy savings numbers are not relevant to the current M&E Study and are disregarded in this report.

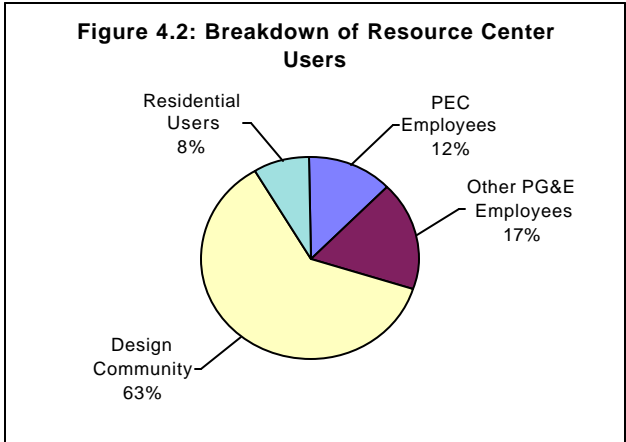
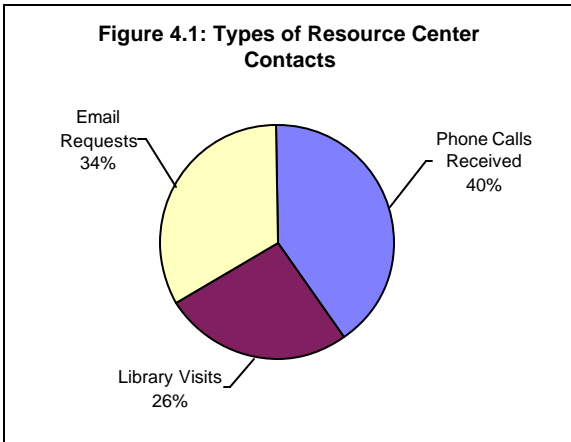


#### 4.3 Review of Resource Library Contacts

The PEC provided a summary of Resource Library contacts that noted all unique users of library information, including casual telephone requests, drop-in visits, and email requests for information. This tracking information, as computed by Marlene Vogelsang of the PEC, shows the impressive frequency at which the Resource Library is utilized. Some of these data are summarized in Table 4.3 and Figures 4.1 and 4.2. As discussed in Section 3.4, these users could not be verified nor contacted as part of this independent survey nor could they be included in the analysis outlined in Section 5.5. This information is very important, however, in demonstrating the robust and highly valued services provided by the Resource Library.

**Table 4.3: Energy Resource Center Contacts – 2002**

Type of User	Type and Number of Contacts			
	Phone Calls Received	Library Visits	Email Requests	Total
PEC Employees	84	106	31	221
Other PG&E Employees	236	51	23	310
Design Community	320	267	508	1,095
Residential Users	72	43	32	147
<b>Total</b>	<b>712</b>	<b>467</b>	<b>594</b>	<b>1,773</b>



## 5. RESULTS OF INDEPENDENT M&E SURVEY

### 5.1 PEC Program Objectives and Goals

The PEC has established the following objective measures for evaluating program success:

- At least 50 seminars/workshops to be completed
- At least 60 architectural consultations to be completed
- At least 250 tool loans to be completed

Newcomb Anderson Associates has determined that all of these objective measures were surpassed by the PEC during the 2002 program year. The PEC's records show that over 100 workshops were held, 61 architectural consultations were completed, and 574 tool loan transactions took place (See Table 5.1). Newcomb Anderson Associates confirmed the validity of these records during the participant interviewing process. All participants contacted by Newcomb Anderson Associates confirmed that these records were correct. According to the measures listed above and the validated program records, the 2002 PEC Program can be deemed a success.

**Table 5.1: Program Objectives**

	<b>Workshops</b>	<b>Architectural Consultations</b>	<b>Tool Loans</b>
Required	50	60	250
Completed	>100	61	574

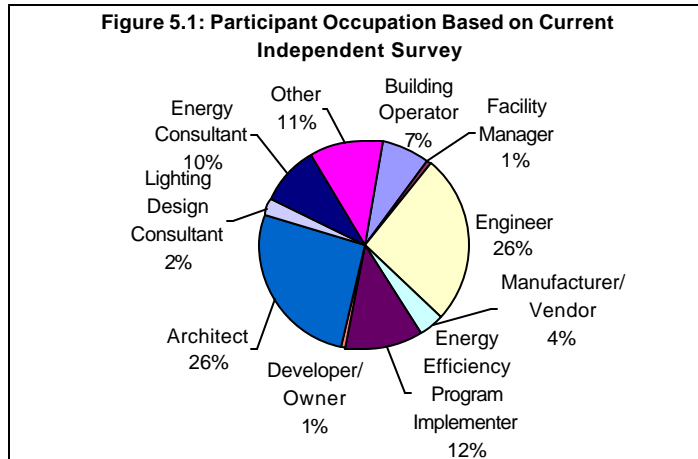
The PIP also includes program goals for the PEC. While these goals are not considered grounds for measuring program success or failure, they represent the direction that PEC representatives would like to see the program move. These program goals indicate a desire to improve program outreach to residential sector participants, small businesses, and hard-to-reach geographical areas. The detailed view of the survey results presented in the following sections characterizes the interview sample participants in relation to these goals, and in other areas of description. All data discussed in this Section are drawn from the M&E study survey results.

In general, the overall survey results reflect very positively on the success of the PEC's efforts. Two sets of data are summarized in this section: overall demographic data and individual program data. Demographic data indicate that the PEC's programs are reaching their intended audience, in addition to other groups not specifically identified as target audiences, and that the programs have had a significant influence on changing the standard practices of participants. Other demographic data collected include the size of businesses served; the participants' primary business sector; what, if any, incentive programs they have participated in; and how they found out about the PEC. These data are represented in graphs on the following pages. The survey data also reflect a high level of awareness of the PEC programs within the target audiences. These data are drawn from the first nine questions of the surveys.

Data specific to individual program components are also summarized in order to present the particular successes and potential areas of improvement of each program component in more detail. These data are taken from the second half of the surveys and address the participants' use of each program component and also their evaluations of particular components.

## 5.2 Overall Program Demographics Based on Current Independent Survey

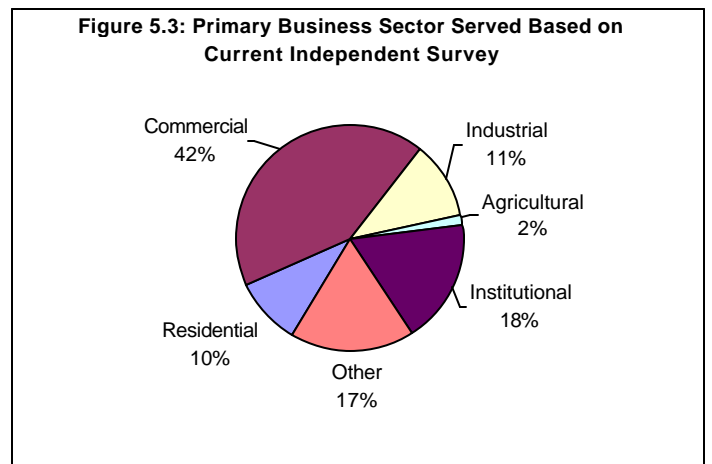
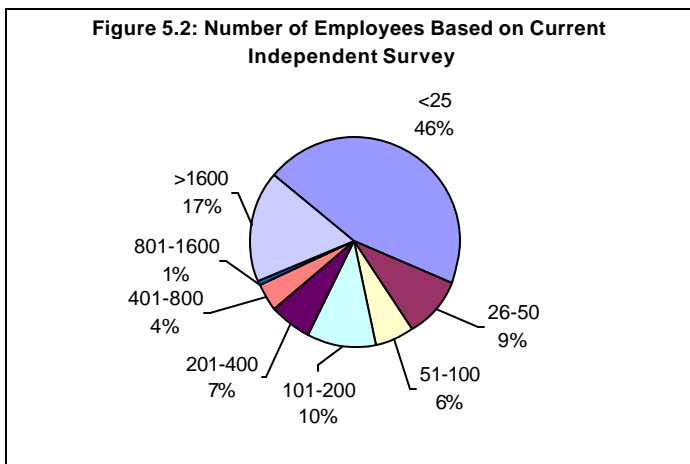
All data discussed in this Section are drawn from the surveys Newcomb Anderson Associates conducted with randomly selected PEC program participants. The PEC's target audience for its programs includes commercial building operators; commercial businesses; commercial developers, architects, and engineers; residential architects; and energy efficiency program implementers. All of these groups were represented in the survey results,



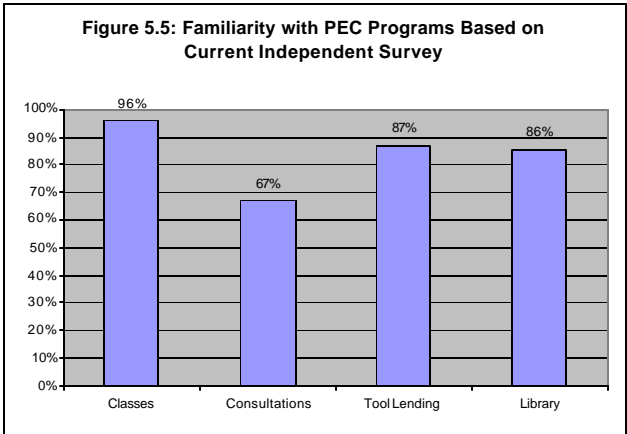
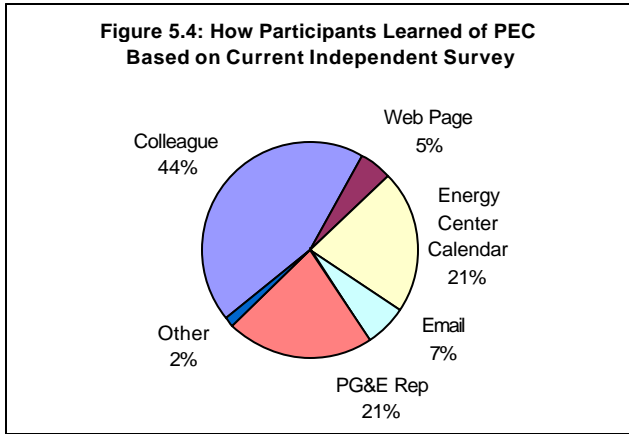
with the heaviest participation coming from engineers (26%), architects (26%), and energy efficiency program implementers (12%). A complete breakdown of interviewees by occupation is presented in Figure 5.1. A significant portion of those interviewed listed "other," and these included a wide range of occupations, ranging from police officers and government employees to building contractors and salespeople.

Data were also collected on the size and type of businesses being served by the PEC. Small businesses (as gauged by the number of employees) make up the largest percentage of PEC participants (46%), as shown in Figure 5.2. PEC program participants also appear to be drawn from a fairly diverse field of businesses. Figure 5.3 indicates the various business sectors served by participants.

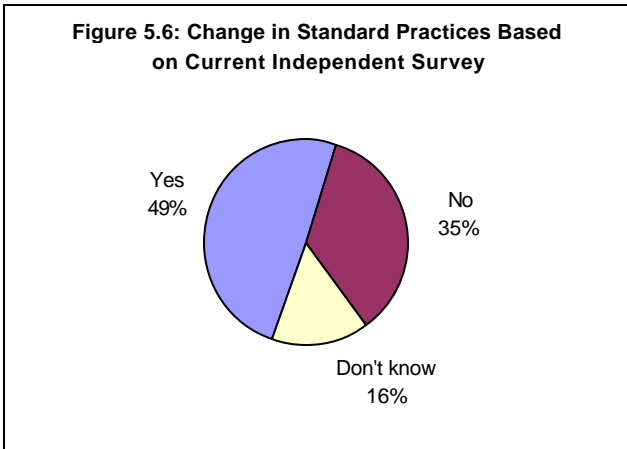
Demographic data that would be comparable to the data presented here do not exist for all 2002 PEC participants and all programs.



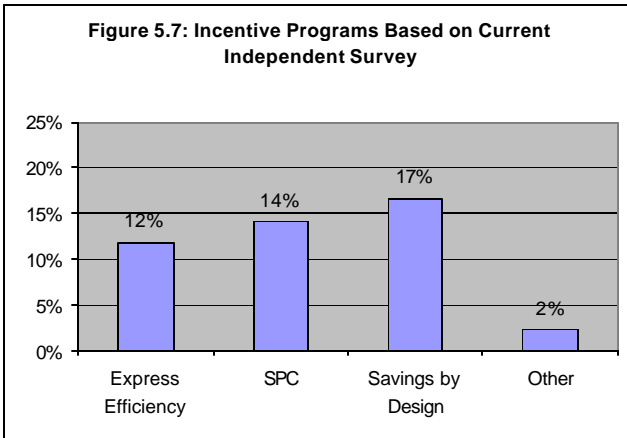
Awareness of the PEC and its programs appears to spread in a variety of ways, as shown in Figure 5.4, with “word of mouth” among colleagues appearing to be the most common method. Survey data indicate a high level of overall awareness of the PEC and its services within the target communities, as can be seen in Figure 5.5. Interviewees were asked to indicate which PEC programs were most familiar to them. Results show that all programs had a high degree of visibility within the customer community. Classes were the most well-known (96%) and the Architectural and Building Consulting Service was the least well-known (67%). The lower level of awareness of the Architectural and Building Consulting Service is most likely due to the program’s being targeted at a smaller, more select demographic.



The impact that PEC programs have had on their participants’ standard practices can be seen in Figure 5.6. When asked if the PEC had influenced them to change any standard practices (standard designs, operations and maintenance practices, retrofit procedures, specifications, etc.) almost half of all respondents answered affirmatively.



Interviewees were also asked to list incentive programs they participated in 2002. These results are shown in Figure 5.7.



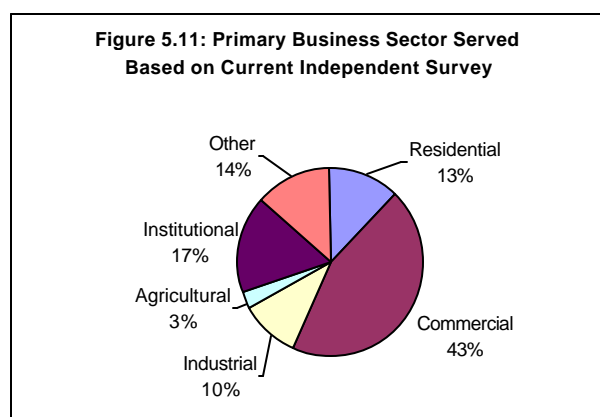
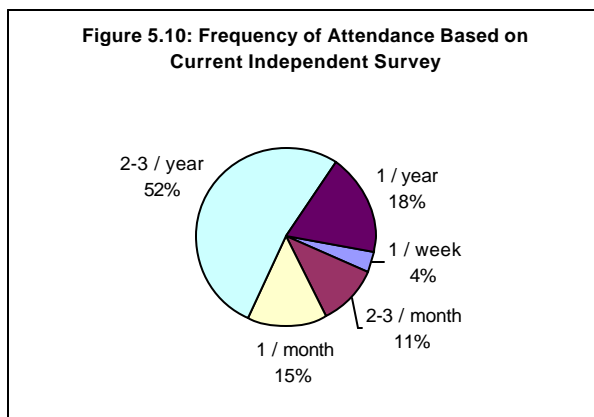
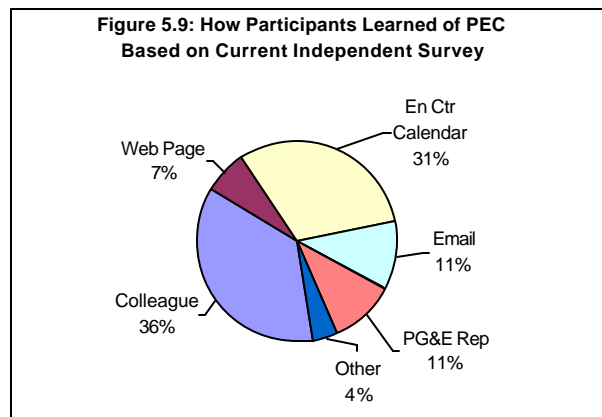
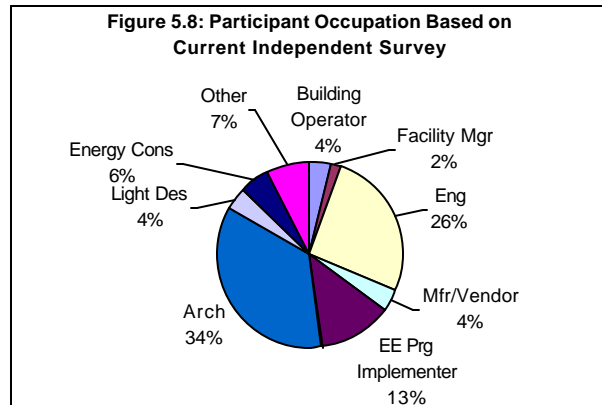
### 5.3 Classes/Workshops – Based on Current Independent Survey

A total of 55 participants in the PEC Workshop/Classes program were randomly selected and interviewed. All data discussed in this Section are drawn from the M&E study survey results. The largest groups attending classes were architects (35%), engineers (26%), and energy efficiency program implementers. A complete breakdown can be seen in Figure 5.8.

Those attending were most likely to have learned of the program via colleagues (36%) or announcements on the Energy Center Calendar (31%), as shown in Figure 5.9. Participants tended to be regular attendees as well, with the majority using PEC program services two times a year or more, as shown in Figure 5.10.

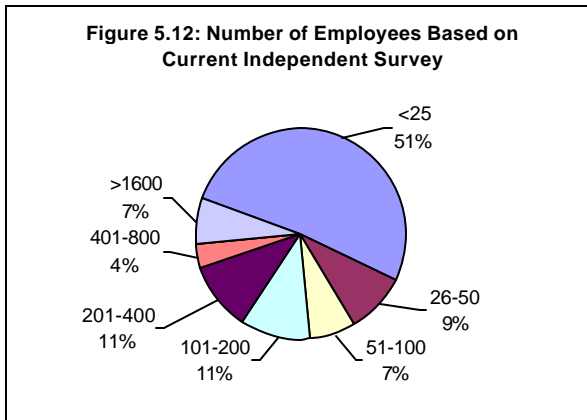
As shown in Figure 5.11, businesses focusing primarily on the commercial sector were the most heavily represented. The agricultural industry was the least represented, and other sectors were roughly evenly split.

The demographic breakdown of all 2002 participants is accurately reflected by the demographic breakdown of those surveyed during this M&E study, to a confidence level of at least 95%. The statistical significance of the sample of participants interviewed is further discussed in the “Methodology” section of this report (see Section 3.4).

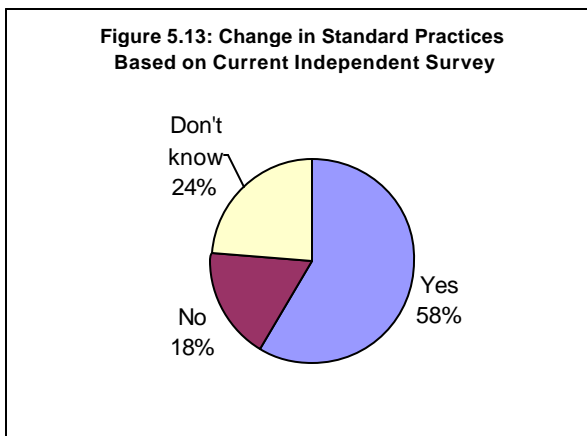


The sample group of 2002 class participants interviewed for this study was chosen at random from the complete list of 2002 participants provided by the PEC. Further details about the construction of this random sample can be found in Section 3.5.

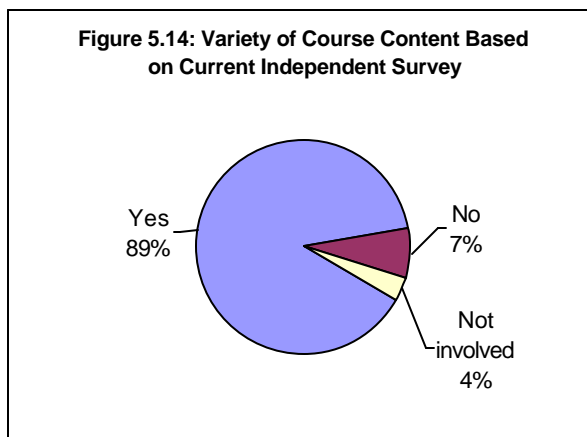
Figure 5.12 indicates that the size of the businesses served by the PEC's classes tended to be small, with 25 or fewer employees.



In general, questions regarding the effects and impacts of the classes yielded positive results. The classes appear to have a substantial impact on standard practices, with 58% responding that the workshops had influenced participants to update their standard practices, as shown in Figure 5.13. While many respondents indicated these changes were of a general nature, others indicated specific changes, including changes to standard building control specifications, energy audit practices and recommendations, and increased use of solar technology.



The vast majority (80%) of respondents indicated that they felt the classes offered an adequate depth of study. Similarly, Figure 5.14 illustrates that a large percentage of respondents (89%) felt the classes provided a wide variety of content. The majority of attendees (87%) also found the classes provided them with information and resources directly applicable to their work.

