INDIRECT IMPACT EVALUATION OF THE STATEWIDE ENERGY EFFICIENCY EDUCATION AND TRAINING PROGRAM

VOLUME II OF IV: FINAL REPORT

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STRUCTURE OF THE REPORT

This report is divided into four volumes. The information in this volume (Volume II) presents our detailed program description and findings by Energy Center. This includes evaluation results for reach, knowledge, attitudes, behavior change and energy savings by Center. Volume I provides an overview of the program evaluation, as well as findings from our indirect impact analysis. Volume I also contains appendices that include case studies, performance metrics and evaluability assessments. Volume III contains the survey instruments utilized for our analysis and Volume IV contains early feedback memos submitted to the CPUC during the evaluation process.

TABLE OF CONTENTS

TABLE OF TABLES

1. INTRODUCTION

This volume presents detailed findings regarding reach, knowledge, attitudes and behavior for each Energy Center. The report begins by providing a synopsis of each Center's reach as well as an assessment of whether the Center properly targeted its courses according to program goals. The following sections present an overview of the effects of each Center's efforts on participant knowledge, attitudes and behavior. Finally, we present gross and net energy savings for each Center.

Due to the variety and diversity of each Center's programmatic offerings, goals and target markets, we did not examine statistical differences between the Centers.[1] In this volume, we highlight some of the Centers that were found to have gains in program outcomes. However, we caution that these findings may be more indicative of the Center's intended design rather than their "success" in a particular area. Note that this volume does not include an explanation for each Center's results; instead we recommend looking to ongoing process evaluations and reviewing program goals to gain an understanding of the outcomes for each Center.

[1] Please find a discussion of this approach in Volume I.

2. CENTER REACH

This section is organized by IOU education and training program and Center. We characterize reach by the number of training sessions offered, the number of participants touched, and the length of participant interaction. In addition, this section comments on the market segments most frequently reached by each Center as well as the end-uses that were most frequently targeted through training sessions.

2.1 PGE2010: PG&E Education and Training Program Efforts

Pacific Energy Center

Over the three year evaluation period, this Center had a goal of offering 375 training sessions according to the program implementation plan. As

Table 1 shows, the Center exceeded this goal by 50 sessions offering 425 total training sessions. The Center offered 159 courses with unique content. These courses were attended by 8,196 people (16,541 total attendees) resulting in 106,714 total hours of training.

Table 1: Course Offerings and Participation Levels by End-Use: PEC, 2006-2008

End-Use	Unique Courses	Training Sessions	Unique Participants	Total Participants	Hours of Training
Commissioning	12	60	502	1,122	29,365
Renewables	7	92	3,103	3,953	20,501
Lighting	49	88	2,346	3,905	17,994
General/Other	21	41	1,920	2,410	12,862
HVAC	24	39	1,026	1,373	8,489
Title 24	12	41	1,106	1,394	7,885
Green Building/Envelope	20	37	1,363	1,735	5,313
Controls/EMS	10	18	321	387	2,652
Financial Incentives	2	5	162	164	992
Boilers/Furnaces/Water Heating	1	2	54	54	378
Motors/Pumps	1	2	44	44	284
Overall	**159**	**425**	**8,1962**	**16,541**	**106,714**

[2] The overall number represents the actual number of unique participants across all end-uses and not the sum of unique participants by end-use.

Nearly two-thirds of the training hours offered by PEC fall into three end-uses: commissioning, renewables and lighting. The emphasis on commissioning and lighting fits with the Center's focus on building operation and new construction. The lower number of unique participants and total participants in the commissioning courses is because the existing commissioning workshop series spans 12 sessions.

As shown in Table 2, a majority (56%) of participants in PEC's courses are market actors. Next are residential end-users (26%) followed by commercial end-users (18%) despite PEC's emphasis on commercial building operation and new construction. Residential end-users included people who took the course to learn something they could apply at home as well as those who took the course without a specific purpose in mind. This might account for so many residential end-users attending PEC courses.

Table 2: PEC Course Participant Type

Participant Type	Percentage	Participants
Market Actors	56%	4,162
Residential End-Users	26%	1,335
Commercial End-Users	18%	1,962
Total	**100%**	**7,458**[3]

Energy Training Center

Over the three year evaluation period, ETC had a goal of offering 360 training sessions according to the program implementation plan. As Table 3 shows, the Center exceeded this goal by 413 sessions offering 773 total training sessions. ETC offered 141 courses with unique content. These courses were attended by 9,650 people (16,745 total attendees) resulting in 118,936 total hours of training.

[3] For participant population estimates based on survey results, we adjust the total number of participants to account for ineligible respondents. Our survey efforts revealed that approximately 9% of the participants were ineligible to be included in our evaluation for a variety of reasons. Some were course instructors or energy center employees. Others registered for the course but were unable to attend.

Table 3: Course Offerings and Participation Levels by End-Use: ETC, 2006-2008

End-Use	Unique Courses	Training Sessions	Unique Participants	Total Participants	Hours of Training
Green Building/Envelope	26	114	1,958	3,077	36,114
HVAC	25	279	2,728	4,423	29,121
Renewables	10	73	1,849	2,532	18,860
General/Other	24	60	1,219	1,389	8,397
Title 24	11	61	1,250	1,429	6,582
Boilers/Furnaces/Water Heating	10	40	831	980	5,760
Lighting	9	37	866	996	4,171
Financial Incentives	7	52	760	816	2,520
Commercial Cooking/ Foodservice/Refrigeration	6	15	371	386	2,054
Motors/Pumps	6	10	185	195	1,819
Pools	3	22	228	237	1,538
Compressed Air	2	5	148	153	1,224
Controls/EMS	2	5	130	132	777
Overall	**141**	**773**	**9,650**[4]	**16,745**	**118,936**

Over half of the training hours offered by ETC fall into one of two end-uses: green building/envelope and HVAC. This distribution of training hours is consistent with the Center's emphasis on training market actors who work in the residential sector.

As shown in Table 4, nearly two-thirds (65%) of ETC course participants are market actors. This too is consistent with the Center's target markets.