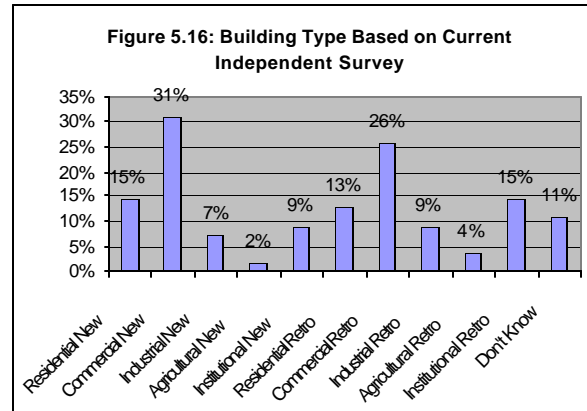
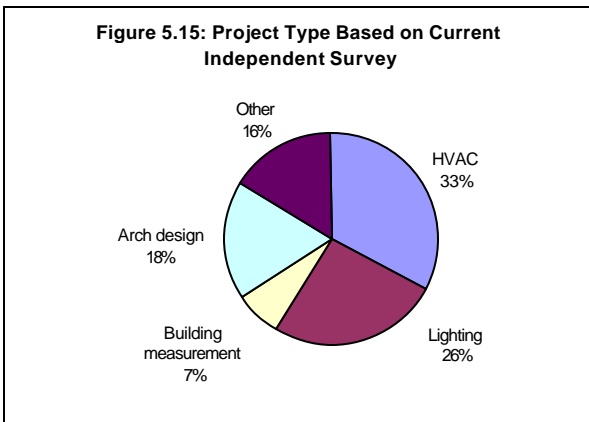


Similarly, participants were asked to rate their performance improvement on tasks requiring skills taught at the PEC courses they attended. All respondents indicated some level of improvement, with rates of improvement between 25% and 50% being the most consistently cited (44% and 29% of all respondents, respectively). Twenty percent indicated a 75% rate of improvement, and 4% indicated a 100% rate.



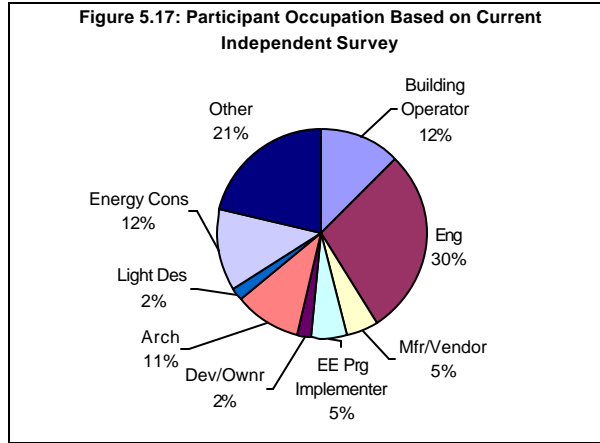
In terms of the direct application of knowledge drawn from the classes, a majority of participants (53%) indicated that energy-savings measures were incorporated into their projects as a result of assistance given by the PEC classes in 2002. As shown in Figure 5.15, the majority of these projects were HVAC (33%) and lighting (26%). Figure 5.16 illustrates that these projects were largely implemented as part of new, commercial building projects (31%) and commercial renovations or retrofits (26%). (Note that the values in Figure 5.16 sum to greater than 100% because some participants indicated that more than one building type was influenced through the gained information.)

The PEC currently retains class participant data, which showed results comparable with the results presented in this section, in uncompiled hard-copy format only. This makes accurate comparison of the data infeasible, however, a small sample of the data gathered by the PEC prior to the beginning of the current M&E study can be found in Section 3.7 of this report, for purposes of rough comparison.

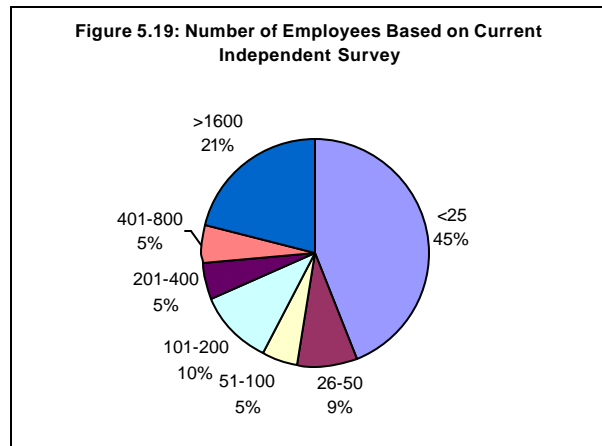
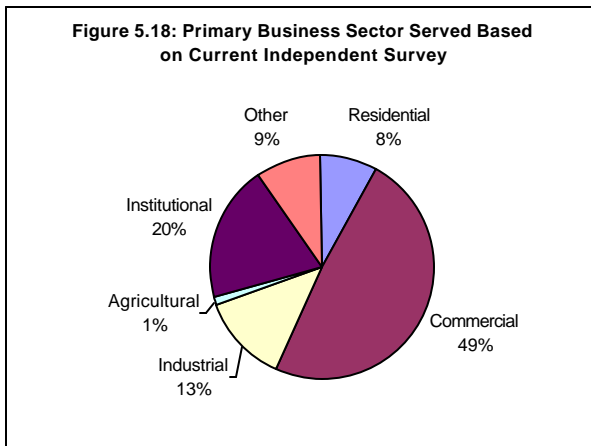


#### 5.4 Tool Lending Service – Based on Current Independent Survey

Newcomb Anderson Associates randomly selected and interviewed a total of 57 participants in the PEC Building Performance Diagnostic Tool Lending Service program. All data discussed in this Section are drawn from the M&E study independent survey results. The largest groups using the service were engineers (29%), with a rather wide variety of disciplines represented to a lesser extent, including architects (12%), building operators (12%), and energy consultants (12%). A complete breakdown can be seen in Figure 5.17.



As shown in Figure 5.18, businesses focusing primarily on the commercial sector were the most heavily represented, with the agricultural industry being the least represented. Figure 5.19 indicates that the size of the businesses served by the tool lending service tended to be small, with 25 or fewer employees.



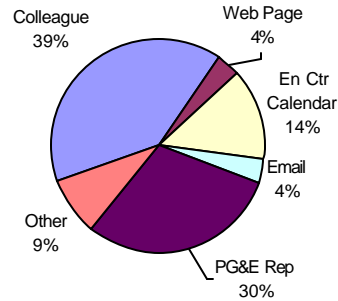
Those using the tool lending service were most likely to have learned of the program via colleagues (40%) or PG&E representatives (30%), as shown in Figure 5.20. Tool lending service participants tended to be regular attendees as well, with the majority using PEC program services two or more times a year, as shown in Figure 5.21.

A majority of participants (77%) indicated that the tools borrowed from the PEC were being used in a wide variety of energy-savings measures and projects. The majority of these projects were HVAC (37%) and lighting (23%), with building measurement and architectural projects registering lower percentages of 19% and 14%, respectively.

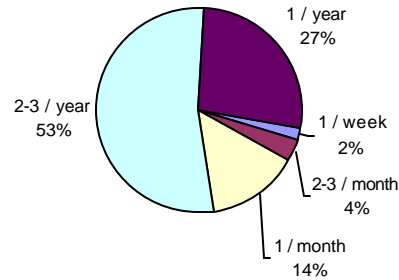
Figure 5.22 illustrates that these projects were largely implemented as part of retrofit and renovation projects associated with the tool loans in commercial buildings (33%), industrial facilities, (19%), and institutional facilities (19%).

Demographic data that would be comparable with the data presented here do not exist for all 2002 PEC participants in the Tool Lending program.

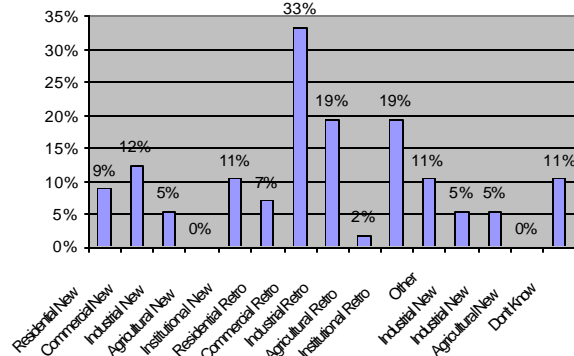
**Figure 5.20: How Tool Lending Service Participants Learned of PEC Based on Current Independent Survey**



**Figure 5.21: Frequency of Attendance Based on Current Independent Survey**



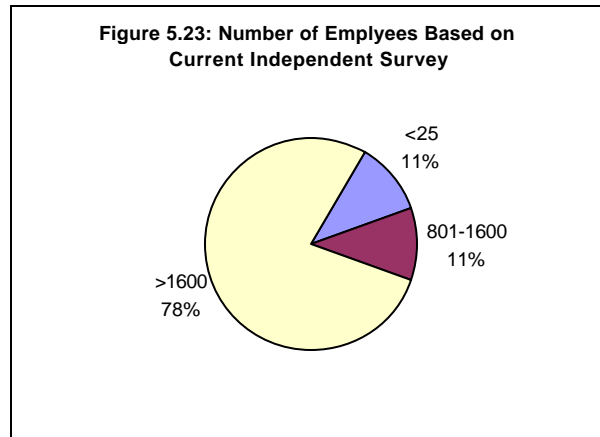
**Figure 5.22: Building Type Based on Current Independent Survey**



## 5.5 Library – Based on Current Independent Survey

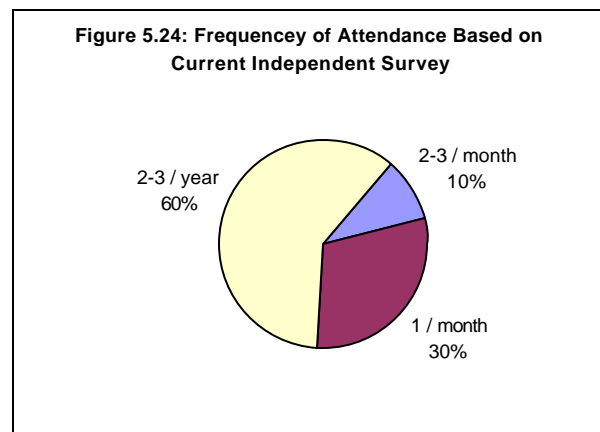
Ten users of the PEC Energy Resource Center Library program were randomly selected and interviewed. All data discussed in this Section are drawn from the M&E study independent survey results.

As outlined in Section 3.4, numerous Resource Center contacts were made in 2002; these comprised informal telephone calls, visits, and requests for information. These contacts were tallied, but names and contact information of users were not collected thus these users could not be included in the sample surveyed for this study. The results presented in this section should be interpreted with this in mind and may not represent the opinions or feedback from “casual” Resource Center users, who are likely to highly value the services provided. (Further summary of the full record of these contacts is provided in Section 4.3.)



The largest groups using the library were energy efficiency program implementers (50%), energy consultants (20%), and engineers (20%). Figure 5.23 indicates that the size of the businesses served by the Resource Center tended to be very large, with 1,600 or more employees. This is most likely due to the majority of program participants being PG&E employees.

Those surveyed were most likely to have learned of the program via colleagues (80%) or a PG&E representative (20%). Participants tended to be regular attendees as well, with the majority (60%) using PEC program services between two and three times a year and the remainder using the services more frequently, as shown in Figure 5.24.



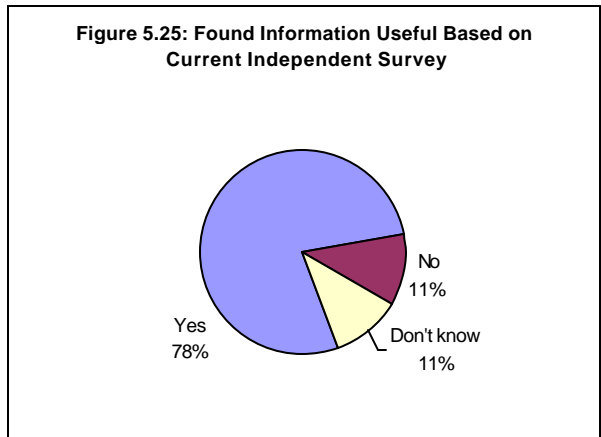
The vast majority (90%) of the program participants preferred receiving materials from the library via e-mail, with the remainder evenly split between mailed paper copies and obtaining them through the website.

The Energy Resource Center appears to have a less significant impact on standard practices than other PEC programs, with only 30% responding that materials borrowed from the library had influenced participants to update their standard practices. The remaining 70% responded that their standard practices had remained unchanged. However, it should be noted that since no baseline of energy efficient practices was established, these conclusions are based purely on the individual interviewees' perceptions of how using the library impacted their standard practices. Baseline analysis of participant behavior was outside the scope of this study, but was included the Program Year 2001 evaluation. In

many cases, the library's resources were used in conjunction with existing energy efficient practices, or else were used for such specific applications that no significant changes in overall behavior would logically result.

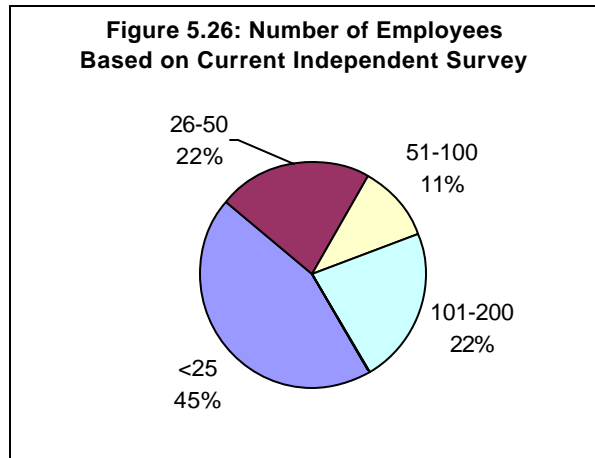
As shown in Figure 5.25, a large majority of participants (70%) indicated that the Energy Resource Center provided information that proved useful in implementing various energy-saving measures in 2002. The majority of these projects were HVAC (60%) and lighting (20%).

Demographic data that would be comparable with the data presented here do not exist for all 2002 PEC participants in the Library program.

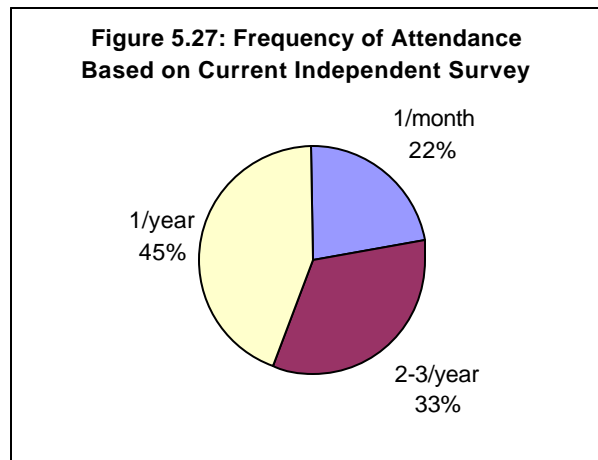


## 5.6 Architectural and Building Consulting Services – Based on Current Independent Survey

Newcomb Anderson Associates randomly selected and interviewed 9 users of the PEC Architectural and Building Consulting Services program. All data discussed in this Section are drawn from the M&E study independent survey results. The user demographics heavily favored architects (89%), with the remainder being engineers (11%). Figure 5.26 indicates that the size of businesses using the consulting services tended to be very small, with those with 25 or fewer employees predominating and no businesses with more than 200 employees participating.



Those attending were most likely to have learned of the program via colleagues (67%) or a PG&E representative (20%). Forty-four percent of program participants used PEC program services once per year, with a slightly smaller percentage (33%) using the programs two to three times per year, as shown in Figure 5.27.



To get a sense of what other energy-savings measures customers were participating in, Newcomb Anderson Associates asked the interviewees to list incentive programs they participated in in 2002. Savings by Design was the most popular program, with 56% of respondents reporting that their businesses had participated.

The Architectural and Building Consulting Services appear to have a significant impact on standard practices, with 44% of survey participants responding that knowledge gained from the consulting services had influenced them to update their standard practices. The remaining 56% responded that their standard practices had remained unchanged.

All participants (100%) reported gaining information generally applicable to their work from the consulting services, and 89% indicated that the consulting services provided information useful in implementing specific energy-saving measures as well.

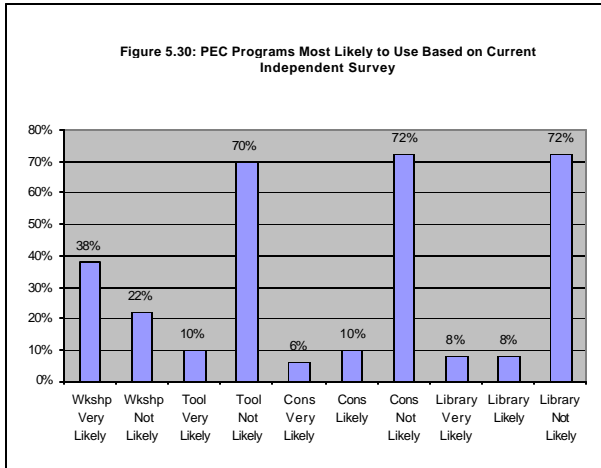
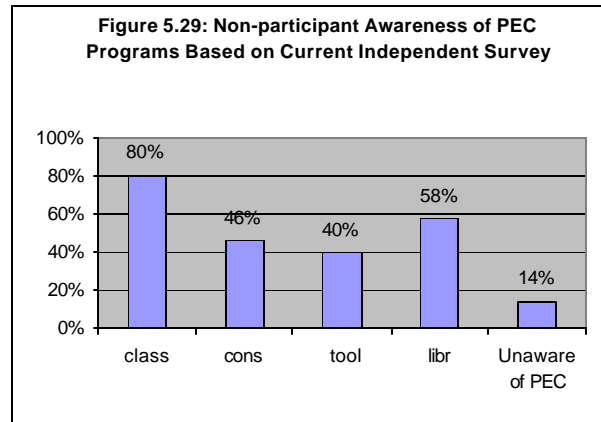
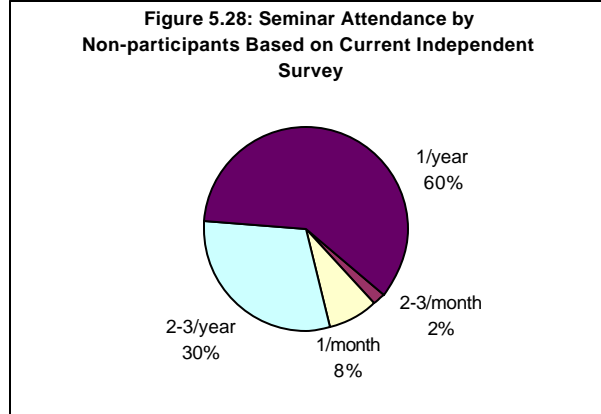
Demographic data that would be comparable with the data presented here do not exist for all 2002 PEC participants in the Consulting Services program.

## 5.7 Non-participants – Based on Current Independent Survey

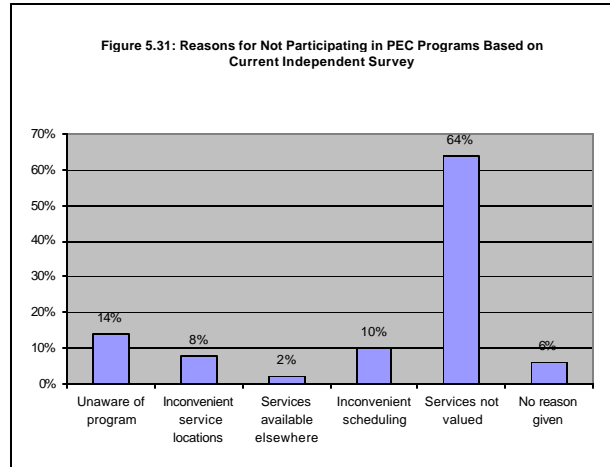
Newcomb Anderson Associates contacted and interviewed 50 non-participants to gather insight as to their reasons for not using PEC resources, and to evaluate their willingness to attend future offerings. A description of the non-participants that were interviewed is provided in Section 3.4. The information gathered from those willing to participate in this survey is presented here.

Of those interviewed, all reported attending energy efficiency-related workshops or seminars other than those offered by the PEC in varying degrees, as shown in Figure 5.28. Figure 5.29 indicates that non-participants were also largely aware of PEC program offerings, with 80% responding that they were aware of the PEC’s classes and workshops, and 58% being familiar with the PEC’s Energy Resource Center and Library as well. Only 14% of those polled indicated that they were unaware of the PEC. The majority of those familiar with the PEC had heard of it from PG&E representatives (34%), with a smaller minority learning of it via colleagues (18%) or e-mail (14%).

As shown in Figure 5.30, non-participants indicated that they were more likely to take advantage of certain program offerings than others, with majorities stating that they were not likely to use the Tool Lending service (70%), the consulting services (72%), and the Energy Resource Center (72%).



Reasons for not using PEC resources varied, but tended to emphasize a lack of pressing necessity for the services, as seen in Figure 5.31. Small percentages indicated that service locations or scheduling were inconvenient (8% and 10%, respectively). To a large extent, interviewees indicated they had not taken advantage of the PEC simply because it was not relevant to their current work or because they were too busy to properly participate in the program offerings. Many of these same respondents noted that they would not hesitate to use the PEC should the need arise.



The size of the sample of non-participants interviewed, and the resultant confidence level in the accuracy of the responses, can be analyzed using the same method presented in Section 3.4 of this report. The equation is repeated here:

$$SS = Z^2 (P) (1 - P) / CI$$

where,

SS	=	Infinite population sample size
Z	=	1.645 for 90% confidence
P	=	0.5
CI	=	0.116

Performing this calculation yields a sample size of 50, with a confidence level of 90% and a confidence interval of 11.6% (assuming the population of non-participants to be infinite).

Newcomb Anderson Associates's recommendations based on the findings of the non-participant interviews can be found in Section 5.



## 6. RECOMMENDATIONS

Newcomb Anderson Associates has examined the data gathered during both the participant and non-participant surveys and gained insight into both the makeup of the PEC and its component programs, as well as some areas for improvement. What follows in this section are Newcomb Anderson Associates' recommendations for potential program improvement based on an examination of the data gathered for this study.