Table 4: ETC Course Participant Type

Participant Type	Percentage	Participants
Market Actors	65%	5,690
Commercial End-Users	22%	1,888
Residential End-Users	14%	1,203
Total	**100%**	**8,782**[5]

[4] The overall number represents the unique number of participants across all end-uses and not the sum of unique participants by end-use as there are course-takers who attended courses in multiple end-uses.

[5] For participant population estimates based on survey results, we adjust the total number of participants to account for ineligible respondents. Our survey efforts revealed that approximately 9% of the participants were ineligible to be included in our evaluation for a variety of reasons. Some were course instructors or energy center employees. Others registered for the course but were unable to attend.

Food Service Training Center

Over the three year evaluation period, FSTC had a goal of offering 150 training sessions according to the program implementation plan. As Table 5 shows, our evaluation concluded the Center conducted 59 sessions, falling short of their goal by 91 sessions. FSTC offered 22 unique courses during the evaluation period. These courses were attended by 1,515 unique attendees (1,902 overall) resulting in 3,920 hours of training. Not surprisingly, nearly all of the training hours offered by FSTC are in commercial cooking/foodservice/ refrigeration.

Table 5: Course Offerings and Participation Levels by End-Use: FSTC, 2006-2008

End-Use	Unique Courses	Training Sessions	Unique Participants	Total Participants	Hours of Training
Commercial Cooking/ Foodservice/Refrigeration	20	48	1,341	1,643	3,512
Lighting	1	6	130	133	215
Boilers/Furnaces/Water Heating	1	5	120	126	194
Overall	**22**	**59**	**1,5156**	**1,902**	**3,920**

The FSTC's specific emphasis on the food service industry is reflected in the types of participants that attend FSTC courses. As Table 6 shows, two-thirds (66%) of FSTC participants are market actors, while another 30% are commercial end-users.

Table 6: FSTC Course Participant Type

Participant Type	Percentage	Participants
Market Actors	66%	915
Commercial End-Users	29%	405
Residential End-Users	4%	58
Total	**100%**	**1,379**[7]

[6] The overall number represents the actual number of unique participants across all end-uses and not the sum of unique participants by end-use.

[7] For participant population estimates based on survey results, we adjust the total number of participants to account for ineligible respondents. Our survey efforts revealed that approximately 9% of the participants were ineligible to be included in our evaluation for a variety of reasons. Some were course instructors or energy center employees. Others registered for the course but were unable to attend.

2.2 SCE2513: SCE Education, Training and Outreach Program Efforts

Customer Technology Application Center

Over the three year evaluation period, CTAC, in conjunction with AgTAC, had a goal of offering 534 training sessions according to the program implementation plan. As Table 7 shows, the Center offered 500 sessions that when combined with AgTAC's 222 sessions, exceeded this goal by 188 sessions. The Center offered 116 courses with unique content. These courses were attended by 7,291 people (16,850 total attendees) resulting in 96,927 total hours of training.

Table 7: Course Offerings and Participation Levels by End-Use: CTAC, 2006-2008

End-Use	Unique Courses	Training Sessions	Unique Participants	Total Participants	Hours of Training
General/Other	24	115	2,451	3,546	23,549
HVAC	21	89	2,019	3,997	22,496
Lighting	16	89	1,705	2,678	11,551
Motors/Pumps	8	38	912	1,318	9,107
Green Building/Envelope	11	20	779	953	5,150
Title 24	9	31	700	936	4,713
Controls/EMS	8	23	578	725	4,338
Renewables	1	34	1,025	1,068	4,272
Water Management	3	6	280	380	4,050
Compressed Air	4	13	336	373	2,804
Commercial Cooking/ Foodservice/Refrigeration	5	13	276	372	2,749
Financial Incentives	3	26	380	406	1,495
Commissioning	2	2	71	72	448
Boilers/Furnaces/Water Heating	1	1	26	26	208
Overall	**116**	**500**	**7,291**[8]	**16,850**	**96,927**

Over two-thirds (69%) of the training hours offered by CTAC fall into one of four end-uses: general/other, HVAC, lighting or motors/pumps. Given CTAC's focus on market actors, this is an appropriate mix of course offerings.

Nearly half (48%) of CTAC participants are market actors, while another 41% are commercial end-users. This also reflects the Center's emphasis on commercial and industrial customers.

[8] The overall number represents the actual number of unique participants across all end-uses and not the sum of unique participants by end-use.

Table 8: CTAC Course Participant Type

Participant Type	Percentage	Participants
Market Actors	48%	3,198
Commercial End-Users	41%	2,687
Residential End-Users	11%	750
Total	**100%**	**6,635**[9]

Agricultural Technology Application Center

During the three year evaluation period, AgTAC, in conjunction with CTAC, had a goal of offering 534 training sessions according to the program implementation plan. As Table 9 shows, the Center offered 222 sessions that when combined with CTAC's 500 sessions, exceeded this goal by 188 sessions. AgTAC offered 105 unique courses to 1,838 unique attendees (3,686 overall attendees) for a total for 22,414 training hours.

Table 9: Course Offerings and Participation Levels by End-Use: AgTAC, 2006-2008

End-Use	Unique Courses	Training Sessions	Unique Participants	Total Participants	Hours of Training
HVAC	16	44	479	810	5,564
General/Other	19	41	593	679	4,273
Motors/Pumps	15	36	484	592	3,723
Controls/EMS	8	22	204	300	2,058
Lighting	21	35	331	456	1,743
Green Building/Envelope	6	9	151	182	1,237
Renewables	4	6	96	156	1,004
Commercial Cooking/ Foodservice/Refrigeration	2	6	99	117	934
Title 24	7	8	138	173	771
Compressed Air	1	5	65	67	530
Boilers/Furnaces/Water Heating	3	4	72	119	434
Financial Incentives	3	6	32	35	147
Overall	**105**	**222**	**1,838**[10]	**3,686**	**22,414**

AgTAC offers courses in end-uses that are appropriate for the Agricultural industry. In particular, AgTAC offers a considerable number of training hours in motors/pumps and controls/EMS, both of which are particularly useful to the industry.