The analysis included attention to the statistical makeup of the survey respondents indicated by responses to multiple-choice questions, and to specific comments given in response to open-ended survey questions regarding areas where the program could be improved. The recommendations given here also draw from information provided in the PEC's Program Implementation Plan regarding the PEC's future goals, as well as previous surveys and records collected by the PEC.

Representatives of PG&E, the PEC, or the CPUC may find more insight by reviewing and combining the results of this study with other program studies that have come before or will be completed in the future. The data itself are discussed in the Results Section of this report and also presented in their raw form in the appendices. Copies of the completed surveys gathered during this project will be provided to PG&E separately as back up project documentation.

### 6.1 Improve Outreach to Underserved Occupational Sectors

The survey questionnaires asked all of the interviewees to identify their primary occupation and the size of their business. Overall, the results of this question indicate a fairly well distributed PEC user base. Figures 5.1 and 5.2 in the Results section show the results of this demographic study for the PEC Program as a whole.

Note that the occupational categories of Manufacturer/Vendor (4%), Lighting Design Consultant (2%), Developer/Owner (1%), and Facility Manager (1%), each make up less than 5% of the participant base as a whole. This could be due to a low percentage of the total targeted population that would identify their primary occupation with these titles, which would result in a low percentage appearing in the PEC user base. However, the PEC may find fertile ground for new participant recruitment by stepping up its outreach efforts with regards to these occupational categories.

While contributing to a significant portion of the PEC user base as a whole (12%, third highest ranked), participants who indicated their primary occupation as "Energy Efficiency Program Implementer" made up only 5% of the users of the Diagnostic Tool Lending Service. The PEC may want to increase awareness of this particular service among this occupational sector.

Examination of the sizes of the survey respondents' businesses appears to indicate a healthy distribution between small (less than 25 employees) businesses to large corporations (greater than 1,600 employees), and the range of sizes in between. Participants from small companies appear to make up the largest portion of the user base, comprising 46% of the total participant base. Newcomb Anderson Associates believes employees of smaller companies probably make up such a large portion because smaller companies typically offer greater scheduling flexibility, and perhaps possess less in-house

energy resources. Newcomb Anderson Associates does not see the need to recommend greater outreach efforts directed at different sized businesses.

It should be noted that a significant portion of 2002 participants classified as working for large organizations (larger than 1,600 employees), were employees of Pacific Gas & Electric. Employees of PG&E comprised approximately 8% of the complete group of tool lending service participants and approximately 3% of class participants.

Because of the significant number of PG&E employees participating in the PEC program, they were not excluded from potential candidates to be included in the interview sample. Energy Efficiency Program Implementers are one of the audience groups specifically targeted by the PEC. The significant influence PG&E and other investor-owned utilities (IOUs) have in the realm of energy efficiency program implementation presents another compelling reason to include employees of these organizations in the sample base.

One class participant included in the sample and interviewed was an employee of PG&E. Six tool lending service participants included in the interview sample were employees of PG&E.

## 6.2 Improve Awareness of Less Well-known Program Components

Overall awareness of all the services offered by the PEC was found to be high among both participants and non-participants. The most widely known program component was found to be the Workshops/Educational Services, with 96% of participants and 80% of non-participants interviewed indicating awareness. Please see Figures 5.5 and 5.29, indicating the results of the survey with regard to program awareness.

While awareness of all the programs was found to be high, program participants were found to be least aware of the Architectural and Building Consultation services (67% awareness). This may be due to the fact that this program is mainly directed toward a single occupational sector, architects. Efforts to improve awareness of this program may prove fruitful.

Program non-participants, while well aware of the PEC as a whole, were found to be least aware of the Diagnostic Tool Lending Service. Increasing the publicity of this program may be an effective method of gaining new first-time users of the PEC. The non-participants interviewed during this study indicated the following PEC component awareness:

- 80% of non-participants aware of Workshop/Educational Services
- 58% of non-participants aware of the Resource Center/Library
- 46% of non-participants aware of the Architectural and Building Consulting Services
- 40% of non-participants aware of the Tool Lending Services

Of the non-participants interviewed, 38% expressed they would “very likely” participate in future workshops, while 10% or less indicated they would “very likely” or “likely” participate in future Library, Consulting, or Tool Lending Services.

Many participant interviewees provided specific comments indicating their belief that the PEC’s Diagnostic Tool Lending service could benefit from improved outreach efforts. Below is a sample of some of the comments received.

- Provide “better publicity and outreach.”
- “Great job overall. Possibly expand outreach efforts, reach wider range of customers/energy consumers.”
- Provide “better website.”
- Provide “more marketing, higher visibility needed in the engineering community.”
- “Possibly more publicity.”
- “Great resource in general. Maybe develop a better introductory page on the website.”

### 6.3 Encourage Established Outreach Networks

Word-of-mouth notification was found to be the most likely way that participants were informed about opportunities at the PEC during 2002. Among those surveyed, 43% of participants found out about PEC program offerings through a colleague and 20% were informed directly by a PG&E representative. This word-of-mouth advertising network is a credit to the PEC and the esteem in which participants hold it.

When asked whether they would recommend the PEC’s services to others, only 3% of respondents indicated that they would not recommend them to those outside their company, and no respondents indicated they would not recommend them to those within their company. This type of colleague-to-colleague program promotion should be encouraged further if possible.

After notification through colleagues and PG&E representatives, the PEC calendar was indicated as the most common source for finding out about PEC program offerings (20% of respondents listed the calendar). Increasing efforts to produce and distribute these materials should prove rewarding for the PEC.

It should be noted that 18% of non-participants who expressed awareness of the program indicated their information was obtained through a business colleague.

### 6.4 Continue to Expand Alternate Off-site Services to Reach Potential Participants Distanced from San Francisco

The following are specific comments from Workshop/Educational Services users:

- “Provide more workshops in San Jose & more half-day workshops”
- “Parking is tough. Getting there from Sacramento is tough.”
- “Distance is too far.”
- “I’m in the peninsula and it is difficult for me to get to the PEC”

The following are specific comments from the Diagnostic Tool Lending Service users:

- “I would like to see services expanded outside of SF, and California, if possible.”
- “Try to move presentations further afield than just SF.”
- “Expand service outlets to reach a wider range of customers. I’m in Bakersfield – it is very time-consuming to travel back and forth to SF.”

The following is a specific comment from an Energy Resource Center/Library Service user:

- “Too regionally limited - should expand to reach outlying areas.”

The preceding comments indicate participants’ desire for the PEC program to expand all of its services into a wider range of geographical areas. Currently, the PEC is attempting to fulfill this desire. The feedback indicated here further justifies this effort.

Of the 50 people interviewed who did not participate in the PEC Program in 2002, 8% indicated that their reason for non-participation was the inconvenience of service locations. This further indicates that the PEC’s expansion of geographical locations is justified.

An added benefit of making more services available in the Central Valley region of the state may be to attract more participants from the agricultural sector. For the PEC program overall, respondents indicating the primary focus of their business as the agricultural industry made up only 2% of the survey population.

The PIP indicates that a program goal is to provide 25% of total workshops at hard-to-reach locations in Northern California and the Central Valley. Participant records provided by the PEC indicate 19 workshops provided in 2002 were located in San Jose, Stockton, or Oakland. According to these records, 105 distinct workshops were provided during 2002. This indicates that 18% of workshops were provided in hard-to-reach geographical areas, confirming that the PEC is nearing its goal. The specific respondent comments indicated above show that this is a legitimate direction to move the program and that continuing this effort will serve the existing users well.

#### 6.5 Schedule More Workshops During Alternate Times

The following are specific requests from Workshop/Educational Services users:

- “More classes during year & more times available to take the classes.”
- “More night-course availability”
- “Whole day programs for those who are coming from the South Bay”
- “Evening classes would be more accessible”
- “Start in afternoon & extend to evening so participants can work in a.m.”
- “Expand offices/hours to make programs more accessible to people outside the SF area.”

These comments indicate participants’ desire to see more classes provided at alternative time schedules. While it is recognized that providing more scheduling opportunities to users would represent a significant expenditure of resources, the PEC should investigate the cost-benefit relationship of these types of options.

Of the 50 people interviewed who did not participate in the PEC Program in 2002, 10% indicated that their reason for non-participation was the inconvenience of scheduling. This corroborates the recommendation to expand the workshop scheduling.

## 6.6 Improve Outreach Efforts to Attract New Users

Both participants and non-participants were asked how likely they were to make use of the PEC's services in the future. Those that participated had distinctly different responses to this question than non-participants.

The majority of participants indicated that they were either "Very Likely" or "Likely" to make use of the PEC's services in the future. This was true of the participants associated with all four of the PEC's components.

Of the non-participants interviewed, 38% indicated they would very likely make use of the Workshops/Educational Services in the future. The majority indicated that they would not likely make use of the Diagnostic Tool Lending Service, the Energy Resource Center/Library Service, or the Architectural and Building Consultation Service. It should be noted that awareness of these services is stratified along the same lines as willingness to participate, with 80% of non-participants being aware of the Workshops, while only approximately half of non-participants were aware of the Library, Consulting, and Tool Lending Services.

Based on these findings, the PEC may wish to increase their efforts to attract new users to the program. Also note that because non-participants indicated that they were most likely to take part in the workshops in the future, this may be the best venue for introducing new users to the other programs offered.

## 6.7 Consider Additional Tracking of Resource Center Users

Informal tracking data in the form of a tally sheet shows impressive utilization of the Resource Center, with almost 1,800 contacts made during the 2002 program year. Specific information about the users is not collected unless the consultation or request requires at least 15 minutes of staff time, which was the case for 51 contacts in 2002. The PEC may want to consider a more detailed tracking of the more casual contacts to help demonstrate and evaluate the value of the services provided.

## 6.8 Standardize Program Participant Tracking Data Collection and Electronically Compile Tracking Data

During the independent telephone survey Newcomb Anderson Associates conducted under the current M&E study, interviewees were asked a set of general questions (questions 1 through 9 on the forms included in the appendices), which were asked of all, regardless of the particular program component in which they participated. In addition to these general questions, the interviewees were then asked additional questions that pertained specifically to the program component they utilized in 2002.

By asking the same set of nine questions of all participants during the independent telephone survey regardless of program component, Newcomb Anderson Associates was able to analyze the demographic makeup of the entire interview sample, as well as the portions of the interview sample associated with the separate program components.

Participant survey data collected by the PEC followed a different approach and gathered different sets of information about participants during 2002, depending on which program component they used. Table 6.1 below shows which pieces of information were collected by the PEC for participants in each of the four program components. It can be observed that the only pieces of information common to all four sets are participant name, participant company name, and participant contact information (with the exception of the library, where company and contact information were not collected).

Because common demographic data have not been collected for all program participants in all program components, it is impossible to analyze the demographics of the program as a whole, or to accurately compare demographic differences between the program components. Although Newcomb Anderson Associates was able to perform this manner of analysis for the random sample of participants included in the independent telephone interview, comparisons could not be made between the sample demographics and the total program demographics, because this data did not exist in the PEC's records for all program participants.

Comparisons between the results of Newcomb Anderson Associates's independent telephone survey and the PEC's pre-existing data were further complicated because the Class/Workshop Pre-course Surveys were provided in hard-copy format only; electronically compiled information from these surveys were not available.

To aid in future analysis of the program outreach and participant demographics, it is recommended that the PEC consider collecting the following tracking data of all participants, regardless of the service utilized:

- Participant name and company name
- Participant contact information (phone number and email)
- Occupation
- Primary focus of business
- Size of company
- Use of incentive programs (SPC, Express Efficiency, Savings by Design, etc.)
- How participant was made aware of PEC services
- How often PEC services are utilized
- Whether participant will recommend PEC services to others

Consideration should be given to compiling this information electronically in order to facilitate subsequent analysis. This process could be aided by either making data collection forms web-based, or by using some type of easily scannable document, such as the “bubble” forms commonly used in standardized testing situations.

**Table 6.1: Participant Tracking Data Collected by the PEC During 2002 Prior to the Current M&E Study**

<b>Program Component</b>			
<b>Classes/Workshops</b>	<b>Tool Lending Service</b>	<b>Energy Resource Library</b>	<b>Architectural and Building Consulting Services</b>
Participant Records: Event Date Event Name Participant Name Participant Company Participant Phone Number Participant Email  <b>Pre-course Survey:</b> (available in hard-copy format only) Participant Name Participant Email Participant Company Participant Job Title Participant Primary Job Functions Category of Current Relevant Project Description of Current Relevant Project Planned Use of Information  <b>Post-class Evaluation:</b> (no demographic data included)	Participant Records: Loan ID Loan Category Participant Name Participant Title Participant Company Participant Address Participant Phone Number Participant Fax Number Participant Email Loan Borrow Date Loan Return Date Project ID and Name Loan Intended Use Notes Tool Name Tool Manufacturer Name Pick-up or Mail-out Projected Demand Reduction Projected Annual Electric Energy Savings Projected Annual Gas Savings Overall Participant Satisfaction with Service  <b>Internet-based Survey:</b> Tool Loan ID Project Name Survey Response Date Projected Demand Reduction Projected Annual Electric Energy Savings Projected Annual Gas Savings Overall Satisfaction with Service Related Government or Utility Sponsored Energy Efficiency Program Project Category	Participant Records: (only collected from those who require more than 15 minutes assistance) Assistance Date Duration of Assistance Provided Participant Name Assistant Notes Customer Type Category of Assistance Provided	Participant Records: Consultation ID Consultation Date Project ID and Name Consultant Name Participant PID Participant Name Participant Company Participant Phone Number Participant Email Resource Used (Heliodon, Glazing, Lighting Classroom, Daylighting Model, or Library) New Construction or Retrofit





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## APPENDICES



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**Appendix A**  
**Construction of the Interview Sample**

**Measurement and Evaluation Study of Local Crosscutting Pacific Energy Center Program  
 2002 Pacific Energy Center Participant Summary**

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Total Unique Program Participants 3,145

Sample Size as a Percentage of Total 4%

	Total Participants	Total Weight	Proposed Interviews	Sample Weight	Sample/ Total
Total Reference Center Participants	51	2%	10	8%	20%
Total Consultation Participants	61	2%	9	7%	15%
Total Tool Loan Participants	292	9%	56	42%	19%
Total Class Participants	2,881	88%	57	43%	2%
<b>TOTALS</b>	<b>3,285</b>	<b>100%</b>	<b>132</b>	<b>100%</b>	<b>4%</b>

Note:

Number of unique program participants is lower than the sum of specific programs because of persons participating in multiple programs.



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**Appendix B**  
**Independent M&E Survey Response Matrices**

**Evaluation Study of Local Crosscutting Pacific Energy Center Program  
 Inter Participant Interview Results**

	Participated in				Question 1				Question 2										Question 3						Question 4						
	clas	cons	tool	libr	clas	cons	tool	libr	Building Operator	Facility Mgr	Eng	Mfr/Vendor	EE Prg Implementer	Dev/Ownr	Arch	Light Des	Energy Cons	Other	Elaborate	Residential	Commercial	Industrial	Agricultural	Institutional	Other	Elaborate	<25	26-50	51-100	101-200	
					95%	64%	71%	84%	4%	2%	26%	4%	13%	0%	35%	4%	6%	7%		12%	44%	10%	3%	17%	14%		53%	9%	7%	11%	
1	1				1	1		1								1			1								1				
2	1				1	1	1	1		1											1										
3	1				1	1	1	1							1				1								1				
4	1				1	1	1	1							1					0.5	0.5						1				
5	1				1		1	1			1										0.75		0.3				1				
6	1				1	1	1	1							1					1							1				
7	1				1	1	1	1			1							1	Government Landscape architect/planner						0.5	0.5	Civic	1			1
8	1				1	1		1							1									1			1				
9	1				1	1	1	1																1			1				
10	1				1		1	1			1												1								1
11	1				1	1	1	1							1						1						1				
12	1				1	1	1	1							1						0.3		0.7				1				
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14	1				1		1		1														1								
15	1				1	1	1	1					1							1	1						1				
16	1				1		1	1							1					1							1				
17	1				1		1	1							1								1								1
18	1				1	1	1	1			1										1										1
19	1				1	1	1	1			1												1				1				
20	1				1	1	1	1								1					0.3	0.1		0.6			1				
21	1				1	1	1	1					1								1	1	1								
22	1														1												1				

	Question 5				Question 6			Question 7					Question 8					Question 9					Quest											
	201-400	401-800	801-1600	> 1600	Express Efficiency	SFC	Savings by Design	Other	Elaborate	Yes	No	Don't know	Elaborate	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	1 / week	2-3 / month		1 / month	2-3 / year	1 / year	inside very likely	inside likely	inside not likely	outside very likely	outside likely	outside not likely	One	
	11%	4%	0%	7%	9%	9%	11%	7%		58%	18%	24%		36%	7%	31%	11%	0%	11%	4%	4%	11%	15%	53%	18%	64%	26%	0%	58%	31%	7%	24%		
1							1		CEC renewable buydown program	1									1					1			1					1		
2				1						1														1		1			1					
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5												1				1								1					1				1	
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17												1																						1
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19										1						1								1		1								
20									Renewable Energy Buydown Program	1									1					1		1				1				
21				1								1												1		1				1				
22											1			1										1		1		1			1			1

	Question 10				Question 10a				Question 10b		Question 10c		Question 10d		Question 11		Question 12		Question 12a				Question 12b													
	Two	Three	Four	Five or more	One	Two	Three	Four	Five or more	Yes	No	Yes	Somewhat	No	Yes	No	Not involved	Yes	No	I don't know	HVAC	Lighting	Building Measurement	Arch design	Other	kWh		kW	therms	gallons	other					
	24%	20%	16%	16%	6%	15%	7%	4%	44%	51%	47%	38%	11%	2%	80%	13%	7%	87%	7%	4%	53%	27%	11%	33%	26%	7%	18%	16%								
1											1					1					1			1									8% reduction			
2			1					1		1					1			1									3000									
3								1	1			1					1			1																
4				1					1	1			1								1	1	1	1	1								Beat Title 24 by 30-40%			
5								1	1				1								1	1														
6				1					1	1			1								1	1	1	1									sometimes very little, other times 100%			
7		1							1	1																										
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	Question 12c				Question 13										Question 14					Question 15					Question 16					Question 17									
	Eng calcs	Metering	Energy bills	Other	Residential New	Commercial New	Industrial New	Agricultural New	Institutional New	Residential Retro	Commercial Retro	Industrial Retro	Agricultural Retro	Institutional Retro	Other	Don't Know	Poor	Fair	Good	Very Good	Excellent	Very Unlikely	Unlikely	Indifferent	Likely	Very Likely	0%	25%	50%	75%	100%	Poor	Fair	Good	Very Good	Excellent			
	13%	2%	2%		15%	31%	7%	2%	9%	13%	26%	9%	4%	15%	0%	11%	0%	2%	22%	64%	13%	0%	0%	4%	46%	51%	0%	44%	29%	20%	4%	2%	7%	38%	38%	15%			
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5						1													1						1			1									1		
6	1				1					1											1					1			1				1					1	
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15											1									1					1							1						1	
16																				1						1												1	
17																				1						1												1	
18						1	1					1								1						1						1							1
19						1								1						1						1						1							1
20																1				1						1						1						1	
21						1							1							1						1												1	
22														1						1					1													1	



Question 18	
Suggested improvements	Comments
1 More residential direction. Most classes are bout large facility proceses. Series on residential buildings - should be practical, not theoretical in nature.	Very helpful
2 Should add basic electrical concepts class	
3 Slightly more in-depth preview would help him decide which classes to attend	
4 More courses on computer simulation, daylighting and energy services.	Very helpful
5 Classes are comprehensive and very fast. However, if you get lost in the class, it is very difficult to get all you can out of the class.	
6	
7 Start in afternoon & extend to evening so participants can work in am.	
8 They are doing a great job	
9 Add some weblinks to the website	
10	
11	
12	
13	
14 He is in the peninsula and it is difficult for him to get to the PEC	
15	
16	She enjoyed the courses but did not get a chance to incorporate energy saving measures which she learned from the course because of her work flow (non energy related projects).
17	
18	
19	
20	Classes were informative but participant was not sure if they "made" the project successful
21 More hands-on classes instead of lectures	
22	

**Evaluation Study of Local Crosscutting Pacific Energy Center Program  
 Inter Participant Interview Results**

	Participated in				Question 1				Question 2										Question 3					Question 4								
	clas	cons	tool	libr	clas	cons	tool	libr	Building Operator	Facility Mgr	Eng	Mfr/Vendor	EE Prg Implementer	Dev/Ownr	Arch	Light Des	Energy Cons	Other	Elaborate	Residential	Commercial	Industrial	Agricultural	Institutional	Other	Elaborate	<25	26-50	51-100	101-200		
					95%	64%	71%	84%	4%	2%	26%	4%	13%	0%	35%	4%	6%	7%		12%	44%	10%	3%	17%	14%		53%	9%	7%	11%		
23	1				1	1	1	1				1													1 Govt				1			
24	1				1	1	1	1							1						1							1				
25	1				1	1	1	1			1								1													
26	1				1		1					1															1					
27	1				1	1	1	1							1					0.2	0.2			0.2				1				
28	1				1	1					1													1 Governme			1					
29	1				1	1	1								1				1								1					
30	1				1	1	1	1									1		1								1					
31	1				1			1							1					1							1					
32	1				1	1		1				1									1									1		
33	1				1	1	1	1			1										0.5		0.5									
34	1				1		1	1				1															1					
35	1				1	1	1	1				1							1	1	1	1	1									
36	1				1	1	1	1				1									1						1					
37	1				1		1	1			1								0.6	0.4							1					
38	1				1			1			1										1								1			
39	1						1	1				1							1	1	1											
40	1				1										1						0.5			0.5						1		
41	1				1	1		1	1																1 Laboratory							
42	1				1	1		1							1				0.5	0.5							1					