[9] For participant population estimates based on survey results, we adjust the total number of participants to account for ineligible respondents. Our survey efforts revealed that approximately 9% of the participants were ineligible to be included in our evaluation for a variety of reasons. Some were course instructors or energy center employees. Others registered for the course but were unable to attend.

[10] The overall number represents the unique number of participants across all end-uses and not the sum of unique participants by end-use as there are course-takers who attended courses in multiple end-uses.

As shown in Table 10, nearly half (46%) of AgTAC participants are commercial end-users. Another 39% of participants are market actors. This is consistent with the Center's focus on agricultural market actors and end-users.

Table 10: AgTAC Course Participant Type

Participant Type	Percentage	Participants
Commercial End-Users	46%	656
Market Actors	39%	776
Residential End-Users	15%	243
Total	**100%**	**1,673**[11]

Technology and Test Centers

Over the three year evaluation period, TTC was responsible for eight unique courses. 864 unique attendees (979 overall attendees) took advantage of these courses resulting in 6,280 hours of training.

Table 11: Course Offerings and Participation Levels by End-Use: TTC, 2006-2008

End-Use	Unique Courses	Training Sessions	Unique Participants	Total Participants	Hours of Training
Lighting	2	25	663	718	5,026
Commercial Cooking/ Foodservice/Refrigeration	3	8	131	135	750
HVAC	3	4	109	126	504
Overall	**8**	**37**	**864**[12]	**979**	**6,280**

Nearly all of the training hours offered by TTC are in lighting. The remaining two end-uses in which TTC offers training are commercial cooking/foodservice/refrigeration and HVAC. This is directly in line with TTC's specific focus on these end-uses.

TTC's focus on the commercial and industrial market, specifically on process refrigeration, lighting and HVAC, is also reflected in the type of participants that attend TTC's courses. A majority (63%) of the Center's course participants are commercial end-users, followed by market actors (34%).

[11] For participant population estimates based on survey results, we adjust the total number of participants to account for ineligible respondents. Our survey efforts revealed that approximately 9% of the participants were ineligible to be included in our evaluation for a variety of reasons. Some were course instructors or energy center employees. Others registered for the course but were unable to attend.

[12] The overall number represents the actual number of unique participants across all end-uses and not the sum of unique participants by end-use.

Table 12: TTC Course Participant Type

Participant Type	Percentage	Participants
Commercial End-Users	63%	270
Market Actors	34%	495
Residential End-Users	3%	23
Total	**100%**	**786**[13]

2.3 SCG3503: SCG Education and Training Program

SCG Energy Resource Center

Over the three year evaluation period, the SCG ERC had a goal of offering 307 training sessions according to the program implementation plan. As Table 13 shows, the Center exceeded this goal by 51 sessions offering 358 training sessions. The Center saw 10,244 unique course attendees (28,763 total attendees) participate in 119 unique courses resulting in 149,009 hours of training.

Table 13: Course Offerings and Participation Levels by End-Use: SCG ERC, 2006-2008

End-Use	Unique Courses	Training Sessions	Unique Participants	Total Participants	Hours of Training
HVAC	16	143	2,388	14,225	55,834
Green Building/Envelope	20	27	2,762	4,211	31,117
Boilers/Furnaces/Water Heating	15	53	1,566	2,638	28,754
Title 24	5	35	912	1,623	7,158
General/Other	21	28	1,078	1,276	6,863
Commercial Cooking/ Foodservice/Refrigeration	19	34	1,552	2,206	5,683
Motors/Pumps	3	6	312	353	2,877
Commissioning	5	5	328	525	2,305
CHP/Gas Engines	5	5	297	363	2,194
Water Management	4	4	315	332	1,933
Renewables	1	2	238	249	1,915
Compressed Air	2	5	150	155	1,353
Lighting	1	9	245	262	1,024
Controls/EMS	1	1	7	7	-
Financial Incentives	1	1	337	338	-
Overall	**119**	**358**	**10,244**[14]	**28,763**	**149,009**

[13] For participant population estimates based on survey results, we adjust the total number of participants to account for ineligible respondents. Our survey efforts revealed that approximately 9% of the participants were ineligible to be included in our evaluation for a variety of reasons. Some were course instructors or energy center employees. Others registered for the course but were unable to attend.

Over three-quarters (78%) of the training hours offered by SCG ERC fall into three end-uses: HVAC, green building/envelope and boilers/furnaces/water heating. The large numbers under HVAC are driven by the NATE (North American Training Excellence) training courses offered by the SCG ERC. These are a series of eight courses which prepare HVAC professionals to take the NATE certification exam.

The SCG ERC has a broad focus on both residential and non-residential market actors and end-users, however a majority of the Center's course participants are market actors (54%) and commercial end-users (39%). Residential end-users make up a small percentage (7%) of the overall course participant profile of the Center.

Table 14: SCG ERC Course Participant Type

Participant Type	Percentage	Participants
Market Actors	54%	4,997
Commercial End-Users	39%	3,654
Residential End-Users	7%	681
Total	**100%**	**9,322**[15]

2.4 SDGE3009: California Center for Sustainable Energy/Energy Resource Center Partnership

Energy Resource Center

Over the three year evaluation period, the SDG&E had a goal of offering 50 training sessions according to the program implementation plan. As Table 15 shows, the SDG&E exceeded this goal by 83 sessions offering 133 sessions. The Center offered 100 unique courses. These courses were attended by 3,252 unique individuals (9,518 total attendees) resulting in 39,549 hours of training. In line with the Center's primary focus, just over half of all training hours offered by the SDG&E dealt with HVAC.

[14] The overall number represents the actual number of unique participants across all end-uses and not the sum of unique participants by end-use.

[15] For participant population estimates based on survey results, we adjust the total number of participants to account for ineligible respondents. Our survey efforts revealed that approximately 9% of the participants were ineligible to be included in our evaluation for a variety of reasons. Some were course instructors or energy center employees. Others registered for the course but were unable to attend.

Table 15: Course Offerings and Participation Levels by End-Use: SDG&E, 2006-2008

End-Use	Unique Courses	Training Sessions	Unique Participants	Total Participants	Hours of Training
HVAC	37	58	1,592	5,133	21,254
Boilers/Furnaces/Water Heating	10	12	473	825	4,117
General/Other	11	13	553	800	3,168
Motors/Pumps	5	5	271	320	2,182
Title 24	5	10	307	376	2,139
Lighting	8	8	388	506	1,852
Financial Incentives	8	9	503	596	1,685
Controls/EMS	3	3	213	232	1,116
Green Building/Envelope	5	5	249	259	710
Compressed Air	1	2	202	225	675
Commissioning	4	4	132	143	432
Commercial Cooking/ Foodservice/Refrigeration	2	2	71	73	219
Pools	1	2	26	30	-
Overall	**100**	**133**	**3,252**[16]	**9,518**	**39,549**

As shown in Table 16, most of the course participants at the SDG&E are either market actors (56%) or commercial end-users (41%). Only a small percent (3%) of participants are residential end-users. This is consistent with the Center's focus on non-residential market actors and end-users.

Table 16: SDG&E Course Participant Type

Participant Type	Percentage	Participants
Market Actors	56%	1,669
Commercial End-Users	41%	1,216
Residential End-Users	3%	74
Total	**100%**	**2,959**[17]

[16] The overall number represents the actual number of unique participants across all end-uses and not the sum of unique participants by end-use.

[17] For participant population estimates based on survey results, we adjust the total number of participants to account for ineligible respondents. Our survey efforts revealed that approximately 9% of the participants were ineligible to be included in our evaluation for a variety of reasons. Some were course instructors or energy center employees. Others registered for the course but were unable to attend.

California Center for Sustainable Energy

Over the three year evaluation period, the CCSE had a goal of offering 150 training sessions according to IOU quarterly reports. As Table 17 shows, our evaluation concluded the Center conducted 74 sessions, falling short of their goal by 76 sessions. The Center offered 70 unique courses during the evaluation period. 1,899 unique attendees (3,013 overall attendees) took advantage of these courses resulting in 9,166 hours of training.

Table 17: Course Offerings and Participation Levels by End-Use: CCSE, 2006-2008

End-Use	Unique Courses	Training Sessions	Unique Participants	Total Participants	Hours of Training
General/Other	21	25	892	1,212	3,664
Green Building/Envelope	12	12	500	610	2,173
Lighting	13	13	302	378	869
Renewables	4	4	165	176	652
HVAC	7	7	205	224	555
Commissioning	3	3	102	110	336
Title 24	1	1	64	64	320
Financial Incentives	2	2	92	93	223
Controls/EMS	2	2	54	58	140
Water Management	1	1	30	30	90
Boilers/Furnaces/Water Heating	2	2	22	22	65
Compressed Air	1	1	17	17	51
Commercial Cooking/ Foodservice/Refrigeration	1	1	19	19	29
Overall	**70**	**74**	**1,899**[18]	**3,013**	**9,166**

A majority (64%) of training hours offered by CCSE fall into one of two end-uses: general/other or green building/envelope. "General" courses often covered more than one-end use area, as would be true of courses that focused on the whole building. Such courses, along with the green building/envelope courses, are consistent with the Center's focus on green building and green design.

Among all nine Centers, CCSE has the highest percentage of residential end-users among its participant population (32%). This is likely due to the Center's emphasis on three areas that are appealing to the residential customer: (1) clean and renewable distributed generation, (2) green construction and, (3) energy efficiency.

[18] The overall number represents the actual number of unique participants across all end-uses and not the sum of unique participants by end-use.

Table 18: CCSE Course Participant Type

Participant Type	Percentage	Participants
Market Actors	49%	842
Residential End-Users	32%	335
Commercial End-Users	19%	551
Total	**100%**	**1,728**[19]

[19] For participant population estimates based on survey results, we adjust the total number of participants to account for ineligible respondents. Our survey efforts revealed that approximately 9% of the participants were ineligible to be included in our evaluation for a variety of reasons. Some were course instructors or energy center employees. Others registered for the course but were unable to attend.

3. CENTER KNOWLEDGE AND ATTITUDES

This section describes the effects of each Center's training sessions on participant knowledge and attitudes. We present the knowledge increases associated with each Center, the specific type of knowledge that participants gained, and the effect that this knowledge had on attitude change.

Our findings indicate that the majority of respondents achieved moderate to high levels of knowledge increases as a result of the program across all Centers. In particular, 46% of PG&E's ETC and SCE's TTC respondents achieved high degrees of knowledge. Table 19 identifies each Center's knowledge increase using a scale of high, moderate, low and no increase.

Table 19: Knowledge Increase by Energy Center

Knowledge	High	Moderate	Low	No Increase
PEC (n=1,260)	41%	46%	12%	1%
ETC (n=1,246)	46%	41%	11%	1%
FSTC (n=119)	44%	48%	8%	0%
CTAC (n=1,057)	40%	48%	10%	2%
AgTAC (n=166)	40%	43%	16%	1%
TTC (n=35)	46%	46%	6%	3%
SGC ERC (n=810)	42%	44%	11%	2%
SDG&E ERC (n=325)	36%	47%	14%	2%
CCSE (n=190)	42%	42%	14%	3%

To further investigate the impact of the courses on participants' knowledge of energy efficiency topics, we asked respondents about several areas that had the potential to be impacted by the courses. The questions covered subjects such as tools and techniques used in their work or implementing energy efficient solutions. We used a 7-point scale in which 1 indicated "strongly disagree" and 7, "strongly agree." Table 19 displays each specific area that was impacted by Center by indicating the percent of respondents who strongly agreed with each statement (i.e. gave a rating of 6 or 7).