	Question 5							Question 6			Question 7						Question 8					Question 9					Quest						
	201-400	401-800	801-1600	> 1600	Express Efficiency	SFC	Savings by Design	Other	Elaborate	Yes	No	Don't know	Elaborate	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	1 / week	2-3 / month	1 / month	2-3 / year	1 / year	inside very likely		inside likely	inside not likely	outside very likely	outside likely	outside not likely	One
	11%	4%	0%	7%	9%	9%	11%	7%	58%	18%	24%		36%	7%	31%	11%	0%	11%	4%	4%	11%	15%	53%	18%	64%	26%	0%	58%	31%	7%	24%		
23							1	Californial Energy Commission			1								1					1									
24									1			Specifications for recycled materials			1	1							1							1		1	
25		1							1			Efficient motors are installed			1	1								1		1						1	
26								1 Smart Lights			1	Incorporate solar into designs	1										1			1				1			
27											1	Project management	1										1			1				1			
28							1				1	General		1													1			1			
29											1	Product selection	1												1		1			1			
30																							1		1				1				
31											1																		1				
32											1	In general - energy and technology center		1												1			1				
33	1										1				1										1				1				
34					1						1	Higher-rated T8 lamps - using them in retrofits																	1				
35	1										1	Helps with sales		1																1			
36											1				1															1			
37											1	we took some procedures for energy auditing																					
38											1	Updated knowledge of lighting resources for specifications in projects		1																1			
39				1	1									1								1								1			
40											1			1											1		1				1	1	
41	1					1	1				1	Cogeneration							1										1				
42							1				1	Solar class				1													1			1	

	Question 10				Question 10a				Question 10b				Question 10c				Question 10d				Question 11				Question 12				Question 12a				Question 12b			
	Two	Three	Four	Five or more	One	Two	Three	Four	Five or more	Yes	No	Yes	Somewhat	No	Yes	Somewhat	No	Yes	No	Not involved	Yes	No	I don't know	HVAC	Lighting	Building Measurement	Arch design	Other	kWh	kW	therms	gallons	other			
	24%	20%	16%	16%	6%	15%	7%	4%	44%	51%	47%	38%	11%	2%	80%	13%	7%	87%	7%	4%	53%	27%	11%	33%	26%	7%	18%	16%								
23		1						1	1					1	1			1																		
24											1							1																		
25	1							1	1			1			1			1			1						Motors									
26			1					1			1				1			1			1			1												
27				1			1		1			1			1			1			1					1										
28		1			1						1					1			1																	
29	1					1				1						1	1																			
30	1								1		1				1			1			1			1												
31	1							1		1							1	1					1													
32	1							1	1			1			1			1					1	1										a great deal		
33	1							1	1			1			1			1					1	1	1											
34	1							1	1			1			1			1						1			Lighting Controls									
35			1						1			1			1							1														
36	1									1					1			1			1			1												
37	1					1				1		1			1			1					1													
38			1		1				1			1			1			1					1			1										
39			1					1	1			1			1								1													
40										1						1		1																		
41		1						1		1					1			1					1				1	LEED	0.2			0.2				
42															1			1								1										

	Question 12c				Question 13								Question 14					Question 15					Question 16					Question 17														
	Eng calcs	Metering	Energy bills	Other	Residential New	Commercial New	Industrial New	Agricultural New	Institutional New	Residential Retro	Commercial Retro	Industrial Retro	Agricultural Retro	Institutional Retro	Other	Don't Know	Poor	Fair	Good	Very Good	Excellent	Very Unlikely	Unlikely	Indifferent	Likely	Very Likely	0%	25%	50%	75%	100%	Poor	Fair	Good	Very Good	Excellent						
	13%	2%	2%		15%	31%	7%	2%	9%	13%	26%	9%	4%	15%	0%	11%	0%	2%	22%	64%	13%	0%	0%	4%	46%	51%	0%	44%	29%	20%	4%	2%	7%	38%	38%	15%						
23										1			1						1						1		1								1							
24																				1				1			1									1						
25						1														1					1		1										1					
26					1	1	1			1	1	1								1						1		1									1					
27								1						1						1					1		1											1				
28																		1							1					1							1					
29																1			1						1						1							1				
30					1					1										1					1			1									1					
31					1					1											1					1					1							1				
32						1	1				1	1								1						1					1								1			
33																				1						1		1										1				
34	1									1	1			1						1						1				1							1					
35																				1					1					1								1				
36											1								1						1			1											1			
37											1									1						1					1									1		
38						1														1						1				1								1				
39																				1						1												1				
40						1												1							1			1										1				
41	1					1					1									1						1													1			
42					1					1										1						1		1												1		

Question 18	
Suggested improvements	Comments
23	
24 Distance is too far for her to get to.	Only went to one class. Thought the class was useful but distance is her main problem for attending more classes.
25	
26 Cover less material in each workshop. Each workshop tries to cover too much info.	
27	
28 More presentations from the reps (product reps?)	
29 Evening classes would be more accessible	
30	
31 Whole day programs fro those who are coming from the South Bay	
32 Parking is tough. Getting there from Sacramento is tough.	
33	He evaluates other people's projects so it is difficult for him to find specific savings
34 Draw in new blood/different speakers. Participant has gone for over 10 years.	
35 Pretty satisfied. The more lighting classes, the better, since that is his only focus.	
36	
37 Keep up the good work	
38	
39 More night-course availability More hands-on training instead of lectures	
40	
41 Make sure to supply snacks and lunch. Overall, they really like services & are a wonderful tool to educate staff.	
42	

**Evaluation Study of Local Crosscutting Pacific Energy Center Program  
 Participant Interview Results**

	Participated in				Question 1				Question 2										Question 3					Question 4						
	class	cons	tool	libr	class	cons	tool	libr	Building Operator	Facility Mgr	Eng	Mfr/Vendor	EE Prg Implementer	Dev/Ownr	Arch	Light Des	Energy Cons	Other	Elaborate	Residential	Commercial	Industrial	Agricultural	Institutional	Other	Elaborate	<25	26-50	51-100	101-200
					95%	64%	71%	84%	4%	2%	26%	4%	13%	0%	35%	4%	6%	7%		12%	44%	10%	3%	17%	14%		53%	9%	7%	11%
43	1				1						1										0.5	0.5					1			
44	1				1	1		1							1						1				1	Interior de	1			
45	1				1	1	1	1									1	Facility Director			1									
46	1				1														1						1	Local	1			
47	1				1	1	1	1							1					1							1			
48	1				1			1			1													1	Coast Guard			1		
49	1				1	1	1	1							1						1									1
50	1				1		1	1									1	Government employee			1						1			
51	1				1			1							1						1						1			
52	1				1	1	1	1			1											1								
53	1				1	1	1	1			1									0.5			0.5							
54	1				1	1	1	1							1					1							1			
55	1						1	1								1									1	Enter	1			

	Question 5							Question 6			Question 7						Question 8					Question 9					Quest					
	201-400	401-800	801-1600	> 1600	Express Efficiency	SFC	Savings by Design	Other	Elaborate	Yes	No	Don't know	Elaborate	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	1 / week	2-3 / month	1 / month	2-3 / year	1 / year	inside very likely		inside likely	inside not likely	outside very likely	outside likely	outside not likely
	11%	4%	0%	7%	9%	9%	11%	7%		58%	18%	24%		36%	7%	31%	11%	0%	11%	4%	4%	11%	15%	53%	18%	64%	26%	0%	58%	31%	7%	24%
43											1									1				1								1
44										1					1						mailing			1	1							1
45	1									1								1			1					1			1			
46										1				1										1		1				1		1
47											1			1										1						1		1
48										1											flyer				1		1		1			
49											1			1								1				1			1			
50											1			1									1			1			1			
51												1				1								1			1				1	
52		1								1						1						1					1			1		
53	1										1			1								1				1			1			
54										1				1										1		1			1			
55										1						1	1						1						1			



	Question 10a				Question 10b		Question 10c		Question 10d		Question 11		Question 12			Question 12a				Question 12b																
	Two	Three	Four	Five or more	One	Two	Three	Four	Five or more	Yes	No	Yes	Somewhat	No	Yes	No	Not involved	Yes	No	I don't know	HVAC	Lighting	Building Measurement	Arch design	Other	kWh	kW	therms	gallons	other						
	24%	20%	16%	16%	6%	15%	7%	4%	44%	51%	47%	38%	11%	2%	80%	13%	7%	87%	7%	4%	53%	27%	11%	33%	26%	7%	18%	16%								
43						1				1					1						1															
44				1		1					1							1																		
45				1			1				1							1																20-30%		
46										1								1																		
47							1				1								1																	
48	1										1										1															
49		1								1														1												
50				1							1																									
51	1					1										1																				
52		1						1	1			1									1															
53		1								1																										
54		1							1	1																										
55				1					1	1																										

	Question 12c				Question 13								Question 14					Question 15					Question 16					Question 17											
	Eng calcs	Metering	Energy bills	Other	Residential New	Commercial New	Industrial New	Agricultural New	Institutional New	Residential Retro	Commercial Retro	Industrial Retro	Agricultural Retro	Institutional Retro	Other	Don't Know	Poor	Fair	Good	Very Good	Excellent	Very Unlikely	Unlikely	Indifferent	Likely	Very Likely	0%	25%	50%	75%	100%	Poor	Fair	Good	Very Good	Excellent			
	13%	2%	2%		15%	31%	7%	2%	9%	13%	26%	9%	4%	15%	0%	11%	0%	2%	22%	64%	13%	0%	0%	4%	46%	51%	0%	44%	29%	20%	4%	2%	7%	38%	38%	15%			
43						1					1								1						1											1			
44						1					1									1					1												1		
45	1	1				1													1					1						1							1		
46																1				1					1													1	
47																		1						1						1								1	
48														1							1				1			1								1			
49						1													1						1						1			1					
50																			1						1												1		
51																			1					1													1		
52					1	1	1	1	1	1	1	1	1	1					1					1			1									1			
53																		1						1			1									1			
54																1			1						1					1								1	
55																1			1						1												1		

Question 18	
Suggested improvements	Comments
43 Go into more detail to provide in-depth knowledge	
44 None/ lecture series - bring in good people	
45	
46 Input on suggested topics from people who have attended classes. She is not sure if this exists or not	
47 More classes during year & more times available to take the classes.	
48	
49	
50 More detail about content/ go into more detail on topics / give agendas ahead of time	She does not work on projects so she couldn't answer any of the project specific questions
51 Great job.	
52	
53 More technical detail. Good overview.	
54 More workshops in San Jose & more half-day workshops	
55 Provide outdoor lighting lab, exterior lighting classes	He says it is very difficult to quantify the results of the classes, especially in his industry. He primarily uses the classes to keep abreast of new technologies which may be incorporated into projects.

**Evaluation Study of Local Crosscutting Pacific Energy Center Program  
 Inter Participant Interview Results**

	Participated in Question 1				Question 2											Question 3											
	clas	cons	tool	libr	98%	65%	98%	83%	12%	Building Operator	Facility Mgr	Eng	Mfr/Vendor	EE Prg Implementer	Dev/Ownr	Arch	Light Des	Energy Cons	Other	Elaborate	Residential	Commercial	Industrial	Agricultural	Institutional	Other	Elaborate
																					8%	45%	12%	1%	19%	9%	
1			1		1	1	1	1										1			0.20	0.70	0.10				
2			1				1									1					1.00						
3			1		1	1	1	1											1	Professor						1	Educational
4			1		1		1	1								1					0.10	0.50	0.40				
5			1		1	1	1	1											1	Crime prevention specialist						1	Police Department
6			1		1	1	1	1			1											1.00					
7			1		1	1	1	1											1	PG&E Technician					1.00		
8			1		1	1	1	1			1											0.33	0.33		0.33		
9			1		1		1					1										0.50	0.50				
10			1		1	1	1	1			1										0.33	0.33		0.33	1	Controls	
11			1		1		1				1											1.00					
12			1		1	1	1	1								1									1.00		
13			1		1	1	1	1							1							1.00					
14			1		1	1	1	1										1				0.50	0.25		0.25		
15			1		1		1	1	1													1.00					
16			1		1	1	1	1					1									0.33	0.33	0.33			
17			1		1		1				1											1.00					
18			1		1	1	1	1											1	Research Engineer		1.00				1	Testing commercial kitchen appliances
19			1		1	1	1	1			1										0.33	0.33		0.33			
20			1		1	1	1	1											1	Account rep - major commercial/industrial clients			0.50	0.50			
21			1				1	1											1	Career consultant (headhunter)						1	

	Question 4							Question 5					Question 6			Question 7					Question 8												
	<25	26-50	51-100	101-200	201-400	401-800	801-1600	>1600	Express Efficiency	SPC	Savings by Design	Other	Elaborate	Yes	No	Don't know	Elaborate	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	1 / week	2-3 / month	1 / month	2-3 / year	1 / year				
	44%	9%	5%	11%	5%	5%	0%	21%	16%	21%	19%	5%		42%	46%	12%		40%	4%	14%	4%	0%	30%		9%	2%	4%	14%	53%	26%			
1		1													1					1													
2	1														1																	1	
3								1						1			Teaching, research	1											1				
4	1														1					1												1	
5			1																													1	
6								1	1			1	kW reduction			1							1									1	
7								1							1								1									1	
8	1									1					1																	1	
9	1										1	Product Rebat		1			Designing products															1	
10	1										1						design changes															1	
11								1			1																					1	
12	1																															1	
13						1									1		Information tracking					1										1	
14	1								1	1							(utility billing)															1	
15	1														1		Measuring kW for																1
16								1							1								1							1			
17	1																																1
18	1								1								Help end-users																1
19		1													1		Used dataloggers to																1
20								1	1	1	1						measured moisture,																1
21	1																Upgraded personal																1

	Question 9	Question 10	Question 11	Question 12	Question 12a	Question 12b	Question 12c																															
	inside very likely 84%	inside likely 14%	inside not likely 0%	outside very likely 86%	outside likely 14%	outside not likely 0%	One 42%	Two 19%	Three 12%	Four 4%	Five or more 23%	Yes 95%	No 5%	Not involved 0%	Elaborate 77%	Yes 16%	No 2%	Don't know 37%	HVAC 23%	Ltg 19%	Bldg msmt 14%	Arch 12%	Other 12%	Specify	kWh	kW	therms	gallons	Other 11%	Eng calcs 5%	Metering 5%	Energy bills 5%	Other					
1		1			1						1	1																										
2	1			1			1					1			1								1															
3	1			1							1	1																										
4	1			1				1				1											1															
5		1			1		1					1					1																					
6		1		1			1					1			1				1																			
7	1			1			1					1				1					1																	
8	1			1							1	1			1				1																			
9	1			1				1				1																										
10	1			1					1			1			1				1																			
11		1			1		1					1				1				1																		
12	1			1				1				1			1					1			1															
13	1			1				1				1			1				1	1			1															
14	1			1							1		1		1				1	1			1										1	1	1			
15		1			1		1					1				1					1															\$8,000 (but anticipates savings will increase.)		1
16	1			1							1	1			1				1	1				1												Process conversions		
17	1			1					1			1									1																	
18	1			1							1	1			1									1												Domestic/consumer energy reduction/efficiency upgrades		
19	1			1							1	1			1				1			1																
20	1			1							1	1			1									1												Cogeneration system installation		
21	1			1			1						1		Tool was b		1																					

Question 13

Question 14

Question 15

Question 16

	Residential New 9%	Commercial New 12%	Industrial New 5%	Agricultural New 0%	Institutional New 11%	Residential Retro 7%	Commercial Retro 33%	Industrial Retro 19%	Agricultural Retro 2%	Institutional Retro 19%	Other 11%	Elaborate 11%	Don't Know 2%	Poor 2%	Fair 19%	Good 39%	Very Good 39%	Excellent 2%	Very unlikely 0%	Unlikely 7%	Indifferent 16%	Likely 75%	Very likely 0%	Poor 4%	Fair 28%	Good 37%	Very good 25%	Excellent 1%	Suggested improvements
1																	1					1					1	Would like to see services expanded outside of SF, and California, if possible	
2	1					1											1								1			Expand offices/hours to make programs more accessible to people outside the SF area.	
3																		1									1	Better publicity and outreach.	
4										1												1					1		
5													1			1						1					1		
6					1											1							1				1		
7													1									1					1	None.	
8						1	1						1									1					1		
9										1	Product design					1						1							
10		1				1										1							1				1		
11		1				1										1						1			1			None.	
12					1												1					1					1	None.	
13		1	1			1	1										1					1					1	Try to move presentations further afield than just SF.	
14						1				1							1					1					1		
15							1										1							1				Simplify rebates program	
16						1	1	1									1						1				1	None.	
17		1				1											1										1	I've always received outstanding support from the PEC.	
18											Domestic 1 appliances						1						1				1	Great job overall. Possibly expand outreach effort, reach wider range of customers/energy consumers.	
19	1																										1	None. Doing great job!	
20							1																1				1	None. Keep up the good work.	
21											1	Private home																1	Device borrowed was not specifically designed for domestic application, required 110V outlet. Otherwise, service was excellent.

**Evaluation Study of Local Crosscutting Pacific Energy Center Program  
 Inter Participant Interview Results**

	Participated in Question 1				Question 2										Question 3											
	clas	cons	tool	libr	clas	cons	tool	libr	Building Operator	Facility Mgr	Eng	Mfr/Vendor	EE Prtg Implementer	Dev/Ownr	Arch	Light Des	Energy Cons	Other	Elaborate	Residential	Commercial	Industrial	Agricultural	Institutional	Other	Elaborate
					98%	65%	98%	83%	12%	0%	28%	5%	5%	2%	11%	2%	12%	21%		8%	45%	12%	1%	19%	9%	
22			1		1		1				1								Public utility							
23			1		1		1	1												1.00						
24			1		1	1	1	1				1								1.00						
25			1		1	1	1	1											HVAC	0.25	0.75					
26			1		1	1	1	1											Contractor	1						
27			1		1		1												Construction manager		1.00					
28			1		1	1	1	1											Contractor		0.80	0.20				
29			1		1	1											1			1	0.25	0.25	0.25	0.25		
30			1		1	1	1	1	1												1.00					
31			1		1	1	1	1									1							1.00		
32			1		1		1	1											Building contractor	0.75	0.25					
33			1		1	1	1	1			1									0.50	0.50					
34			1		1		1	1							1								1.00			
35			1		1		1				1								Government							
36			1		1	1	1	1			1										0.33	0.33		0.33		
37			1		1		1										1				0.40	0.60				
38			1		1	1	1	1			1										1.00					
39			1		1	1	1	1					1												1.00	



	Question 4							Question 5					Question 6			Question 7						Question 8									
	<25	26-50	51-100	101-200	201-400	401-800	801-1600	>1600	Express Efficiency	SPC	Savings by Design	Other	Elaborate	Yes	No	Don't know	Elaborate	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	1 / week	2-3 / month	1 / month	2-3 / year	1 / year		
	44%	9%	5%	11%	5%	5%	0%	21%	16%	21%	19%	5%	42%	46%	12%		40%	4%	14%	4%	0%	30%	9%	2%	4%	14%	53%	26%			
22				1											1															1	Energy Center mailing list
23	1															1														1	AIA
24				1							1						1													1	
25	1															1				1											
26	1															1								1						1	
27				1					1	1					1			1												1	
28		1							1	1	1				1								1								
29							1								1								1							1	Learned of it while attending Sonoma State University
30							1							1															1	Office is across the street from the PEC	
31							1			1				1				1											1	High-efficiency motors, T-8 lighting are now considered standard equipment	
32	1														1			1												1	
33	1														1								1		1						
34				1											1			1												1	Used results to modify a piece of existing equipment and improve air mixing
35							1							1									1							1	
36				1						1					1								1							1	
37					1										1								1							1	
38						1									1			1												1	
39				1							1				1				1	1	1		1							1	

	Question 9				Question 10				Question 11		Question 12		Question 12a				Question 12b				Question 12c														
	inside very likely	inside likely	inside not likely	outside very likely	outside likely	outside not likely	One	Two	Three	Four	Five or more	Yes	No	Not involved	Elaborate	Yes	No	Don't know	HVAC	Ltg	Bldg msmt	Arch	Other	Specify	kWh	kW	therms	gallons	Other	Eng calcs	Metering	Energy bills	Other		
	84%	14%	0%	86%	14%	0%	42%	19%	12%	4%	23%	95%	5%	0%		77%	16%	2%	37%	23%	19%	14%	12%												
22	1			1			1					1				1					1	1													
23	1			1				1				1				1				1	1		1												Projects still in development
24	1			1						1		1				1							1												
25	1			1			1					1				1				1															
26	1			1			1					1				1				1															
27	1			1				1				1				1				1															
28		1			1			1				1				1				1															
29	1			1			1					1						1					1												Project was not implemented
30	1			1					1			1				1				1	1													Annual kW/day usage has dropped 25.6%	
31	1			1					1			1						1																	
32	1			1			1					1				1																			Industrial - compressed air use in mfg environment
33	1			1							1	1				1							1												1.5 million
34		1			1		1							1	Tool	1																			
35	1			1								1								1															43,800
36		1			1		1					1				1				1															
37	1			1					1			1				1				1	1														
38	1			1			1					1				1						1													
39	1			1						1	1					1				1			1												Compressed air

	Question 13											Question 14					Question 15					Question 16					Suggested improvements		
	Residential New 9%	Commercial New 12%	Industrial New 5%	Agricultural New 0%	Institutional New 11%	Residential Retro 7%	Commercial Retro 33%	Industrial Retro 19%	Agricultural Retro 2%	Institutional Retro 19%	Other 11%	Elaborate 11%	Don't Know 2%	Poor 2%	Fair 19%	Good 39%	Very Good 39%	Excellent 2%	Very unlikely 0%	Unlikely 7%	Indifferent 16%	Likely 75%	Very likely 0%	Poor 4%	Fair 28%	Good 37%		Very good 25%	Excellent
22							1										1					1						1	
23	1					1											1						1					1	
24										1	Company's manufacturing facility					1						1				1			Better website.
25	1						1									1						1					1		
26						1									1							1				1			
27						1				1					1							1				1			
28						1	1								1							1				1			None. Program is great as it is.
29										1						1				1				1					None - pretty good overall.
30						1										1						1						1	None.
31																1						1						1	Overall very positive about program. Suggested expanding number of tools readily available - had a waiting period of several days to get several tools.
32										1							1					1					1		None.
33										1						1						1					1		None. Very happy with service.
34						1										1				1						1			None.
35											1						1					1					1		None. May want to consider enabling tools to be reserved on-line and pick-up later.
36							1									1						1					1		None.
37										1							1					1					1		More marketing, higher visibility needed in the engineering community.
38							1										1					1					1		None. Service was very good, used CO2 loggers, was a very simple process.
39			1							1							1		1								1		More power measurement equipment (Elite pros) or Powersites. More ultrasonic flow meters (Panasonic).