Table 20: Percentage of Respondents with a High Level of Agreement (6 or 7) That the Course Impacted Specific Areas of Knowledge by Energy Center

Top 2 Box (Rated 6,7)	PEC	ETC	FSTC	CTAC	AgTAC	TTC	SCG ERC	SDG&E ERC	CCSE
More confident that EE steps will result in expected savings***	48%	51%	49%	49%	44%	15 of 22	49%	44%	38%
Better understand how to improve EE at my facility***	45%	51%	57%	50%	42%	14 of 22	48%	47%	36%
More familiar with tools/techniques to enhance client services**	44%	53%	54%	48%	48%	7 of 12	48%	46%	43%
More confident when making EE recommendations to clients that savings will actually occur**	40%	53%	51%	53%	37%	7 of 11	46%	44%	42%
Better able to implement EE solutions	40%	50%	47%	44%	41%	49%	45%	42%	41%
More aware of utility sponsored EE programs	45%	50%	55%	53%	49%	51%	49%	50%	42%

*Note: Bases vary by question and center. Bases less than 30 are indicated as numbers not percentages.
** Asked of market actors only.
*** Asked of commercial end-users only.

Our evaluation also reviewed the impact of course work on attitudinal change. According to our results, the courses changed how participants think and feel about energy efficiency opportunities.

Table 21 shows the percentage of participants who indicated a 6 or 7 on a 7-point scale where 1 represented "not at all" and 7 "a great deal" when asked to rate the impact the courses had on their thinking about energy efficiency opportunities.

Table 21: Course Impact on Attitudinal Change by Energy Center

Top 2 Box (Rated 6,7)	PEC	ETC	FSTC	CTAC	AgTAC	TTC	SGC ERC	SDG&E ERC	CCSE
Thinks Differently About EE Opportunities	33%	41%	45%	42%	30%	49%	40%	36%	31%
Wants to Make EE Changes	40%	44%	50%	46%	43%	60%	45%	37%	43%

*Note: Bases vary by question and center.

4. CENTER BEHAVIORS

In addition to changes in knowledge and attitudes, we examined behavior changes among end-users and market actors by Center. Our results show that the percentage of participants taking action varies by Center.

Table 22: Percent of Participants who took Energy Saving Behaviors by Center*

Percent Taking Action	PEC	ETC	FSTC	CTAC	AgTAC	TTC	SGC ERC	SDG&E ERC	CCSE
Residential End-Users	35%	46%	2 of 5	46%	10 of 24	0 of 1	58%	3 of 8	57%
Commercial End-Users	76%	72%	79%	80%	78%	21 of 22	73%	83%	86%
Market Actors	65%	75%	79%	70%	73%	11 of 12	73%	69%	72%

*Note: The base for each cell is the number of respondents in that center. Bases less than 30 are indicated as numbers not percentages.

Residential customers are less likely to have taken action (ranging from 35% to 58%), whereas a larger percentage of commercial end-users and market actors took action at each Center (ranging 72% to 86%).

5. CENTER ENERGY SAVINGS

This section presents the energy savings attributable to each Center as a result of the changes in end-users behavior change noted in the previous section. We present gross and net savings estimates for each Center. Overall savings are given as well as savings for each end-use area in which participants took action.

We calculated savings for surveyed participants who took action in IOU territory and did not receive an IOU rebate. These savings estimates under represent program savings attributable to end-user participants because they do not include Wave 1 participants, participants who did not have technical knowledge of their actions to answer the detailed questions needed to calculate savings, and participants who did not participate in the survey. To get an estimate of the larger program impact, we extrapolated savings from the surveyed participants to the larger participant population whose actions could be attributed to the Energy Centers. The savings estimates for the Wave 2 surveyed respondents first, and then present these larger extrapolated savings estimates. The extrapolated savings represent what could be expected of the population of end-users who took courses at each Center. Additional information on the methods we used to estimate end-user energy savings is available in Volume I, Section 9 and Appendix F.

5.1 PGE2010: PG&E Education and Training Program Efforts

Table 23: Gross Energy Savings: PEC Surveyed End-Users

PEC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	15	4,640,741	309,383	32,235	1,189	79	11	143,416	9,561	892
Lighting	41	2,541,691	61,992	1,164	351	9	0	-16,455	-401	-3
Renewables	26	120,567	4,637	5,462	63	2	3	2,551	98	0
Green Building/Envelope	9	32,219	3,580	128	21	2	0	579	64	2
Totals	**91**	**7,335,218**	**80,607**	**2,404**	**1,624**	**18**	**1**	**130,091**	**1,430**	**0**

Table 24: Net Energy Savings: PEC Surveyed End-Users

PEC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	15	3,497,849	233,190	26,326	896	60	9	108,082	7,205	749
Lighting	41	1,785,072	44,627	839	210	5	0	-9,263	-232	-2
Renewables	26	83,513	3,341	3,457	44	2	2	2,096	81	0
Green Building/Envelope	9	15,447	1,716	117	11	1	0	222	25	1
Totals	**91**	**5,381,881**	**60,471**	**1,905**	**1,161**	**13**	**0**	**101,137**	**1,124**	**0**

Table 25: Gross and Net Energy Savings: PEC All End-Users

PEC		Annual MWh		Peak kW		Annual Therms	
End-Use	Participants	Gross	Net	Gross	Net	Gross	Net
HVAC	490	60,647	45,711	15,539	11,705	1,874,212	1,412,451
Lighting	90	30,380	21,870	4,192	2,576	-196,680	-113,486
Renewables	196	1,250	900	657	471	26,449	21,733
Green Building/Envelope	270	322	154	208	112	5,775	2,215
Totals	**1,045**	**92,599**	**68,636**	**20,595**	**14,864**	**1,709,756**	**1,322,913**

Note: These net electric and gas savings equate to approximately 33,500[20] and 6,500[21] metric tons of avoided carbon dioxide (CO_2) emissions.