**Evaluation Study of Local Crosscutting Pacific Energy Center Program  
 Inter Participant Interview Results**

	Participated in Question 1				Question 2											Question 3										
	clas	cons	tool	libr	98%	65%	98%	83%	12%	0%	28%	5%	5%	2%	11%	2%	12%	21%	Elaborate	Residential	Commercial	Industrial	Agricultural	Institutional	Other	Elaborate
40			1		1	1	1	1					1												1.00	
41			1		1	1	1	1								1					0.75	0.25				
42			1		1	1	1	1							1					1						
43			1		1	1	1	1									1				1.00					
44			1		1	1	1	1							1					1						
45			1		1		1				1										1.00					
46			1		1		1	1				1									1.00					
47			1		1	1	1	1			1										1.00					

	Question 4										Question 5					Question 6			Question 7						Question 8					
	<25	26-50	51-100	101-200	201-400	401-800	801-1600	>1600	Express Efficiency	SPC	Savings by Design	Other	Elaborate	Yes	No	Don't know	Elaborate	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	1 / week	2-3 / month	1 / month	2-3 / year	1 / year	
	44%	9%	5%	11%	5%	5%	0%	21%	16%	21%	19%	5%	42%	46%	12%	40%	4%	14%	4%	0%	30%	9%	2%	4%	14%	53%	26%			
40		1											1			Used ultrasonic water meter to calibrate well meters					1									1
41	1												1			Designing LED fixtures that are more efficient as a result of testing the product designs with tools borrowed from the PEC							1							1
42	1												1			Window, lighting, insulation choices have all been influenced	1													1
43	1												1			Performs better audits due to good equipment, more accurate measurements, etc.				1										1
44	1													1				1												1
45					1				1	1					1			1												1
46	1												1			More accurate measurements with tools has led to better, higher quality business proposals							1							1
47							1						1			Use of flow meters has led to more efficient lighting designs				1										1

	Question 9	Question 10	Question 11	Question 12	Question 12a	Question 12b	Question 12c																											
	inside very likely 84%	inside likely 14%	inside not likely 0%	outside very likely 86%	outside likely 14%	outside not likely 0%	One 42%	Two 19%	Three 12%	Four 4%	Five or more 23%	Yes 95%	No 5%	Not involved 0%	Elaborate 77%	Yes 16%	No 2%	Don't know 37%	HVAC 23%	Ltg 19%	Bldg msmt 14%	Arch 12%	Other 12%	Specify	kWh	kW	therms	gallons	Other 11%	Eng calcs 5%	Metering 5%	Energy bills 5%	Other	
40	1			1			1					1				1							1	Water conservation, confirmed accuracy of well-meters										
41	1			1							1	1				1				1														
42	1			1							1	1					1																	
43	1			1				1				1					1																	
44	1			1			1					1									1													
45	1			1				1				1							1															
46	1			1					1			1												Notes that he anticipates energy savings measures using the Tool Lending Service will be implemented this year, but none have been completed yet.										
47	1			1			1					1								1														

Question 13

Question 14

Question 15

Question 16

	Residential New 9%	Commercial New 12%	Industrial New 5%	Agricultural New 0%	Institutional New 11%	Residential Retro 7%	Commercial Retro 33%	Industrial Retro 19%	Agricultural Retro 2%	Institutional Retro 19%	Other 11%	Elaborate 11%	Don't Know 2%	Poor 2%	Fair 19%	Good 39%	Very Good 39%	Excellent 2%	Very unlikely 0%	Unlikely 7%	Indifferent 16%	Likely 75%	Very likely 0%	Poor 4%	Fair 28%	Good 37%	Very good 25%	Excellent	Suggested improvements
40											1						1												None - did exactly what we wanted.
41	1																	1											None. Incredibly helpful and useful service.
42												1					1									1			None - satisfied with service in general.
43											1																		Audits conducted, but not aware of subsequent measures that may have been implemented
44	1											1					1												None.
45							1								1												1		Keep better track of what gets checked in and out. Experienced difficulties establishing what tools she'd returned, etc.
46													1														1		None. Service has been excellent so far.
47	1																1									1		Nothing comes to mind - possibly more publicity.	

**Evaluation Study of Local Crosscutting Pacific Energy Center Program  
 Inter Participant Interview Results**

	Participated in Question 1				Question 2											Question 3												
	clas	cons	tool	libr	98%	65%	98%	83%	12%	0%	28%	5%	5%	2%	11%	2%	12%	21%	Elaborate	Residential	Commercial	Industrial	Agricultural	Institutional	Other	Elaborate		
48			1		1			1	1												1.00							
49			1		1	1	1	1			1										0.30	0.20		0.50				
50			1		1	1	1	1																				
51			1		1	1	1	1										1 Administrator						1.00				
52			1		1	1	1	1	1													1.00						
53			1		1		1	1	1													1.00						
54			1		1		1	1			1													0.50		0.50		
55			1		1	1	1	1	1													1.00						
56			1		1	1	1	1	1													1.00						
57			1		1	1	1	1	1																0.10	0.10	0.80	



	Question 4										Question 5					Question 6			Question 7						Question 8						
	<25	26-50	51-100	101-200	201-400	401-800	801-1600	>1600	Express Efficiency	SPC	Savings by Design	Other	Elaborate	Yes	No	Don't know	Elaborate	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	1 / week	2-3 / month	1 / month	2-3 / year	1 / year		
	44%	9%	5%	11%	5%	5%	0%	21%	16%	21%	19%	5%		42%	46%	12%		40%	4%	14%	4%	0%	30%	9%	2%	4%	14%	53%	26%		
48			1								1		State grant pro	1		Temperature (IR) camera to determine ceiling cooling levels used in explaining potential energy savings to customers. Tools also used to test products.	1														1
49		1													1								1							1	
50						1									1															1	
51							1	1	1						1								Doesn't remember						1		
52			1							1				1		Used light meters, dataloggers to implement measures to qualify for SPC program							1							1	
53	1													1				1					1							1	
54	1									1					1								Cannot recall						1		
55	1									1				1									Cannot recall						1		
56					1			1	1	1					1								1							1	
57	1									1	1				1	Has not designed a project since using the tools.	1						1							1	

	Question 9	Question 10	Question 11	Question 12	Question 12a	Question 12b	Question 12c																													
	inside very likely 84%	inside likely 14%	inside not likely 0%	outside very likely 86%	outside likely 14%	outside not likely 0%	One 42%	Two 19%	Three 12%	Four 4%	Five or more 23%	Yes 95%	No 5%	Not involved 0%	Elaborate 77%	Yes 16%	No 2%	Don't know 37%	HVAC 23%	Ltg 19%	Bldg msmt 14%	Arch 12%	Other	Specify	kWh	kW	therms	gallons	Other 11%	Eng cats 5%	Metering 5%	Energy bills 5%	Other			
48	1			1			1					1					1																			
49	1			1							1	1							1	1																
50	1			1			1					1					1																			
51	1			1			1		1			1					1			1																
52	1			1					1			1							1				1 VFDs		2 million+								1			
53	1			1			1					1									1															
54	1			1							1	1							1																	
55	1			1			1					1									1							\$250K in savings at waste-water plant								
56	1			1			1					1									1	1														
57				1			1					1													2,000,000	140	120,000					1	1			

	Question 13										Question 14					Question 15					Question 16					Suggested improvements					
	Residential New	Commercial New	Industrial New	Agricultural New	Institutional New	Residential Retro	Commercial Retro	Industrial Retro	Agricultural Retro	Institutional Retro	Other	Elaborate	Don't Know	Poor	Fair	Good	Very Good	Excellent	Very unlikely	Unlikely	Indifferent	Likely	Very likely	Poor	Fair		Good	Very good	Excellent		
	9%	12%	5%	0%	11%	7%	33%	19%	2%	19%	11%	11%		2%	2%	19%	39%	39%	2%	0%	7%	16%	75%	0%	4%	28%	37%	25%			
48													1					1					1						1	None. Wealth of tools available!	
49		1	1		1		1	1			1						1						1			1			1	None. Seem like they do a great job in general.	
50																														None. Borrowed meters to measure whether or not school district would save energy/money by installing economizers, qualifying for rebates/incentives from PG&E. PG&E told them they were "too big" for incentive programs - thus no measures were implemented.	
51										1							1						1			1			1	None.	
52							1										1						1					1	1	None.	
53							1										1				1							1	1	None. Very satisfied with service. Said he wasn't likely to use service again because he has tools of his own, but would not hesitate to use the lending service if the need arose.	
54							1	1								1							1							1	Not really - great resource in general. Maybe develop a better introductory page on the website.
55								1									1						1			1			1	None	
56																1							1			1			1	Expand service outlets to reach a wider range of customers. Interviewee in Bakersfield - very time-consuming to travel back and forth to SF.	
57					1													1					1					1	1	I think the program is excellent and the people are very helpful. Recommend continuing the program	

**uation Study of Local Crosscutting Pacific Energy Center Program  
 nter Participant Interview Results**

	Participated in				Question 1				Question 2				Question 3													
	clas	cons	tool	libr	clas	cons	tool	libr	Building Operator	Facility Mgr	Eng	Mfr/Vendor	EE Prg Implementer	Dev/Ownr	Arch	Light Des	Energy Cons	Other	Elaborate	Residential	Commercial	Industrial	Agricultural	Institutional	Other	Elaborate
					90%	60%	100%	100%	0%	0%	20%	0%	50%	0%	0%	0%	20%	10%		0%	51%	30%	0%	0%	30%	
1				1	1	1	1	1			1															
2				1	1		1	1									1				0.75	0.25				
3				1	1	1	1	1					1								0.5	0.5				
4				1			1	1									1				1					
5				1	1	1	1	1					1												1	Codes and standards
6				1	1	1	1	1					1							1					1	Technical application support
7				1	1	1	1	1			1										0.8	0.2				
8				1	1	1	1	1										1	Utility program manager						1	Utility
9				1	1		1	1					1								1	1				
10				1	1		1	1					1								1	1				

	Question 4								Question 5				Question 6				Question 7						Question 8					Questi	
	<25	26-50	51-100	101-200	201-400	401-800	801-1600	>1600	Express Efficiency	SPC	Savings by Design	Other	Yes	No	Don't know	Elaborate	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	1 / week	2-3 / month	1 / month	2-3 / year		1 / year
	10%	0%	0%	0%	0%	0%	10%	70%	10%	10%	0%	0%	30%	70%	0%		80%	0%	0%	0%	0%	20%		0%	10%	30%	60%	0%	90%
1							1						1									1					1		1
2	1							1	1			1			Update standard practices/evaluation procedures		1									1			1
3							1						1				1										1		1
4													1				1										1		
5							1						1									1					1		1
6							1						1				1										1		1
7						1						1			Reference information for site survey reports		1									1			1
8							1					1			Assistance in marketing program materials and increasing our resource database.		1									1			1
9							1						1				1								1				1
10							1						1				1										1		1

Question	Question 9					Question 10					Question 11			Question 12			Question 12a					Question 12b						
	inside likely	inside not likely	outside very likely	outside likely	outside not likely	HVAC	Ltg	Bldg Measurement	Arch Design	Other	Elaborate	Yes	No	Not involved	Yes	No	Don't know	HVAC	Ltg	Bldg measurement	Arch	Other	Elaborate	kWh	kW	therms	gallons	Other
	10%	0%	90%	10%	0%	60%	40%	20%	20%	40%		100%	0%	0%	70%	10%	10%	60%	20%	0%	0%	10%						
1			1			1						1			1			1										
2			1									1			1			1										
3			1				1					1			1				1									
4	1			1								1																
5			1			1	1	1	1	1	market data	1				1												
6			1			1						1			1			1										
7			1			1	1	1	1			1			1			1	1			1	Process equipment		100			
8			1								Architectural firm resource lists and publications	1					1											
9			1			1						1			1			1										
10			1			1	1					1			1			1										

	Question 12c				Question 13								Question 14				Question 15				Question 16										
	Eng calcs	Metering	Energy bills	Other	Residential New	Commercial New	Industrial New	Agricultural New	Institutional New	Residential Retro	Commercial Retro	Industrial Retro	Agricultural Retro	Institutional Retro	Other	Elaborate	Don't Know	Email	Website	Mailed	Other	Very unlikely	Unlikley	Indifferent	Likely	Very likely	Poor	Fair	Good	Very good	Excellent
	0%	0%	0%		0%	0%	0%	10%	0%	20%	40%	20%	0%	0%	0%	30%	90%	10%	10%		0%	0%	0%	20%	70%	0%	10%	30%	30%	20%	
1							1										1							1						1	
2										1							1								1				1		
3										1							1							1				1			
4																															
5																1	1								1				1		
6									1								1	1	1						1		1				
7									1	1	1						1								1						1
8																1	1								1						1
9										1	1						1								1					1	
10																1	1								1					1	

Question 17	
	Suggested improvements
1	None.
2	Continue E-source subscription; co-ordinate and cross-reference utility information.
3	None.
4	Ended interview abruptly, declined to answer several questions.
5	More user-friendly website.
6	None.
7	Too regionally limited - should expand to reach outlying areas.
8	None.
9	None - library personel are exceptionally flexible and responsive to user's needs and requests.
10	None.



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 Participant Interview Results**

	Participated in				Question 1				Question 2				Question 3											
	clas	cons	tool	libr	clas	cons	tool	libr	Building Operator	Facility Mgr	Eng	Mfr/Vendor	EE Prtg Implementer	Dev/Ownr	Arch	Light Des	Energy Cons	Other	Residential	Commercial	Industrial	Agricultural	Institutional	Other
1		1			89%	100%	89%	89%	0%	0%	11%	0%	0%	0%	89%	0%	0%	0%	21%	41%	0%	0%	37%	0%
2		1			1	1	1	1			1				1				0.5	0.5			0.34	
3		1			1	1	1	1							1								1	
4		1			1	1	1	1							1				1					
5		1			1	1	1	1							1				0.1	0.9				
6		1			1	1	1	1							1								1	
7		1			1	1	1	1							1								1	
8		1			1	1	1								1					1				
9		1			1	1	1	1							1					1				

	Question 4								Question 5				Question 6			Question 7						Question 8							
	<25	26-50	51-100	101-200	201-400	401-800	801-1600	>1600	Express Efficiency	SPC	Savings by Design	Other	Yes	No	Don't know	Elaborate	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	1 / week	2-3 / month	1/month	2-3/year	1/year	
	44%	22%	11%	22%	0%	0%	0%	0%	0%	0%	56%	0%	44%	56%	0%	67%	0%	11%	0%	0%	11%	11%	0%	0%	22%	33%	44%		
1	1												1			1												1	
2				1							1			1								1				1			
3		1									1		1									mail							1
4	1											1			Sunshading design				1									1	
5	1										1	1			More efficient use of sunlight in design, help reduce artificial lighting	1												1	
6			1								1	1			Used accurate daylighting on model to determine shading of adjacent buildings	1													1
7		1										1			Focus on beating Title 24	1										1			
8	1												1			1													1
9				1							1		1			1													1

	Question 9						Question 10					Question 11			Question 12			Question 12a					Question 12b					
	inside very likely	inside likely	inside not likely	outside very likely	outside likely	outside not likely	HVAC	Ltg	Bldg msmt	Arch design	Other	Elaborate	Yes	No	Not involved	Yes	No	I don't know	HVAC	Ltg	Bldg msmt	Arch design	Other	Elaborate	kWh	kW	therms	gallons
	100%	0%	0%	100%	0%	0%	22%	44%	11%	89%	33%		100%	0%	0%	89%	0%	11%	0%	44%	11%	78%	11%					
1	1			1			1	1		1		1			1					1		1						
2	1			1				1		1		1			1					1		1						
3	1			1				1	1	1		1			1						1	1						
4	1			1						1		1			1							1						
5	1			1			1	1		1		1			1					1		1						
6	1			1						1		1					1											
7	1			1							1	Energy resources, incentive programs, building analysis	1		1					1			1	Passive air conditioning				
8	1			1						1	Environmentally- friendly products	1	1		1							1						
9	1			1						1	Sun/shade anlysis	1	1		1							1						

	Question 12c				Question 13										Question 14					Question 15					Question 16		
	Eng calcs	Metering	Energy bills	Other	Residential New	Commercial New	Industrial New	Agricultural New	Institutional New	Residential Retro	Commercial Retro	Industrial Retro	Agricultural Retro	Institutional Retro	Other	Don't Know	Very unlikely	Unlikely	Indifferent	Likely	Very likely	Poor	Fair	Good		Very good	Excellent
1					22%	44%	0%	0%	33%	22%	11%	0%	0%	11%	0%	0%	11%	0%	0%	11%	78%	0%	0%	11%	56%	33%	
2					1	1			1	1				1							1				1		Satisfied with program.
3									1												1		1				Wonderful services, people excited about their work, good information.
4					1	1				1											1					1	
5											1										1				1		
6																					1					1	
7									1							1									1		
8						1														1					1		
9						1															1				1		

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	Question 1				Question 2a				Question 2b				Question 3								Question 4																							
	1/week	2-3/month	1/month	2-3/year	1/year	class	cons	tool	libr	Useware of PEC	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	Eligible	Very Likely	Wkshp	Not Likely	Very Likely	Tool	Not Likely	Very Likely	Cons	Not Likely	Very Likely	Library	Not Likely	Building Operator	Facility Manager	Engineer	Manufacturer/Vendor	EEP Implementer	Developer/Owner	Architect	Ltg Designer/Consultant	Energy Consultant	Other				
	0%	2%	8%	30%	60%	80%	46%	40%	58%	14%	18%	0%	2%	14%	0%	34%	18%	38%	0%	22%	10%	8%	70%	6%	10%	72%	8%	8%	72%	6%	10%	40%	8%	2%	0%	26%	2%	6%						
1					1	1	1		1								1	Mailing		1				1					1							1		1						
2				1		1								1						1																								
3			1			1	1	1	1							1				1				1					1															
4			1			1	1	1	1		1									1		1							1														1	
5					1	1	1	1	1					1							1				1				1															
6		1				1	1	1	1					1						1						1			1															
7					1	1	1	1	1		1										1				1				1															
8					1	1	1	1	1							1				1				1					1															
9					1	1	1	1	1											1				1				1	1															
10					1	1			1											1				1				1	1															
11					1	1		1	1											1			1					1																
12					1	1											1	LBNL		1				1				1															software	
13					1				1											1				1				1																
14					1	1			1								1	AHRAE		1	1			1				1																
15					1	1			1											1	1			1				1																
16					1		1														1				1				1															
17					1					1											1								1															
18					1	1	1	1	1											1	SHRAE																							
19					1				1											1	field trip				1			1																
20					1		1													1								1																
21					1					1																																		
22					1		1		1											1									1															

	Question 5						Question 6										Question 7				Question 8				Elaborate	Comments		
	Residential	Commercial	Industrial	Agricultural	Institutional/Educational	Other	<25	26-50	51-100	101-200	201-400	401-800	801-1,600	>1,600	Express Efficiency	Savings by Design	SFC	Other	Unaware of program	Inconvenient service location	Services available elsewhere	Inconvenient scheduling	Services not valued	No reason given				
	19%	62%	12%	6%	23%	0%	46%	18%	6%	4%	10%	0%	6%	10%	6%	10%	24%	4%	14%	8%	2%	10%	64%	6%				
1	1.0						1													1							Locations needed outside SF	
2	1.0						1														1						Would participate if the classes went towards AIA learning credits	
3	1.0								1						1									1			None.	
4	1.0	1.0	1.0	1.0	1.0		1																1			Has not had time, not needed.	None.	
5	1.0				1.0			1																1			None.	
6	1.0								1						1	1								1			Not needed in the past year.	None.
7	1.0	1.0						1																1			Sales office - not much need for PEC services at present.	None.
8	1.0											1												1			Will attend classes, but need has not yet arisen.	None.
9	1.0	1.0					1																		1		Did not specify - thought he (or others hat his company) had participated.	Expand resources available from Library. Interviewee also under impression firm was ineligible for Tool Lending service (?) - would like to be able to use that program.
10	1.0						1																	1			Motors program	None.
11	1.0										1								LEED						1		Hold classes outside of SF, more offerings outside of SF area in general.	
12	1.0						1																		1		Used PEC for specific job relating to energy efficiency. Have since focused on other software projects unrelated to energy efficiency.	
13	0.8	0.2							1																1		Provide better info about how PEC services can generate savings for users and their customers.	
14	1.0						1																		1			
15	0.3	0.8					1																			1		
16	1.0						1																			1		Planning to retire soon, not as interested in continuing education programs as he used to be.
17	0.3	0.3	0.3		0.3		1													1							Interviewee is 74, about to retire.	
18	1.0								1																	1	Generally positive about PEC services, and uses them when they are relevant to his projects.	
19					1.0		1																		1		Emphasis on operations as opposed to design.	
20		1.0									1																No. Does not feel familiar enough w/program offerings to make any recommendations.	
21		1.0												1	1											1	Expand services outside SF, possibly by partnering with organizations like ASHRAE	
22		1.0											1	1	1	1									1		None. Remarkd that availability and publicity are both commendable.	

uation Study of Local Crosscutting Pacific Energy Center Program  
 nter Participant Interview Results

	Question 1					Question 2a					Question 2b					Question 3										Question 4																
	1/week	2-3/month	1/month	2-3/year	1/year	class	cons	pool	libr	Unaware of PEC	Colleague	Web Page	En Ctr Calendar	Email	Fax	PG&E Rep	Other	Electrician	Very Likely	Workshop	Not Likely	Very Likely	Tool	Not Likely	Very Likely	Cons	Not Likely	Very Likely	Library	Not Likely	Building Operator	Facility Manager	Engineer	Manufacturer/Vendor	EEP Implementer	Developer/Owner	Architect	Light Designer/Consultant	Energy Consultant	Other		
23	0%	2%	8%	30%	60%	1	1												38%	0%	22%	10%	8%	70%	6%	10%	72%	8%	8%	72%	6%	10%	40%	8%	2%	0%	26%	2%	6%			
24				1		1	1	1	1		1								1					1																	1	
25			1			1		1	1								1 research		1			1							1	1											1	
26					1	1		1	1		1									1				1						1												
27					1	1		1	1											1				1						1												
28					1					1														1						1												
29				1		1											1 AIA			1					1					1								1				
30					1	1	1		1								1 not recall				1				1					1												
31					1	1	1															1							1													
32					1	1	1		1		1								1					1					1													
33					1	1														1				1						1												
34					1					1																																
35					1	1	1													1					1					1												
36				1		1											1 Client		1						1				1													
37					1	1	1														1				1				1													
38				1		1			1										1				1						1													

	Question 5						Question 6										Question 7				Question 8				Elaborate	Question 9	Comments
	Residential	Commercial	Industrial	Agricultural	Institutional/Educational	Other	<25	26-50	51-100	101-200	201-400	401-800	801-1,600	>1,600	Express Efficiency	Savings by Design	SFC	Other	Unaware of program	Inconvenient service location	Services available elsewhere	Inconvenient scheduling	Services not valued	No reason given			
	19%	62%	12%	6%	23%	0%	46%	18%	6%	4%	10%	0%	6%	10%	6%	10%	24%	4%	14%	8%	2%	10%	64%	6%			
23		1.0						1															1				More outreach, user-friendly website
24	0.2	0.2	0.2	2.0	2.0						1												1			HHWP does not qualify for a lot of PG&E programs, so not used to relying on them for too much	None.
25	0.6	0.2	0.2					1													1		1			Took many classes last year - recently working in Los Gatos and unable to effectively participate this year.	Classes were a little too general, would appreciate more in-depth engineering subjects.
26		0.8	0.3								1												1			None.	
27	0.5	0.5						1															1			None.	
28		1.0						1																		None.	n/a
29	1.0							1											1							Noted that most of his projects are quite small, usually doesn't require any outside resources.	None.
30	0.1	0.9						1															1			PEC's services don't really hold any appeal for them. Have taught classes on boiler/hydrionics efficiency themselves - more likely to teach a class than take one.	None.
31		1.0						1							1								1			Very busy as contractors, hasn't had time to look into PEC services.	None.
32					1.0								1											1			Seminars in Oakland would be convenient, also more night and weekend classes.
33					1.0		1									1					1		1				
34			1.0								1								1								
35					1.0		1											1						1		Been too busy with other work.	
36	0.1	0.9						1							1									1		Has not had time to investigate services.	
37	1.0						1																	1		Too busy.	None.
38		1.0											1				1	1							1	Has enrolled in classes in 2003, but is not on participant rolls for 2002.	





NEWCOMB  
ANDERSON  
ASSOCIATES

**Appendix C**  
**Review of Pre-existing PEC Workshop/Seminar Participant Surveys**





**PACIFIC ENERGY CENTER Measurement & Evaluation Project**  
**Review of a sample of Post-Class Evaluation Forms Collected by PEC**

**Answers from Both Spring and Fall 2002 Forms**

1 Overall Impression	Average	4.35
2 Appropriateness - Level		4.05
3 Appropriateness - Relevance		4.12
4 Organization		4.30
5 Instructor Ability		4.28
6 Handouts		4.17
7 Presentation Graphics		4.30
8		

9 **Answers from Fall 2002 Forms**

10	Average	
11 Percentage of Time		25%
12 Performance Before		34%
13 Performance After		66%
14 Performance Delta		33%
15		

16 **Answers from Spring 2002 Forms**

17	Percentage	
18 Calendar		27%
19 Web Page		24%
20 Colleague		9%
21 Email		45%
22 Fax		0%
23 PGE Rep		6%
24 Newsletter		0%
25 Other		1%
26		

27	NAME (OPTIONAL)	COURSE NAME	COURSE DATE	PARTICIPANT COURSE RATING					PERFORMANCE IMPROVEMENT					HOW DID PARTICIPANT FIND THIS CLASS?								
				Overall Impression	Appropriateness - Level	Appropriateness - Relevance	Organization	Instructor Ability	Handouts	Presentation Graphics	Percentage of Time	Performance Before	Performance After	Performance Delta	Percent Improvement	Calendar	Web Page	Colleague	Email	Fax	PGE Rep	Newsletter
28																						
29	MCCORMICK	Benchmarking and CAL-ARCH	11/21/2002	5	4	4	5	4	5	5	0.2	0.9	0.9	0	0							
30	RAI	Benchmarking and CAL-ARCH	11/21/2002	4	4	4	4	4	4	4	0.1	0.4	0.8	0.4	0.5							
31	TAKEDA	Benchmarking and CAL-ARCH	11/21/2002	5	5	5	5	5	5	5	0.3	0.3	0.9	0.6	0.7							
32		Benchmarking and CAL-ARCH	11/21/2002	3	2	3	3	3	3	3												
33		Benchmarking and CAL-ARCH	11/21/2002	4	4	3	5	4	4	3	0.1	0.1	0.4	0.3	0.8							
34		Benchmarking and CAL-ARCH	11/21/2002	4	3	4	3	4	4	5	0.4	0.4	0.5	0.1	0.2							
35		Benchmarking and CAL-ARCH	11/21/2002	4	4	4	4	4	4	4	0.2	0.5	0.6	0.1	0.2							
36		Benchmarking and CAL-ARCH	11/21/2002	5	5	5	5	5	5	5	0.2	0.5	0.7	0.2	0.3							
37		Benchmarking and CAL-ARCH	11/21/2002	4	4	4	4	3	4	4	0.1	0.1	0.1	0	0							
38		Benchmarking and CAL-ARCH	11/21/2002	3	3	3	3	3	3	3	0.2	0.5	0.9	0.4	0.4							
39		Benchmarking and CAL-ARCH	11/21/2002	5	4	4	4	4	5	5		0	0.7	0.7	1							
40		Benchmarking and CAL-ARCH	11/21/2002	4	4	5	3	4	3	4	0.1	0.6	0.7	0.1	0.1							
41		Benchmarking and CAL-ARCH	11/21/2002	5	5	5	5	5	4	4	0.2	0.2	0.8	0.6	0.8							
42		Benchmarking and CAL-ARCH	11/21/2002	3	2	4	4	3	3	3	0.3	0.2	0.4	0.2	0.5							
43		Benchmarking and CAL-ARCH	11/21/2002	3	3	4	3	3.5	3	4	0.3											
44		Benchmarking and CAL-ARCH	11/21/2002	4	3		4	4	4													
45	CHEN	Solar Geometry	10/7/2002	5	5	5	5	5	5	5	0.2	0.5	0.9	0.4	0.4							
46	DILLON	Solar Geometry	10/7/2002	5	5	5	5	5	5	5	0.4	0.1	0.7	0.6	0.9							
47	DO	Solar Geometry	10/7/2002	5	5	5	5	5	5	5	0.2	0.3	0.8	0.5	0.6							
48	FONG	Solar Geometry	10/7/2002	4	4	3	4	4	3.5	4		0	0.3	0.3	1							
49		Solar Geometry	10/7/2002	5			5		4		0.3	0.6	0.6	0	0							
50	GOLDSWORTHY	Solar Geometry	10/7/2002	5	5	5	5	5	5	3	0.1	0.1	0.5	0.4	0.8							
51	HEIL	Solar Geometry	10/7/2002	3	1	2	3	4	2	3	0.1	0.7	0.8	0.1	0.1							
52	JEROME	Solar Geometry	10/7/2002	4		3	5	4.5	5	5	0.1	0	0.7	0.7	1							
53	JOHANNESSEN	Solar Geometry	10/7/2002	4	4	4	5	4	5	5	0.1	0.3	0.8	0.5	0.6							
54	KWOCK	Solar Geometry	10/7/2002	1	1	2	1	1	1	1	0.1	0	0.3	0.3	1							
55	MCKEARIN	Solar Geometry	10/7/2002	5	5	5	5	5	5	5	0.4	0.2	0.8	0.6	0.8							
56	MONTERO	Solar Geometry	10/7/2002	4	4	5	4	4	4	4	0.4	0.4	0.6	0.2	0.3							
57	OTA	Solar Geometry	10/7/2002	5	4		5	5	5	5	0.2	0.1	0.8	0.7	0.9							
58	DEL ROSARIO	Solar Geometry	10/7/2002	5	5	5	5	5	5	5												
59	SCHIMPP	Solar Geometry	10/7/2002								0	0.1	0.3	0.2	0.7							
60	SCHIMPP	Solar Geometry	10/7/2002	5	4	4	5	4	4	5												
61	SCHOEN	Solar Geometry	10/7/2002				3.5						0	0.5	0.5	1						
62	SCOFFOM	Solar Geometry	10/7/2002	5	2		5	4	5	4	0.1	0.2	0.7	0.5	0.7							
63	SEGUIN	Solar Geometry	10/7/2002	4	4	4	4	5	4	4	0.3	0.9	1	0.1	0.1							
64	TABUEWA-FROLLI	Solar Geometry	10/7/2002	5	5	5	4	4	4	4	0.1	0.4	0.9	0.5	0.6							
65	VON CLEMM	Solar Geometry	10/7/2002	5	5	5	5	5	5	5	0.2	0.2	0.7	0.5	0.7							
66		Solar Geometry	10/7/2002	4	4		4	4	4	4	0.4	0.1	0.6	0.5	0.8							
67		Solar Geometry	10/7/2002	4	3.5		4	4	3	4	0.1	0	0.8	0.8	1							
68		Solar Geometry	10/7/2002	5	5		4	5	4	4	0.1	0.1	0.9	0.8	0.9							
69		Solar Geometry	10/7/2002	5	5	5	5	5	4	4	0.1	0.1	0.5	0.4	0.9							
70		Solar Geometry	10/7/2002	4	4	4	3	3	4	3	0.1	0.2	0.9	0.7	0.8							
71		Solar Geometry	10/7/2002	4	4	4	4	4	4	3	0.1	0.3	0.4	0.1	0.3							
72	BODDIE	Task and Ambient Lighting	10/10/2002	4	5		4	4	4	4	0.2	0.5	0.7	0.2	0.3							



				PARTICIPANT COURSE RATING					PERFORMANCE IMPROVEMENT					HOW DID PARTICIPANT FIND THIS CLASS?									
				Overall Impression	Appropriateness - Level	Appropriateness - Relevance	Organization	Instructor Ability	Handouts	Presentation Graphics	Percentage of Time	Performance Before	Performance After	Performance Delta	Percent Improvement	Calendar	Web Page	Colleague	Email	Fax	PGE Rep	Newsletter	Other
27	28	NAME (OPTIONAL)	COURSE NAME	COURSE DATE																			
148			Lighting Fundamentals	2/26/2002	5	4	4	5	3	5	5												1
149			Lighting Fundamentals	2/26/2002	3	4	4	4	4	3	4												1
150			Lighting Fundamentals	2/26/2002	4	3	3	5	5	4	5					1							
151			Lighting Fundamentals	2/26/2002	4	4	4	4	5	3	3												1
			Lighting Fundamentals	2/26/2002	4	3	4	4	5	4	5							1					
			Lighting Fundamentals	2/26/2002	5	5	3	4	4	4	4												1
			Lighting Fundamentals	2/26/2002	3	4	3	4	4	4	4					1		1					1
			Lighting Fundamentals	2/26/2002	5	5	5	5	5	5	5												1
			Lighting Fundamentals	2/26/2002	5	5	5	4	5	5	5												1
			Lighting Fundamentals	2/26/2002	5	4	4	4	5	4	4												1
			Lighting Fundamentals	2/26/2002	5	5	5	5	5	5	5					1							1
			Lighting Fundamentals	2/26/2002	5	5	5	5	5	5	5												1
			Lighting Fundamentals	2/26/2002	5	5	5	5	5	5	5												1
			Lighting Fundamentals	2/26/2002	4	4	4	5	5	4	4					1							
			Lighting Fundamentals	2/26/2002	4	4	4	4	4	4	4												1
			Lighting Fundamentals	2/26/2002	4	5	5	5	5	4	4												1
			The Glass Class	5/9/2002	4	4	4	4	4	3	3					1							
			The Glass Class	5/9/2002	5	3	4	4	3	4	4					1	1						1
			The Glass Class	5/9/2002	4	4	4	4	4	5	5					1							
			The Glass Class	5/9/2002	4	4	4	4	4	3	4					1							
			The Glass Class	5/9/2002	4	4	3	4	4	4	4					1	1						
			The Glass Class	5/9/2002	4	4	3	4	3	4	4					1							
			The Glass Class	5/9/2002	4	3	3	3	3	4	4					1							
			The Glass Class	5/9/2002	4	3	3	4	3	4	4					1							1
			The Glass Class	5/9/2002	3	3	3	3	3	4	3					1							
			The Glass Class	5/9/2002	5	4	5	5	4	4	5					1							
			The Glass Class	5/9/2002	5	5	5	5	5	5	5					1							
			The Glass Class	5/9/2002	3	2	3	3	3	3	4					1							
			The Glass Class	5/9/2002	4	4	4	4	4	5	4					1							
			The Glass Class	5/9/2002	5	5	4	4	5	5	5					1							
			The Glass Class	5/9/2002	4	3	3	4	4	4	4					1							
			The Glass Class	5/9/2002	4	5	5	4	4	4	4					1							
			The Glass Class	5/9/2002	4	3	4	4	4	5	3					1							
			Building Energy Audits	3/19/2002	5	4	4	5	5	5	5							1					
			Building Energy Audits	3/19/2002	4	1	3	4	4	4	4					1							
			Building Energy Audits	3/19/2002	5	3	4	5	5	5	5					1							
			Building Energy Audits	3/19/2002	4	5	5	4	4	3	4					1							
			Building Energy Audits	3/19/2002	4	3	3	3	3	4	5							1					
			Building Energy Audits	3/19/2002	5	4	4	4	4	4	4												1
			Building Energy Audits	3/19/2002	5	5	5	5	5	5	5												
			Building Energy Audits	3/19/2002	4	3	3	4	4	4	5					1							1
			Building Energy Audits	3/19/2002	4	4	4	5	5	4	4												
			Building Energy Audits	3/19/2002	4	3	2	3	3	4	4												1
			Building Energy Audits	3/19/2002	5	5	5	5	5	5	5					1							
			Building Energy Audits	3/19/2002	5	5	5	5	5	5	5					1							
			Building Energy Audits	3/19/2002	4	2	4	5	4	4	5												1
			Building Energy Audits	3/19/2002	4	3	3	4	4	4	5												1



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**Appendix D**  
**Review of Pre-existing PEC Tool Lending Service Participant Surveys**

**PACIFIC ENERGY CENTER Measurement and Evaluation Project  
Review of Survey Responses Collected by PEC associated with Tool Loan Program**

Total # Loan Responses 115  
 Total Projected Demand 16,889 or 147 kW per Loan  
 Total Projected kWh/yr F 30,545,736 or 265,615 kWh/yr per Loan  
 Total Projected therms/y 51,753 or 450 therm/yr per Loan

**2002 Tool Loan Email Survey Responses**

Loan ID #	Response Date	Projected Demand Reduction kW	Projected Energy Savings kWh/year	Gas Energy Savings therms	Satisfaction Rating	Related Government or Utility Sponsored EE Program	Category
3957	1/8/2003		1,450,000		excellent	SPC	Commercial Power & Energy
4310	1/5/2003				excellent		Envelope Analysis
4352	1/3/2003	25	298,000	4970	excellent	2002 SMUD Large Commercial Retro-commissioning program	Equipment Diagnostics
4333	12/31/2002	0.1	1		excellent		Residential Power & Energy
4323	12/31/2002				excellent		Illuminance Study
4006	12/13/2002	9.6	17300		excellent	CEC Photovoltaic buydown program	Equipment Diagnostics
4318	12/12/2002		20000	2000	excellent		Site Analysis
4337	12/12/2002			3500	very good	Express	Equipment Diagnostics
4282	12/12/2002	62.5	395,889		very good		Commercial Power & Energy
4300	12/12/2002	96	998,640	increased therms cogen	excellent	Self Self-generation Incentive Program	Commercial Power & Energy
4316	12/12/2002		1800		excellent		Site Analysis
4193	12/11/2002	2-10	13000		very good		Commercial Power & Energy



**2002 Tool Loan Email Survey Responses**

<b>Loan ID #</b>	<b>Response Date</b>	<b>Projected Demand Reduction kW</b>	<b>Projected Energy Savings kWh/year</b>	<b>Gas Energy Savings therms</b>	<b>Satisfaction Rating</b>	<b>Related Government or Utility Sponsored EE Program</b>	<b>Category</b>
4216	12/2/2002		6580		excellent		Residential Power & Energy
4200	12/2/2002				excellent		Commercial Power & Energy
4271	12/2/2002		135000	1140	excellent	2002 CPUC Local Program - Oakland Energy Partnership	Equipment Diagnostics
4236	11/26/2002		311,000		n/a		Commercial Power & Energy
4166	11/25/2002	20-60	200,000-1,000,000		excellent		Commercial Power & Energy
4291	11/22/2002				excellent		Commercial Power & Energy
3683	11/6/2002				excellent		Research
4235	11/6/2002	20	40000		excellent		Commercial Power & Energy
4110	11/5/2002				excellent		Commercial Power & Energy
4176	11/4/2002		121,638		excellent		Commercial Power & Energy
4220	10/30/2002	300	904,000		excellent		Commercial Power & Energy
3998	10/28/2002		38000	21000	excellent		Equipment Diagnostics
4204	10/28/2002				excellent		Equipment Diagnostics
4145	10/28/2002				excellent		Research

**2002 Tool Loan Email Survey Responses**

Loan ID #	Response Date	Projected Demand Reduction kW	Projected Energy Savings kWh/year	Gas Energy Savings therms	Satisfaction Rating	Related Government or Utility Sponsored EE Program	Category
3379	10/28/2002		92,570		n/a		Commercial Power & Energy
4001	10/28/2002	78.84	657842		excellent	LNSPC project #1138 - Administered by SDG&E	Commercial Power & Energy
4197	10/28/2002		640		excellent	Express	Commercial Power & Energy
4212	10/23/2002				good		Envelope Analysis
4041	10/22/2002				excellent		Equipment Diagnostics
4130	10/21/2002		225,000	10,000	excellent		Equipment Diagnostics
4088	10/11/2002				excellent		Residential Power & Energy
4119	10/10/2002		850		excellent	SF Power Savers	Commercial Power & Energy
4096	10/8/2002				excellent		Equipment Diagnostics
4172	10/8/2002				excellent		Equipment Diagnostics
3674	10/7/2002	988.3	4,830,588		excellent	Bi-Level Lighting Control Project. Sponsored by PG&E, SCE and SDG&E	Research
4129	10/5/2002				excellent		Commercial Power & Energy
4062	10/2/2002	25	200,000		very good		Commercial Power & Energy
3879	10/1/2002	4.936	10730		excellent		Commercial Power & Energy
4089	10/1/2002	97	400,000		excellent	SPC	Commercial Power & Energy

**2002 Tool Loan Email Survey Responses**

Loan ID #	Response Date	Projected Demand Reduction kW	Projected Energy Savings kWh/year	Gas Energy Savings therms	Satisfaction Rating	Related Government or Utility Sponsored EE Program	Category
4068	9/30/2002	50-100	255000		excellent		Commercial Power & Energy
4143	9/28/2002				excellent	California Energy Commission Renewable Technologies Buydown Program	Site Analysis
4140	9/27/2002	2.5	5600		excellent	California Energy Commission Renewable Technologies Buydown Program	Equipment Diagnostics
4084	9/26/2002				excellent		Commercial Power & Energy
4114	9/17/2002	150	400000		excellent	SMUD Recommissioning Program	Commercial Power & Energy
4070	9/1/2002				excellent		Residential Power & Energy
3988	8/30/2002				excellent		Residential Power & Energy
4057	8/28/2002		424000		excellent		Research
4099	8/28/2002				excellent		Research
4064	8/28/2002				excellent		Commercial Power & Energy
4050	8/20/2002				excellent		Illuminance Study
4042	8/19/2002	50	20	50	excellent		Illuminance Study
4011	8/19/2002		420222		very good		Commercial Power & Energy

**2002 Tool Loan Email Survey Responses**

Loan ID #	Response Date	Projected Demand Reduction kW	Projected Energy Savings kWh/year	Gas Energy Savings therms	Satisfaction Rating	Related Government or Utility Sponsored EE Program	Category
4029	8/18/2002	2	700		excellent	CEC Buydown program	Site Analysis
4022	8/14/2002	50% demand reduction	6-12000		excellent	CA PV Buy Down	Site Analysis
4054	8/12/2002		295,000		excellent	CEC 5x/29x wastewater treatment program	Commercial Power & Energy
3968	8/8/2002				excellent		Equipment Diagnostics
3981	7/31/2002	56	521381		excellent	SPC	Commercial Power & Energy
3972	7/29/2002				good		Site Analysis
4027	7/23/2002				excellent		Illuminance Study
3952	7/23/2002	0.5	4,380		excellent	Photovoltaic CEC and CA state rebates and tax credit	Residential Power & Energy
4016	7/23/2002				excellent		Illuminance Study
3996	7/23/2002	44	490400		excellent	SPC	Commercial Power & Energy
4009	7/19/2002				excellent		Site Analysis
3912	7/17/2002		262		excellent		Research
3942	7/16/2002	6.85	65379		excellent	SPC	Commercial Power & Energy
3943	7/11/2002				excellent		Site Analysis
4000	7/9/2002	11000	100000		excellent		Illuminance Study
3955	7/5/2002				excellent		Research
3966	7/1/2002				excellent		Equipment Diagnostics
3953	6/26/2002				excellent		Research