Table 26: Gross Energy Savings: ETC Surveyed End-Users

ETC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
Renewables	14	4,281,276	305,805	6,983	2,294	164	4	1,528	109	0
HVAC	15	3,866,163	257,744	2,883	5,215	348	1	71,808	4,787	53
Boilers/Water Heating	8	2,625,000	328,125	0	525	66	0	-70,406	-8,801	65
Compressed Air	7	2,369,925	338,561	93,091	459	66	21	7	1	0
Lighting	23	894,348	38,885	5,643	84	4	0	-3,158	-137	-19
Green Building/Envelope	26	218,714	8,412	241	83	3	0	2,706	104	17
Motors/Pumps	1	206,707	206,707	206,707	28	28	28	0	0	0
Controls/EMS	1	46,604	46,604	46,604	3	3	3	222	222	222
Pools	1	1,400	1,400	1,400	5	5	5	4,557	4,557	4,557
Totals	**96**	**14,510,136**	**151,147**	**1,680**	**8,697**	**91**	**1**	**7,264**	**76**	**0**

[20] This value is calculated using EPA annual non-baseload output emission rates for the WECC California subregion of 1,083.02 lb/MWh and 2,204.6 lbs CO2/metric ton. (http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf)

[21] This value is calculated from the EPA estimate of 0.005 metric tons CO2/therm. (http://www.epa.gov/RDEE/energy-resources/refs.html)

Table 27: Net Energy Savings: ETC Surveyed End-Users

ETC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	15	3,711,432	247,429	2,354	4,693	313	1	70,352	4,690	42
Renewables	14	3,256,278	250,483	5,173	1,745	134	3	1,175	84	0
Boilers/Water Heating	8	1,760,938	220,117	0	352	44	0	-47,008	-5,876	51
Compressed Air	7	1,697,834	242,548	60,356	305	44	10	6	1	0
Lighting	23	674,902	29,344	3,786	66	3	0	-2,723	-118	-9
Green Building/Envelope	26	188,818	7,262	235	71	3	0	2,394	92	16
Motors/Pumps	1	150,724	150,724	150,724	21	21	21	0	0	0
Controls/EMS	1	40,972	40,972	40,972	3	3	3	195	195	195
Pools	1	1,068	1,068	1,068	4	4	4	3,475	3,475	3,475
Totals	**96**	**11,482,965**	**120,873**	**876**	**7,260**	**76**	**0**	**27,866**	**290**	**0**

Table 28: Gross and Net Energy Savings: ETC All End-Users

ETC		Annual MWh		Peak kW		Annual Therms	
End-Use	Participants	Gross	Net	Gross	Net	Gross	Net
HVAC	230	59,192	56,823	79,836	71,857	1,077,104	1,099,396
Renewables	184	56,183	46,019	30,105	24,656	15,419	20,049
Compressed Air	73	24,880	17,825	4,821	3,200	65	74
Boilers/Water Heating	73	24,114	16,176	4,823	3,235	-431,819	-646,757
Lighting	276	10,716	8,087	1,012	795	-32,622	-37,837
Motors/Pumps	37	7,595	5,538	1,044	761	0	0
Green Building/Envelope	322	2,705	2,335	1,022	882	29,604	33,463
Controls/EMS	9	428	376	28	24	1,792	2,038
Pools	28	39	29	149	113	95,755	125,580
Totals	**1,231**	**185,852**	**153,208**	**122,838**	**105,525**	**755,297**	**596,006**

Note: These net electric and gas savings equate to approximately 75,000[22] and 3,000[23] metric tons of avoided carbon dioxide (CO_2) emissions.

Table 29: Gross Energy Savings: FSTC Surveyed End-Users

FSTC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
Commercial Cooking/Refrigeration	3	371,974	123,991	156,406	54	18	17	3,944	1,315	1,208
Totals	**3**	**371,974**	**123,991**	**156,406**	**54**	**18**	**17**	**3,944**	**1,315**	**1,208**

[22] This value is calculated using EPA annual non-baseload output emission rates for the WECC California subregion of 1,083.02 lb/MWh and 2,204.6 lbs CO2/metric ton. (http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf)

[23] This value is calculated from the EPA estimate of 0.005 metric tons CO2/therm. (http://www.epa.gov/RDEE/energy-resources/refs.html)

Table 30: Net Energy Savings: FSTC Surveyed End-Users

FSTC		Annual kWh			Peak kW			Annual Therms		
End-Use	**Participants**	**Total**	**Mean**	**Median**	**Total**	**Mean**	**Median**	**Total**	**Mean**	**Median**
Commercial Cooking/Refrigeration	3	342,644	114,215	132,945	51	17	15	3,592	1,197	1,208
Totals	**3**	**342,644**	**114,215**	**132,945**	**51**	**17**	**15**	**3,592**	**1,197**	**1,208**

Table 31: Gross and Net Energy Savings: FSTC All End-Users

FSTC		Annual MWh		Peak kW		Annual Therms	
End-Use	**Participants**	**Gross**	**Net**	**Gross**	**Net**	**Gross**	**Net**
Commercial Cooking/Refrigeration	193	23,961	22,072	3,466	3,304	254,045	231,367
Totals	**193**	**23,961**	**22,072**	**3,466**	**3,304**	**254,045**	**231,367**

Note: These net electric and gas savings equate to approximately 12,000[24] and 1,000[25] metric tons of avoided carbon dioxide (CO_2) emissions.

[24] This value is calculated using EPA annual non-baseload output emission rates for the WECC California subregion of 1,083.02 lb/MWh and 2,204.6 lbs CO2/metric ton. (http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf)

[25] This value is calculated from the EPA estimate of 0.005 metric tons CO2/therm. (http://www.epa.gov/RDEE/energy-resources/refs.html)

5.2 SCE2513: SCE Education, Training and Outreach Program Efforts

Table 32: Gross Energy Savings: CTAC Surveyed End-Users

CTAC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
Lighting	30	10,168,479	338,949	6903	1,039	35	0	-119,162	-3,972	-16
Water Management	4	3,875,426	968,857	27224	392	98	31	0	0	0
HVAC	21	2,956,470	140,784	8854	736	35	6	43,393	2,066	98
Compressed Air	3	2,770,615	923,538	946235	556	185	222	1	0	0
Renewables	8	2,431,205	303,901	9071	1,282	160	5	4,038	505	0
Controls/EMS	8	443,985	55,498	12092	74	9	1	-724	-90	0
Green Building/Envelope	9	38,726	4,303	357	14	2	0	783	87	0
Motors/Pumps	3	6,508	2,169	807	5	2	1	0	0	0
Totals	**86**	**22,691,413**	**263,854**	**6017**	**4,097**	**48**	**1**	**-71,671**	**-833**	**0**