**2002 Tool Loan Email Survey Responses**

Loan ID #	Response Date	Projected Demand Reduction kW	Projected Energy Savings kWh/year	Gas Energy Savings therms	Satisfaction Rating	Related Government or Utility Sponsored EE Program	Category
3925	6/26/2002		9782		excellent		Commercial Power & Energy
3794	6/25/2002	1941	7657090		excellent	Evaluation of third party lighting retrofit program (Energy Solutions/NORESKO)	Commercial Power & Energy
3934	6/24/2002				excellent		Research
3915	6/19/2002				excellent		Commercial Power & Energy
3924	6/19/2002				excellent	CEC Innovative Peak Reduction Program	Commercial Power & Energy
3898	6/13/2002	30	13000		very good	CEC Innovative Peak Reduction Program	Commercial Power & Energy
3946	6/11/2002	70	350000		excellent		Equipment Diagnostics
3729	6/10/2002				very good	CEC-funded, PIER project on productivity	Research
3911	6/10/2002				excellent		Illuminance Study
3933	6/10/2002	400	2000000		excellent		Commercial Power & Energy
3913	6/6/2002				excellent		Equipment Diagnostics
3749	6/6/2002				excellent		Research
3903	5/28/2002	22	85000		excellent		Commercial Power & Energy
3895	5/28/2002				excellent	Power Saver Plus rebate program	Tool Evaluation
3859	5/25/2002				excellent		Equipment Diagnostics
3908	5/20/2002		8400		excellent	California Renewables Buydown program	Site Analysis

**2002 Tool Loan Email Survey Responses**

Loan ID #	Response Date	Projected Demand Reduction kW	Projected Energy Savings kWh/year	Gas Energy Savings therms	Satisfaction Rating	Related Government or Utility Sponsored EE Program	Category
3869	5/20/2002	164	1055235	increased by 1098	very good		Commercial Power & Energy
3861	5/2/2002	8.04	69852		excellent		Commercial Power & Energy
3279	5/2/2002	0.5	1000		excellent	DOE-funded energy efficiency pilot project on lighting in Bay Area offices	Research
3812	4/25/2002		436000		excellent		Commercial Power & Energy
3851	4/24/2002				excellent		Equipment Diagnostics
3796	4/19/2002	10	3650		excellent		Educational
3872	4/18/2002		569300		excellent		Commercial Power & Energy
3828	4/18/2002	35	1,122,339		excellent		Commercial Power & Energy
3740	4/16/2002	154	565,563		excellent		Commercial Power & Energy
3810	4/15/2002		600-1000		excellent	Power Savers	Commercial Power & Energy
3785	4/15/2002	17.7	126174		excellent	SPC	Commercial Power & Energy
3827	4/15/2002	30	80000	900	excellent		Commercial Power & Energy
3719	4/15/2002				excellent		Commercial Power & Energy
3811	4/15/2002				very good		Illuminance Study

**2002 Tool Loan Email Survey Responses**

Loan ID #	Response Date	Projected Demand Reduction kW	Projected Energy Savings kWh/year	Gas Energy Savings therms	Satisfaction Rating	Related Government or Utility Sponsored EE Program	Category
3760	4/11/2002	20			great		Commercial Power & Energy
3824	4/11/2002				excellent		Site Analysis
3805	4/9/2002	13.88	60794.4		excellent		Commercial Power & Energy
3786	4/9/2002				excellent		Tool Evaluation
3815	4/9/2002				excellent		Site Analysis
3751	4/9/2002	28	76,915		excellent	PG&E Cross Cutting Demand Reduction Program	Commercial Power & Energy
3752	4/9/2002	122.9	227,043		excellent	PG&E Cross Cutting Demand Reduction Program	Commercial Power & Energy
3756	4/9/2002	373	1,650,835		excellent	PG&E Cross Cutting Demand Reduction Program	Commercial Power & Energy
1372	4/9/2002				excellent		Commercial Power & Energy
2977	4/8/2002	420	165,586		excellent		Commercial Power & Energy
3067	3/18/2002	10	60,000		excellent		Commercial Power & Energy
3061	3/12/2002			8193	n/a		Commercial Power & Energy
3452	2/19/2002		766		n/a		Residential Power & Energy



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**Appendix E**  
**Independent M&E Survey Questionnaire Forms**





## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:	
-----------------	--

<b>Program Participant Interviewed</b>
Name, Company:
Address:
Phone:
E-mail:

<b>Independent M&amp;E Reviewer/Interviewer</b>
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

**Participant Interviewed for Follow-up Impressions of:**

- |   |  |
|---|--|
| <p><input checked="" type="checkbox"/> <b>CLASSES</b><br/>Workshops/Educational Services</p> <p><input type="checkbox"/> <b>TOOL LOANS</b><br/>Building Performance Diagnostic<br/>Tool Lending Service</p> | <p><input type="checkbox"/> <b>ARCHITECTURAL AND BUILDING CONSULTATIONS</b><br/>Energy Consulting Services</p> <p><input type="checkbox"/> <b>LIBRARY</b><br/>Energy Resource Center/Library</p> |
|---|--|

**Background for Follow-up Interviews**

In order to maintain continuous improvement of the services offered by the Pacific Energy Center (PEC), an independent consulting firm, Newcomb Anderson Associates, is conducting an evaluation of the services offered during 2002. This review has been mandated by the California Public Utilities Commission. All the information you provide is strictly confidential. Your contribution to this independent review process is necessary and appreciated in order to assess the overall levels of performance and success of the PEC.

**General Questions for All PEC Program Participants**

- 1.) Besides Educational Workshops, which of the following 2002 PEC Program Services are you aware of?
 

<input type="checkbox"/> Architectural and Building Consulting services	<input type="checkbox"/> Diagnostic Tool Lending services
<input type="checkbox"/> Energy Resource Center/Library services	<input type="checkbox"/> None
  
- 2.) Which of the following most accurately describes your occupation?
 

<input type="checkbox"/> Building Operator	<input type="checkbox"/> Developer/Owner
<input type="checkbox"/> Facility Manager	<input type="checkbox"/> Architect
<input type="checkbox"/> Engineer	<input type="checkbox"/> Lighting Designer/Consultant
<input type="checkbox"/> Manufacturer/Vendor	<input type="checkbox"/> Energy Consultant
<input type="checkbox"/> Energy Efficiency Program Implementer	<input type="checkbox"/> Other: _____
  
- 3.) What is the primary focus of your business? If you are involved in multiple sectors, please indicate approximate percentages of time spent on each (e.g., 75% residential - 25% commercial).
 

<input type="checkbox"/> Residential	<input type="checkbox"/> Agricultural
<input type="checkbox"/> Commercial	<input type="checkbox"/> Institutional/Educational
<input type="checkbox"/> Industrial	<input type="checkbox"/> Other: _____
  
- 4.) Approximately how many people are employed at your business (include parent and affiliated companies in your estimate)? If you are a government/civil employee, estimate the size of your department.
 

<input type="checkbox"/> Less than 25	<input type="checkbox"/> 51 to 100	<input type="checkbox"/> 201 to 400	<input type="checkbox"/> 801 to 1,600
<input type="checkbox"/> 26 to 50	<input type="checkbox"/> 101 to 200	<input type="checkbox"/> 401 to 800	<input type="checkbox"/> greater than 1,600



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:

### Program Participant Interviewed

Name, Company:  
Address:  
  
Phone:  
E-mail:

### Independent M&E Reviewer/Interviewer

Name:  
505 Sansome St., Suite 1600  
San Francisco, CA 94111  
Phone: 415/434-2600  
E-mail:

5.) During 2002, have you participated in other incentive programs, such as the following?

Express Efficiency                       Standard Performance Contract Program  
 Savings By Design                       Other: \_\_\_\_\_

6.) Apart from specific energy efficiency projects, have the Educational Workshops influenced you to update or change any standard practices (e.g., standard designs, operations and maintenance practices, retrofit procedures, specifications)?

Yes                       No                       Don't know

If so, please elaborate on what changes have been made:

\_\_\_\_\_

7.) How did you find out about the Pacific Energy Center services?

Colleague                       Web Page                       Energy Center's Calendar  
 Email                       Fax                       PG&E Representative  
 Other: \_\_\_\_\_

8.) How often have you used the Pacific Energy Center services?

once or more per week                       two to three times per month                       once per month                       two to three times per year                       once per year or less

9.) How likely are you to recommend the Pacific Energy Center services to others?

Inside your organization:                       Very Likely                       Likely                       Not Likely  
 Outside your organization:                       Very Likely                       Likely                       Not Likely

Please proceed to the sheet marked ' Educational Workshops'



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date: \_\_\_\_\_

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

### Questions for PEC Workshop/Class Participants

10.) Approximately how many PEC Workshops/Classes have you attended during 2002?

One   
  Two   
  Three   
  Four   
  Five or More

Approximately how many PEC Workshops/Classes have you attended during previous program years?

One   
  Two   
  Three   
  Four   
  Five or More   
  None

Have you attended multiple courses in one topic area (for example, lighting design)?

Yes   
  No

mandated by the California Public Utilities Commission. All the information you provide is strictly confidential. Your contribution to this independent study is appreciated. If you have attended multiple courses in one topic area, do you think these classes have offered an adequate depth of study (in other words, classes have built upon each other)?

Yes   
  Somewhat   
  No

Do you feel the classes offered have provided a wide variety of content?

Yes   
  Somewhat   
  No

11.) Did the Classes provide you with information or resources that were applicable to your work during 2002?

Yes   
  Was not involved in any energy-related work during 2002

No

If "No" please indicate desired improvements to the PEC Workshops/Classes in question 18.) below.

12.) Have any energy-saving measures been incorporated into projects you have been associated with as a result of the assistance given by the PEC Classes during 2002?

Yes   
  No   
  I don't know

If "Yes", please clarify the types of projects below

HVAC   
  Lighting   
  Architectural Design (siting, building envelope)

Building Measurement   
  Other: \_\_\_\_\_

If able, please provide an approximate estimate of annual energy savings realized from associated energy-savings measures.

Electricity	Natural Gas	Water	Other
<input type="checkbox"/> kWh	<input type="checkbox"/> therms	<input type="checkbox"/> gallons	<input type="checkbox"/> _____
<input type="checkbox"/> kW			

How were these figures estimated?

Engineering Calculations   
  Review of Energy Bills



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

**Questions for PEC Workshop/Class Participants**

Metering  Other: \_\_\_\_\_

13.) Which of the following project types have received energy saving measures as a result of assistance provided by the PEC Classes during 2002?

- |   |  |
|---|--|
| <input type="checkbox"/> Residential New Construction<br><input type="checkbox"/> Commercial New Construction<br><input type="checkbox"/> Industrial New Construction<br><input type="checkbox"/> Agricultural New Construction<br><input type="checkbox"/> Institutional New Construction (schools, healthcare, government)<br><input type="checkbox"/> Other: _____ | <input type="checkbox"/> Residential Renovation/Retrofit<br><input type="checkbox"/> Commercial Renovation/Retrofit<br><input type="checkbox"/> Industrial Renovation/Retrofit<br><input type="checkbox"/> Agricultural Renovation/Retrofit<br><input type="checkbox"/> Institutional Renovation/Retrofit (schools, healthcare, government)<br><input type="checkbox"/> I don't know |
|---|--|

14.) How would you rate the usefulness of the information and resources presented at the PEC Classes during 2002? If you have attended multiple Workshops that you would like to score separately, please check multiple options below.

- |                                    |                                    |                                    |   |   |
|------------------------------------|------------------------------------|------------------------------------|---|---|
| <input type="checkbox"/> Poor<br>1 | <input type="checkbox"/> Fair<br>2 | <input type="checkbox"/> Good<br>3 | <input type="checkbox"/> Very Good<br>4 | <input type="checkbox"/> Excellent<br>5 |
|------------------------------------|------------------------------------|------------------------------------|---|---|

15.) How likely are you to attend PEC Classes in the future?

- |   |  |   |                                      |   |
|---|--|---|--------------------------------------|---|
| <input type="checkbox"/> Very Unlikely<br>1 | <input type="checkbox"/> Unlikely<br>2 | <input type="checkbox"/> Indifferent<br>3 | <input type="checkbox"/> Likely<br>4 | <input type="checkbox"/> Very Likely<br>5 |
|---|--|---|--------------------------------------|---|

16.) Please rate your performance improvement on the tasks requiring the skills and knowledge taught in the course. If you have attended multiple Workshops and feel that your performance improvement varied, please check multiple options.

- Performance Improvement
- |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 0%                       | 25%                      | 50%                      | 75%                      | 100%                     |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

17.) How would you rate the PEC's efforts to get your feedback?

- |                                    |                                    |                                    |   |   |
|------------------------------------|------------------------------------|------------------------------------|---|---|
| <input type="checkbox"/> Poor<br>1 | <input type="checkbox"/> Fair<br>2 | <input type="checkbox"/> Good<br>3 | <input type="checkbox"/> Very Good<br>4 | <input type="checkbox"/> Excellent<br>5 |
|------------------------------------|------------------------------------|------------------------------------|---|---|

18.) Do you have any specific suggestions as to how the PEC Workshops/Classes could be improved in the future?

**Reviewer/Interviewer Notes**



# 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date: \_\_\_\_\_

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

Questions for PEC Workshop/Class Participants

Signature

Interviewer signature	Date	Checked by (initials)	Date
-----------------------	------	-----------------------	------



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date: _____
-----------------------

<b>Program Participant Interviewed</b>
Name, Company: Address:  Phone: E-mail:

<b>Independent M&amp;E Reviewer/Interviewer</b>
Name: 505 Sansome St., Suite 1600 San Francisco, CA 94111 Phone: 415/434-2600 E-mail:

**Participant Interviewed for Follow-up Impressions of:**

\_\_\_\_\_ **CLASSES**  
Workshops/Educational Services

\_\_\_\_\_ **ARCHITECTURAL AND BUILDING CONSULTATIONS**  
Energy Consulting Services

X \_\_\_\_\_ **TOOL LOANS**  
Building Performance Diagnostic  
Tool Lending Service

\_\_\_\_\_ **LIBRARY**  
Energy Resource Center/Library

<b>Background for Follow-up Interviews</b>
<p>In order to maintain continuous improvement of the services offered by the Pacific Energy Center (PEC), an independent consulting firm, Newcomb Anderson Associates, is conducting an evaluation of the services offered during 2002. This review has been mandated by the California Public Utilities Commission. All the information you provide is strictly confidential. Your contribution to this independent review process is necessary and appreciated in order to assess the overall levels of performance and success of the PEC.</p>
<b>General Questions for All PEC Program Participants</b>

1.) Besides Diagnostic Tool Lending services, which of the following 2002 PEC Program Services are you aware of?

- |   |  |
|---|--|
| _____ Educational Workshops                   | _____ Architectural and Building Consulting services |
| _____ Energy Resource Center/Library services | _____ None   |

2.) Which of the following most accurately describes your occupation?

- |   |                                    |
|---|------------------------------------|
| _____ Building Operator                     | _____ Developer/Owner              |
| _____ Facility Manager                      | _____ Architect                    |
| _____ Engineer                              | _____ Lighting Designer/Consultant |
| _____ Manufacturer/Vendor                   | _____ Energy Consultant            |
| _____ Energy Efficiency Program Implementer | _____ Other: _____                 |

3.) What is the primary focus of your business? If you are involved in multiple sectors, please indicate approximate percentages of time spent on each (e.g., 75% residential - 25% commercial).

- |                   |                                 |
|-------------------|---------------------------------|
| _____ Residential | _____ Agricultural              |
| _____ Commercial  | _____ Institutional/Educational |
| _____ Industrial  | _____ Other: _____              |



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

- 4.) Approximately how many people are employed at your business (include parent and affiliated companies in your estimate)? If you are a government/civil employee, estimate the size of your department.
- Less than 25      51 to 100      201 to 400      801 to 1,600  
 26 to 50      101 to 200      401 to 800      greater than 1,600
- 5.) During 2002, have you participated in other incentive programs, such as the following?
- Express Efficiency      Standard Performance Contract Program  
 Savings By Design      Other: \_\_\_\_\_
- 6.) Apart from specific energy efficiency projects, have the Diagnostic Tool Lending services influenced you to update or change any standard practices (e.g., standard designs, operations and maintenance practices, retrofit procedures, specifications)?
- Yes      No      Don't know

If so, please elaborate on what changes have been made:

\_\_\_\_\_

- 7.) How did you find out about the Pacific Energy Center services?
- Colleague      Web Page      Energy Center's Calendar  
 Email      Fax      PG&E Representative  
 Other: \_\_\_\_\_

- 8.) How often have you used the Pacific Energy Center services?
- once or more per week      two to three times per month      once per month      two to three times per year      once per year or less

- 9.) How likely are you to recommend the Pacific Energy Center services to others?
- Inside your organization:      Very Likely      Likely      Not Likely  
 Outside your organization:      Very Likely      Likely      Not Likely

**Please proceed to the sheet marked ' Diagnostic Tool Lending services'**



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

<b>Questions for Pacific Energy Center Diagnostic Tool Lending Services Participants</b>
--

10.) Approximately how many times did you use the Diagnostic Tool Lending Services during the 2002 program year?

One    
  Two    
  Three    
  Four    
  Five or More

11.) Did the PEC Diagnostic Tool Lending Services provide you with information or resources that were applicable to your work during 2002?

Yes                     
  Was not involved in any energy-related work during 2002  
 No

If "No," please indicate desired improvements to the Diagnostic Tool Lending Services in question 17.) below.

12.) Have any energy-saving measures been incorporated into projects you have been associated with as a result of the assistance given by the Diagnostic Tool Lending services during 2002?

Yes                     
  No                     
  I don't know

If "Yes", please clarify the types of projects below.

HVAC                     
  Lighting                     
  Architectural Design (siting, building envelope)  
 Building Measurement                     
  Other: \_\_\_\_\_

If able, please provide an approximate estimate of annual energy savings realized from associated energy-savings measures.

Electricity	Natural Gas	Water	Other
<input type="checkbox"/> kWh	<input type="checkbox"/> therms	<input type="checkbox"/> gallons	<input type="checkbox"/> _____
<input type="checkbox"/> kW			

How were these figures estimated?

Engineering Calculations                     
  Review of Energy Bills  
 Metering                     
  Other: \_\_\_\_\_





## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:	
-----------------	--

<b>Program Participant Interviewed</b>
Name, Company:
Address:
Phone:
E-mail:

<b>Independent M&amp;E Reviewer/Interviewer</b>
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

<b>Questions for Pacific Energy Center Diagnostic Tool Lending Services Participants</b>
--

13.) Which of the following project types have received specific energy saving measures as a result of assistance provided by the Diagnostic Tool Lending services during 2002?

- |  |   |
|--|---|
| <p><input type="checkbox"/> Residential New Construction</p> <p><input type="checkbox"/> Commercial New Construction</p> <p><input type="checkbox"/> Industrial New Construction</p> <p><input type="checkbox"/> Agricultural New Construction</p> <p><input type="checkbox"/> Institutional New Construction<br/>(schools, healthcare, government)</p> <p><input type="checkbox"/> Other: _____</p> | <p><input type="checkbox"/> Residential Renovation/Retrofit</p> <p><input type="checkbox"/> Commercial Renovation/Retrofit</p> <p><input type="checkbox"/> Industrial Renovation/Retrofit</p> <p><input type="checkbox"/> Agricultural Renovation/Retrofit</p> <p><input type="checkbox"/> Institutional Renovation/Retrofit<br/>(schools, healthcare, government)</p> <p><input type="checkbox"/> I don't know</p> |
|--|---|

14.) How would you rate the usefulness of the tool use training presented by the Diagnostic Tool Lending services?

- |                                    |                                    |                                    |   |   |
|------------------------------------|------------------------------------|------------------------------------|---|---|
| <input type="checkbox"/> Poor<br>1 | <input type="checkbox"/> Fair<br>2 | <input type="checkbox"/> Good<br>3 | <input type="checkbox"/> Very Good<br>4 | <input type="checkbox"/> Excellent<br>5 |
|------------------------------------|------------------------------------|------------------------------------|---|---|

15.) How likely are you to use the Diagnostic Tool Lending services in the future?

- |  |  |   |                                      |  |
|--|--|---|--------------------------------------|--|
| <input type="checkbox"/> Very<br>Unlikely<br>1 | <input type="checkbox"/> Unlikely<br>2 | <input type="checkbox"/> Indifferent<br>3 | <input type="checkbox"/> Likely<br>4 | <input type="checkbox"/> Very<br>Likely<br>5 |
|--|--|---|--------------------------------------|--|



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

**Questions for Pacific Energy Center Diagnostic Tool Lending Services Participants**

16.) How would you rate the PEC's efforts to get your feedback?

\_\_\_\_\_ Poor  
1
\_\_\_\_\_ Fair  
2
\_\_\_\_\_ Good  
3
\_\_\_\_\_ Very Good  
4
\_\_\_\_\_ Excellent  
5

17.) Do you have any specific suggestions as to how the PEC Program could be improved in the future?