Table 33: Net Energy Savings: CTAC Surveyed End-Users

CTAC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
Lighting	30	7,129,249	237,642	5,968	716	24	0	-83,300	-2,777	-12
Water Management	4	2,939,372	734,843	20,898	294	74	22	0	0	0
HVAC	21	2,447,024	116,525	5,386	614	29	4	37,091	1,766	81
Compressed Air	3	2,228,644	742,881	804,299	446	149	188	1	0	0
Renewables	8	1,627,563	203,445	6,262	858	107	3	2,821	403	0
Controls/EMS	8	303,573	37,947	9,934	51	6	1	-590	-74	0
Green Building/Envelope	9	35,913	4,489	299	14	2	0	421	53	0
Motors/Pumps	3	5,935	1,978	736	4	1	1	0	0	0
Totals	**86**	**16,717,272**	**196,674**	**5,109**	**2,998**	**35**	**1**	**-43,555**	**-519**	**0**

Table 34: Gross and Net Energy Savings: CTAC All End-Users

CTAC		Annual MWh		Peak kW		Annual Therms	
End-Use	Participants	Gross	Net	Gross	Net	Gross	Net
Lighting	333	112,732	79,038	11,515	7,943	-1,321,087	-923,498
Compressed Air	25	41,771	31,682	4,569	3,665	8	6
Renewables	80	36,419	30,143	12,833	8,591	40,410	32,272
Green Building/Envelope	80	24,333	16,290	127	136	6,970	4,218
Water Management	43	22,753	18,302	4,221	3,170	0	0
Controls/EMS	62	3,418	2,337	566	391	-5,571	-4,544
HVAC	259	345	359	9,071	7,565	534,526	456,902
Motors/Pumps	49	107	97	75	69	0	0
Totals	**930**	**241,877**	**178,249**	**42,976**	**31,530**	**-744,743**	**-434,643**

Note: These net electric and gas savings equate to approximately 87,500[26] and -2,000[27] metric tons of avoided carbon dioxide (CO_2) emissions.

[26] This value is calculated using EPA annual non-baseload output emission rates for the WECC California subregion of 1,083.02 lb/MWh and 2,204.6 lbs CO2/metric ton. (http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf)

[27] This value is calculated from the EPA estimate of 0.005 metric tons CO2/therm. (http://www.epa.gov/RDEE/energy-resources/refs.html)

Table 35: Gross Energy Savings: AgTAC Surveyed End-Users

AGTAC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	3	705,309	235,103	113,450	219	73	19	24,045	8,015	6,143
Lighting	5	371,881	74,376	68,105	18	4	0	-772	-154	-178
Motors/Pumps	1	112,306	112,306	112,306	54	54	54	-	-	-
Controls/EMS	3	76,445	25,482	18,801	0	0	0	716	239	-12
Boilers/Water Heating	1	17,552	17,552	17,552	2	2	2	43,861	43,861	43,861
Green Building/Envelope	4	-1,773	-443	57	-1	0	0	51	13	7
Totals	**17**	**1,281,720**	**75,395**	**17,552**	**292**	**17**	**0**	**67,902**	**3,994**	**-**

Table 36: Net Energy Savings: AgTAC Surveyed End-Users

AGTAC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	3	671,274	223,758	79,415	213	71	13	22,202	7,401	4,300
Lighting	5	266,358	53,272	45,687	12	2	0	-560	-112	-125
Motors/Pumps	1	95,928	95,928	95,928	46	46	46	-	-	-
Controls/EMS	3	68,736	22,912	13,630	0	0	0	751	250	-8
Boilers/Water Heating	1	7,021	7,021	7,021	1	1	1	17,545	17,545	17,545
Green Building/Envelope	4	-837	-209	57	0	0	0	92	23	7
Totals	**17**	**1,108,480**	**65,205**	**7,021**	**272**	**16**	**0**	**40,029**	**2,355**	**-**

Table 37: Gross and Net Energy Savings: AgTAC All End-Users

AGTAC		Annual MWh		Peak kW		Annual Therms	
End-Use	Participants	Gross	Net	Gross	Net	Gross	Net
HVAC	36	8,352	7,949	2,591	2,524	284,722	262,900
Motors/Pumps	43	4,787	4,089	2,289	1,955	-	-
Lighting	64	4,756	3,406	234	157	-9,871	-7,165
Controls/EMS	43	1,086	977	5	3	10,175	10,664
Boilers/Water Heating	7	125	50	14	6	311,618	124,647
Green Building/Envelope	43	-19	-9	-8	-3	547	981
Totals	**234**	**19,087**	**16,462**	**5,126**	**4,642**	**597,191**	**392,027**

Note: These net electric and gas savings equate to approximately 8,000[28] and 2,000[29] metric tons of avoided carbon dioxide (CO_2) emissions.

Table 38: Gross Energy Savings: TTC Surveyed End-Users

TTC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
Lighting	5	346,583	69,317	13,236	113	23	2	-893	-179	-5
Totals	**5**	**346,583**	**69,317**	**13,236**	**113**	**23**	**2**	**-893**	**-179**	**-5**

Table 39: Net Energy Savings: TTC Surveyed End-Users

TTC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
Lighting	5	290,352	58,070	12,408	96	19	2	-739	-152	-5
Totals	**5**	**290,352**	**58,070**	**12,408**	**96**	**19**	**2**	**-739**	**-152**	**-5**

[28] This value is calculated using EPA annual non-baseload output emission rates for the WECC California subregion of 1,083.02 lb/MWh and 2,204.6 lbs CO2/metric ton. (http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf)

[29] This value is calculated from the EPA estimate of 0.005 metric tons CO2/therm. (http://www.epa.gov/RDEE/energy-resources/refs.html)

Table 40: Gross and Net Energy Savings: TTC All End-Users

TTC		Annual MWh		Peak kW		Annual Therms	
End-Use	Participants	Gross	Net	Gross	Net	Gross	Net
Lighting	110	7,639	6,400	2,487	2,115	-19,687	-16,780
Totals	**110**	**7,639**	**6,400**	**2,487**	**2,115**	**-19,687**	**-16,780**

Note: These net electric and gas savings equate to approximately 3,000[30] and -80[31] metric tons of avoided carbon dioxide (CO_2) emissions.