Reviewer/Interviewer Notes

Signature				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Interviewer signature _____</td> <td style="width: 10%; border: none; text-align: center;">Date _____</td> <td style="width: 30%; border: none;">Checked by (initials) _____</td> <td style="width: 10%; border: none; text-align: center;">Date _____</td> </tr> </table>	Interviewer signature _____	Date _____	Checked by (initials) _____	Date _____
Interviewer signature _____	Date _____	Checked by (initials) _____	Date _____	



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date: _____
-----------------------

<b>Program Participant Interviewed</b>
Name, Company:
Address:
Phone:
E-mail:

<b>Independent M&amp;E Reviewer/Interviewer</b>
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

**Participant Interviewed for Follow-up Impressions of:**

- |  |   |
|--|---|
| <p><input type="checkbox"/> <b>CLASSES</b><br/>Workshops/Educational Services</p> <p><input type="checkbox"/> <b>TOOL LOANS</b><br/>Building Performance Diagnostic<br/>Tool Lending Service</p> | <p><input checked="" type="checkbox"/> <b>ARCHITECTURAL AND BUILDING CONSULTATIONS</b><br/>Energy Consulting Services</p> <p><input type="checkbox"/> <b>LIBRARY</b><br/>Energy Resource Center/Library</p> |
|--|---|

**Background for Follow-up Interviews**

In order to maintain continuous improvement of the services offered by the Pacific Energy Center (PEC), an independent consulting firm, Newcomb Anderson Associates, is conducting an evaluation of the services offered during 2002. This review has been mandated by the California Public Utilities Commission. All the information you provide is strictly confidential. Your contribution to this independent review process is necessary and appreciated in order to assess the overall levels of performance and success of the PEC.

**General Questions for All PEC Program Participants**

1.) Besides Architectural and Building Consulting services, which of the following 2002 PEC Program Services are you aware of?

- |  |   |
|--|---|
| <input type="checkbox"/> Educational Workshops                   | <input type="checkbox"/> Diagnostic Tool Lending services |
| <input type="checkbox"/> Energy Resource Center/Library services | <input type="checkbox"/> None                             |

2.) Which of the following most accurately describes your occupation?

- |  |   |
|--|---|
| <input type="checkbox"/> Building Operator                     | <input type="checkbox"/> Developer/Owner              |
| <input type="checkbox"/> Facility Manager                      | <input type="checkbox"/> Architect                    |
| <input type="checkbox"/> Engineer                              | <input type="checkbox"/> Lighting Designer/Consultant |
| <input type="checkbox"/> Manufacturer/Vendor                   | <input type="checkbox"/> Energy Consultant            |
| <input type="checkbox"/> Energy Efficiency Program Implementer | <input type="checkbox"/> Other: _____                 |

3.) What is the primary focus of your business? If you are involved in multiple sectors, please indicate approximate percentages of time spent on each (e.g., 75% residential - 25% commercial).

- |                                      |  |
|--------------------------------------|--|
| <input type="checkbox"/> Residential | <input type="checkbox"/> Agricultural              |
| <input type="checkbox"/> Commercial  | <input type="checkbox"/> Institutional/Educational |
| <input type="checkbox"/> Industrial  | <input type="checkbox"/> Other: _____              |



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

- 4.) Approximately how many people are employed at your business (include parent and affiliated companies in your estimate)? If you are a government/civil employee, estimate the size of your department.
- Less than 25      51 to 100      201 to 400      801 to 1,600  
 26 to 50      101 to 200      401 to 800      greater than 1,600
- 5.) During 2002, have you participated in other incentive programs, such as the following?
- Express Efficiency      Standard Performance Contract Program  
 Savings By Design      Other: \_\_\_\_\_
- 6.) Apart from specific energy efficiency projects, have the Architectural and Building Consulting services influenced you to update or change any standard practices (e.g., standard designs, operations and maintenance practices, retrofit procedures, specifications)?
- Yes      No      Don't know

If so, please elaborate on what changes have been made:

\_\_\_\_\_

- 7.) How did you find out about the Pacific Energy Center services?
- Colleague      Web Page      Energy Center's Calendar  
 Email      Fax      PG&E Representative  
 Other: \_\_\_\_\_

- 8.) How often have you used the Pacific Energy Center services?
- once or more per week      two to three times per month      once per month      two to three times per year      once per year or less

- 9.) How likely are you to recommend the Pacific Energy Center services to others?
- Inside your organization:      Very Likely      Likely      Not Likely  
 Outside your organization:      Very Likely      Likely      Not Likely

**Please proceed to the sheet marked ' Architectural and Building Consulting services'**



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

<b>Questions for Pacific Energy Center Architectural and Building Consulting Services Participants</b>
--

10.) What type of information are you most likely to contact the Architectural and Building Consultation services about?

HVAC                       Lighting                       Architectural Design (siting, building envelope)  
 Building Measurement                       Other: \_\_\_\_\_

11.) Did the Architectural and Building Consulting services provide information or resources that were applicable to your work during 2002?

Yes                       Was not involved in any energy-related work during 2002  
 No

If "No," please indicate desired improvements to the PEC Energy Consulting Services in question 16.) below.

12.) Have any energy-saving measures been incorporated into projects you have been associated with as a result of the assistance given by the Architectural and Building Consulting services during 2002?

Yes                       No                       I don't know

If "Yes", please clarify the types of projects below

HVAC                       Lighting                       Architectural Design (siting, building envelope)  
 Building Measurement                       Other: \_\_\_\_\_

If able, please provide an approximate estimate of annual energy savings realized from associated energy-savings measures.

Electricity	Natural Gas	Water	Other
<input type="checkbox"/> kWh	<input type="checkbox"/> therms	<input type="checkbox"/> gallons	<input type="checkbox"/> _____
<input type="checkbox"/> kW			

How were these figures estimated?

Engineering Calculations                       Review of Energy Bills  
 Metering                       Other: \_\_\_\_\_



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

<b>Questions for Pacific Energy Center Architectural and Building Consulting Services Participants</b>
--

13.) Which of the following project types have received specific energy saving measures as a result of assistance provided by the Architectural and Building Consulting services during 2002?

- |  |   |
|--|---|
| <p><input type="checkbox"/> Residential New Construction</p> <p><input type="checkbox"/> Commercial New Construction</p> <p><input type="checkbox"/> Industrial New Construction</p> <p><input type="checkbox"/> Agricultural New Construction</p> <p><input type="checkbox"/> Institutional New Construction<br/>(schools, healthcare, government)</p> <p><input type="checkbox"/> Other: _____</p> | <p><input type="checkbox"/> Residential Renovation/Retrofit</p> <p><input type="checkbox"/> Commercial Renovation/Retrofit</p> <p><input type="checkbox"/> Industrial Renovation/Retrofit</p> <p><input type="checkbox"/> Agricultural Renovation/Retrofit</p> <p><input type="checkbox"/> Institutional Renovation/Retrofit<br/>(schools, healthcare, government)</p> <p><input type="checkbox"/> I don't know</p> |
|--|---|

14.) How likely are you to use the Architectural and Building Consulting services in the future?

- |  |                                   |                                      |                                 |                                      |
|--|-----------------------------------|--------------------------------------|---------------------------------|--------------------------------------|
| <input type="checkbox"/> Very Unlikely | <input type="checkbox"/> Unlikely | <input type="checkbox"/> Indifferent | <input type="checkbox"/> Likely | <input type="checkbox"/> Very Likely |
| 1                                      | 2                                 | 3                                    | 4                               | 5                                    |

15.) How would you rate the PEC's efforts to get your feedback?

- |                               |                               |                               |                                    |                                    |
|-------------------------------|-------------------------------|-------------------------------|------------------------------------|------------------------------------|
| <input type="checkbox"/> Poor | <input type="checkbox"/> Fair | <input type="checkbox"/> Good | <input type="checkbox"/> Very Good | <input type="checkbox"/> Excellent |
| 1                             | 2                             | 3                             | 4                                  | 5                                  |

16.) Do you have any specific suggestions as to how the Architectural and Building Consulting services could be improved in the future?

Reviewer/Interviewer Notes			
Signature			
Interviewer signature	Date	Checked by (initials)	Date



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date: \_\_\_\_\_

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

**Participant Interviewed for Follow-up Impressions of:**

**CLASSES**  
Workshops/Educational Services

**ARCHITECTURAL AND BUILDING CONSULTATIONS**  
Energy Consulting Services

**TOOL LOANS**  
Building Performance Diagnostic  
Tool Lending Service

**LIBRARY**  
Energy Resource Center/Library

**Background for Follow-up Interviews**

In order to maintain continuous improvement of the services offered by the Pacific Energy Center (PEC), an independent consulting firm, Newcomb Anderson Associates, is conducting an evaluation of the services offered during 2002. This review has been mandated by the California Public Utilities Commission. All the information you provide is strictly confidential. Your contribution to this independent review process is necessary and appreciated in order to assess the overall levels of performance and success of the PEC.

**General Questions for All PEC Program Participants**

1.) Besides Energy Resource Center/Library services, which of the following 2002 PEC Program Services are you aware of?

- |   |   |
|---|---|
| <input type="checkbox"/> Educational Workshops            | <input type="checkbox"/> Architectural and Building Consulting services |
| <input type="checkbox"/> Diagnostic Tool Lending services | <input type="checkbox"/> None   |

2.) Which of the following most accurately describes your occupation?

- |  |   |
|--|---|
| <input type="checkbox"/> Building Operator                     | <input type="checkbox"/> Developer/Owner              |
| <input type="checkbox"/> Facility Manager                      | <input type="checkbox"/> Architect                    |
| <input type="checkbox"/> Engineer                              | <input type="checkbox"/> Lighting Designer/Consultant |
| <input type="checkbox"/> Manufacturer/Vendor                   | <input type="checkbox"/> Energy Consultant            |
| <input type="checkbox"/> Energy Efficiency Program Implementer | <input type="checkbox"/> Other: _____                 |

3.) What is the primary focus of your business? If you are involved in multiple sectors, please indicate approximate percentages of time spent on each (e.g., 75% residential - 25% commercial).

- |                                      |  |
|--------------------------------------|--|
| <input type="checkbox"/> Residential | <input type="checkbox"/> Agricultural              |
| <input type="checkbox"/> Commercial  | <input type="checkbox"/> Institutional/Educational |
| <input type="checkbox"/> Industrial  | <input type="checkbox"/> Other: _____              |



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:	
-----------------	--

<b>Program Participant Interviewed</b>
Name, Company:
Address:
Phone:
E-mail:

<b>Independent M&amp;E Reviewer/Interviewer</b>
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

- 4.) Approximately how many people are employed at your business (include parent and affiliated companies in your estimate)? If you are a government/civil employee, estimate the size of your department.
- Less than 25      51 to 100      201 to 400      801 to 1,600  
 26 to 50      101 to 200      401 to 800      greater than 1,600
- 5.) During 2002, have you participated in other incentive programs, such as the following?
- Express Efficiency      Standard Performance Contract Program  
 Savings By Design      Other: \_\_\_\_\_
- 6.) Apart from specific energy efficiency projects, have the Energy Resource Center/Library services influenced you to update or change any standard practices (e.g., standard designs, operations and maintenance practices, retrofit procedures, specifications)?
- Yes      No      Don't know
- If so, please elaborate on what changes have been made:
- \_\_\_\_\_

- 7.) How did you find out about the Pacific Energy Center services?
- Colleague      Web Page      Energy Center's Calendar  
 Email      Fax      PG&E Representative  
 Other: \_\_\_\_\_
- 8.) How often have you used the Pacific Energy Center services?
- once or more per week      two to three times per month      once per month      two to three times per year      once per year or less
- 9.) How likely are you to recommend the Pacific Energy Center services to others?
- Inside your organization:      Very Likely      Likely      Not Likely  
 Outside your organization:      Very Likely      Likely      Not Likely

**Please proceed to the sheet marked ' Energy Resource Center/Library services'**





# 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:	
-----------------	--

<b>Program Participant Interviewed</b>
Name, Company:
Address:
Phone:
E-mail:

<b>Independent M&amp;E Reviewer/Interviewer</b>
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

<b>Questions for PEC Energy Resource Center/Library Services Participants</b>
---

10.) What type of information are you most likely to request from the PEC Energy Resource Center Library?

HVAC                       Lighting                       Architectural Design (siting, building envelope)  
 Building Measurement                       Other: \_\_\_\_\_

11.) Did the PEC Energy Resource Center Library provide information or resources that were applicable to your work during 2002?

Yes                       Was not involved in any energy-related work during 2002  
 No

If "No," please indicate desired improvements to the PEC Energy Resource Center Library in question 18.) below.

12.) Have any energy-saving measures been incorporated into projects you have been associated with as a result of the assistance given by the PEC Energy Resource Center Library during 2002?

Yes                       No                       I don't know

If "Yes", please clarify the types of projects below

HVAC                       Lighting                       Architectural Design (siting, building envelope)  
 Building Measurement                       Other: \_\_\_\_\_

If able, please provide an approximate estimate of annual energy savings realized from associated energy-savings measures.

Electricity	Natural Gas	Water	Other
<input type="checkbox"/> kWh	<input type="checkbox"/> therms	<input type="checkbox"/> gallons	<input type="checkbox"/> _____
<input type="checkbox"/> kW			

How were these figures estimated?

Engineering Calculations                       Review of Energy Bills  
 Metering                       Other: \_\_\_\_\_



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:	
-----------------	--

<b>Program Participant Interviewed</b>
Name, Company:
Address:
Phone:
E-mail:

<b>Independent M&amp;E Reviewer/Interviewer</b>
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

<b>Questions for PEC Energy Resource Center/Library Services Participants</b>
---

13.) Which of the following project types have received specific energy saving measures as a result of assistance provided by the PEC Energy Resource Center Library during 2002?

- |  |   |
|--|---|
| <input type="checkbox"/> Residential New Construction<br><input type="checkbox"/> Commercial New Construction<br><input type="checkbox"/> Industrial New Construction<br><input type="checkbox"/> Agricultural New Construction<br><input type="checkbox"/> Institutional New Construction<br>(schools, healthcare, government)<br><input type="checkbox"/> Other: _____ | <input type="checkbox"/> Residential Renovation/Retrofit<br><input type="checkbox"/> Commercial Renovation/Retrofit<br><input type="checkbox"/> Industrial Renovation/Retrofit<br><input type="checkbox"/> Agricultural Renovation/Retrofit<br><input type="checkbox"/> Institutional Renovation/Retrofit<br>(schools, healthcare, government)<br><input type="checkbox"/> I don't know |
|--|---|

14.) What is your preferred method of receiving information from the Energy Resource Center Library?

- |   |   |
|---|---|
| <input type="checkbox"/> Email from the Librarian<br><input type="checkbox"/> Via the Energy Center's Website | <input type="checkbox"/> Mailed paper copies<br><input type="checkbox"/> Other: _____ |
|---|---|

15.) How likely are you to use the PEC Energy Resource Center Library in the future?

- |  |  |   |                                      |  |
|--|--|---|--------------------------------------|--|
| <input type="checkbox"/> Very<br>Unlikely<br>1 | <input type="checkbox"/> Unlikely<br>2 | <input type="checkbox"/> Indifferent<br>3 | <input type="checkbox"/> Likely<br>4 | <input type="checkbox"/> Very<br>Likely<br>5 |
|--|--|---|--------------------------------------|--|

16.) How would you rate the PEC's efforts to get your feedback?

- |                                    |                                    |                                    |   |   |
|------------------------------------|------------------------------------|------------------------------------|---|---|
| <input type="checkbox"/> Poor<br>1 | <input type="checkbox"/> Fair<br>2 | <input type="checkbox"/> Good<br>3 | <input type="checkbox"/> Very Good<br>4 | <input type="checkbox"/> Excellent<br>5 |
|------------------------------------|------------------------------------|------------------------------------|---|---|



## 2002 Pacific Energy Center Measurement & Evaluation Program Participant Questionnaire

Interview Date:

Program Participant Interviewed
Name, Company:
Address:
Phone:
E-mail:

Independent M&E Reviewer/Interviewer
Name:
505 Sansome St., Suite 1600
San Francisco, CA 94111
Phone: 415/434-2600
E-mail:

**Questions for PEC Energy Resource Center/Library Services Participants**

17.) Do you have any specific suggestions as to how the PEC Energy Resource Center Library could be improved in the future?

Are there specific references you would like to see added to the PEC Energy Resource Center Library?

Reference Name

---



---



---



---



---

**Reviewer/Interviewer Notes**

**Signature**

Interviewer signature	Date	Checked by (initials)	Date
-----------------------	------	-----------------------	------



# DRAFT

## 2002 Pacific Energy Center Measurement & Evaluation Program Non-participant Questionnaire

Interview Date: March 24, 2003

**Program Non-participant Interviewed**  
 Jane Doe, Doe Incorporated  
 2000 Market Street, Rm 50  
 San Francisco, CA 94111  
 Phone: 415/555-5555  
 E-mail: janedoe@email.com

**Independent M&E Reviewer/Interviewer**  
 Lance Kincaid, Newcomb Anderson Associates  
 505 Sansome St., Suite 1600  
 San Francisco, CA 94111  
 Phone: 415/434-2600  
 E-mail: lance\_kincaid@emcorgroup.com

**Background for Follow-up Interviews**

The Pacific Energy Center (PEC) strives to reduce barriers to adoption of energy efficient design and technology.

In order to maintain continuous improvement of the services offered by the PEC, an independent consulting firm, Newcomb Anderson Associates, is conducting an evaluation of the services offered during 2002. This review has been mandated by the California Public Utilities Commission. All the information you provide is strictly confidential. Your contribution to this independent review process is necessary and appreciated in order to assess the overall levels of performance and success of the PEC.

**General Questions**

1.) How often do you or others at your business attend seminars, workshops or other training courses that address energy efficiency - such as those dealing with lighting, HVAC, energy efficient architectural design, building energy measurement, etc.?

once or more per week     
  two to three times per month     
  once per month     
  two to three times per year     
  once per year or less

2.) Are you aware of any of the following services offered by the Pacific Energy Center, located in San Francisco?

Workshops/Classes                       Architectural and Building Consulting Service  
 Diagnostic Tool Lending Service        Energy Resource Center/Library  
 Unaware of the PEC

If you are aware of the programs and services offered by the PEC, how have you been informed of the program?

Colleague       Web Page       Energy Center's Calendar  
 Email            Fax            PG&E Representative  
 Other: \_\_\_\_\_

3.) How likely are you to use the PEC services in the future?

Workshops/Classes	<input type="checkbox"/>	Very Likely	<input type="checkbox"/>	Likely	<input type="checkbox"/>	Not Likely
Diagnostic Tool Lending Service	<input type="checkbox"/>	Very Likely	<input type="checkbox"/>	Likely	<input type="checkbox"/>	Not Likely
Architectural and Building Consulting Serv	<input type="checkbox"/>	Very Likely	<input type="checkbox"/>	Likely	<input type="checkbox"/>	Not Likely
Energy Resource Center/Library	<input type="checkbox"/>	Very Likely	<input type="checkbox"/>	Likely	<input type="checkbox"/>	Not Likely

2002 Pacific Energy Center Measurement & Evaluation  
Program Non-participant Questionnaire



Interview Date: March 24, 2003

**Program Non-participant Interviewed**  
Jane Doe, Doe Incorporated  
2000 Market Street, Rm 50  
San Francisco, CA 94111  
Phone: 415/555-5555  
E-mail: janedoe@email.com

**Independent M&E Reviewer/Interviewer**  
Lance Kincaid, Newcomb Anderson Associates  
505 Sansome St., Suite 1600  
San Francisco, CA 94111  
Phone: 415/434-2600  
E-mail: lance\_kincaid@emcorgroup.com

4.) Which of the following most accurately describes your occupation?

- Building Operator
- Facility Manager
- Engineer
- Manufacturer/Vendor
- Energy Efficiency Program Implementer
- Developer/Owner
- Architect
- Lighting Designer/Consultant
- Energy Consultant
- Other: \_\_\_\_\_

5.) What is the primary focus of your business? If you are involved in multiple sectors, please indicate approximate percentages of time spent on each (e.g., 75% residential - 25% commercial).

- Residential
- Commercial
- Industrial
- Agricultural
- Institutional/Educational
- Other: \_\_\_\_\_

6.) Approximately how many people are employed at your business (include parent and affiliated companies in your estimate)? If you are a government/civil employee, estimate the size of your department.

- Less than 25
- 26 to 50
- 51 to 100
- 101 to 200
- 201 to 400
- 401 to 800
- 801 to 1,600
- greater than 1,600

7.) During 2002, have you participated in other incentive programs, such as the following?

- Express Efficiency
- Savings By Design
- Standard Performance Contract Program
- Other: \_\_\_\_\_



# DRAFT

## 2002 Pacific Energy Center Measurement & Evaluation Program Non-participant Questionnaire

Interview Date: March 24, 2003

<b>Program Non-participant Interviewed</b> Jane Doe, Doe Incorporated 2000 Market Street, Rm 50 San Francisco, CA 94111 Phone: 415/555-5555 E-mail: janedoe@email.com
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<b>Independent M&amp;E Reviewer/Interviewer</b> Lance Kincaid, Newcomb Anderson Associates 505 Sansome St., Suite 1600 San Francisco, CA 94111 Phone: 415/434-2600 E-mail: lance_kincaid@emcorgroup.com
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8.) Please indicate your reasoning for not participating in the PEC Program offerings:

- |  |   |
|--|---|
| <p><input type="checkbox"/> Unaware of Program</p> <p><input type="checkbox"/> Inconvenient service locations</p> <p><input type="checkbox"/> Services/resources available elsewhere</p> | <p><input type="checkbox"/> Inconvenient scheduling</p> <p><input type="checkbox"/> Services do not valued</p> <p><input type="checkbox"/> Other: _____</p> |
|--|---|

9.) Do you have any specific suggestions as to how the PEC could be improved in the future?

<b>Reviewer/Interviewer Notes</b>

<b>Signature</b>			
<u>Lance Kincaid</u>	<u>2/6/2003</u>	<u>EH</u>	<u>2/6/2003</u>
Interviewer signature	Date	Checked by (initials)	Date