[30] This value is calculated using EPA annual non-baseload output emission rates for the WECC California subregion of 1,083.02 lb/MWh and 2,204.6 lbs CO2/metric ton. (http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf)

[31] This value is calculated from the EPA estimate of 0.005 metric tons CO2/therm. (http://www.epa.gov/RDEE/energy-resources/refs.html)

5.3 SCG3503: SCG Education and Training Program

Table 41: Gross Energy Savings: SCG ERC Surveyed End-Users

SCGERC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	11	2,557,221	232,475	70,014	2,851	259	33	53,493	4,863	282
Water Management	1	1,222,713	1,222,713	1,222,713	105	105	105	0	0	0
Compressed Air	2	259,502	129,751	129,751	79	40	40	6	3	3
Lighting	6	66,908	11,151	6,125	42	7	0	-209	-35	-7
Green Building/Envelope	16	31,719	1,982	284	49	3	0	2,159	135	52
Renewables	1	15,827	15,827	15,827	8	8	8	0	0	0
Comm Cooking/Refrigeration	3	1,652	551	788	5	2	1	602	201	62
Motors/Pumps	1	180	180	180	1	1	1	0	0	0
Boilers/Water Heating	19	0	0	0	0	0	0	294,834	15,518	3,702
Totals	**60**	**4,155,721**	**69,262**	**316**	**3,139**	**52**	**0**	**350,885**	**5,848**	**127**

Table 42: Net Energy Savings: SCG ERC Surveyed End-Users

SCGERC		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	11	2,336,317	212,392	58,928	2,549	232	28	49,869	4,534	279
Water Management	1	927,224	927,224	927,224	80	80	80	0	0	0
Compressed Air	2	205,979	102,990	102,990	65	32	32	5	2	2
Lighting	6	48,035	8,006	4,988	27	5	0	-153	-26	-5
Green Building/Envelope	16	23,150	1,447	244	33	2	0	1,598	100	37
Renewables	1	11,541	11,541	11,541	6	6	6	0	0	0
Comm Cooking/Refrigeration	3	1,343	448	479	4	1	0	390	130	62
Motors/Pumps	1	127	127	127	0	0	0	0	0	0
Boilers/Water Heating	19	0	0	0	0	0	0	246,759	12,987	3,626
Totals	**60**	**3,553,716**	**59,229**	**292**	**2,765**	**46**	**0**	**298,468**	**4,974**	**92**

Table 43: Gross and Net Energy Savings: SCG ERC All End-Users

SCGERC		Annual MWh		Peak kW		Annual Therms	
End-Use	Participants	Gross	Net	Gross	Net	Gross	Net
HVAC	237	55,124	50,362	61,451	54,954	1,153,112	1,074,995
Water Management	22	26,357	19,988	2,263	1,716	0	0
Compressed Air	54	6,992	5,550	2,133	1,741	162	133
Lighting	97	1,082	777	673	438	-3,380	-2,478
Green Building/Envelope	280	556	405	851	582	37,817	27,990
Renewables	32	512	373	274	200	0	0
Comm Cooking/Refrigeration	162	89	72	245	232	32,434	21,037
Motors/Pumps	43	8	5	22	16	0	0
Boilers/Water Heating	377	0	0	0	0	5,853,783	4,899,274
Totals	**1,304**	**90,720**	**77,533**	**67,913**	**59,878**	**7,073,928**	**6,020,951**

Note: These net electric and gas savings equate to approximately 38,000[32] and 30,000[33] metric tons of avoided carbon dioxide (CO_2) emissions.

[32] This value is calculated using EPA annual non-baseload output emission rates for the WECC California subregion of 1,083.02 lb/MWh and 2,204.6 lbs CO2/metric ton. (http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf)

[33] This value is calculated from the EPA estimate of 0.005 metric tons CO2/therm. (http://www.epa.gov/RDEE/energy-resources/refs.html)

5.4 SDGE3009: California Center for Sustainable Energy/Energy Resource Center Partnership

Table 44: Gross Energy Savings: SDG&E Surveyed End-Users

SDG&E		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	8	588,581	73,573	12,157	187	23	8	15,378	1,922	425
Lighting	5	190,615	38,123	45,661	34	7	9	-1,701	-340	-212
Motors/Pumps	2	95,778	47,889	47,889	14	7	7	0	0	0
Green Building/Envelope	6	66,217	11,036	10,310	35	6	4	-559	-93	0
Boilers/Water Heating	2	0	0	0	0	0	0	2,020	1,010	1,010
Totals	**23**	**941,190**	**40,921**	**12,420**	**270**	**12**	**6**	**15,137**	**658**	**0**

Table 45: Net Energy Savings: SDG&E Surveyed End-Users

SDG&E		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	8	509,118	63,640	9,994	166	21	6	12,671	1,584	361
Lighting	5	164,649	32,930	36,149	28	6	8	-1,424	-285	-181
Motors/Pumps	2	91,288	45,644	45,644	13	6	6	0	0	0
Green Building/Envelope	6	43,548	7,258	6,854	23	4	3	-356	-59	0
Boilers/Water Heating	2	0	0	0	0	0	0	1,711	855	855
Totals	**23**	**808,602**	**35,157**	**8,480**	**230**	**10**	**4**	**12,601**	**548**	**0**

Table 46: Gross and Net Energy Savings: SDG&E All End-Users

SDG&E		Annual MWh		Peak kW		Annual Therms	
End-Use	Participants	Gross	Net	Gross	Net	Gross	Net
HVAC	101	7,444	6,439	2,365	2,097	194,483	160,246
Lighting	121	4,629	3,998	816	685	-41,309	-34,582
Motors/Pumps	91	4,361	4,156	636	585	0	0
Green Building/Envelope	71	782	514	418	274	-6,598	-4,208
Boilers/Water Heating	30	0	0	0	0	30,650	25,965
Totals	**415**	**17,215**	**15,107**	**4,235**	**3,641**	**177,226**	**147,421**

Note: These net electric and gas savings equate to approximately 7,000[34] and 700[35] metric tons of avoided carbon dioxide (CO_2) emissions.

Table 47: Gross Energy Savings: CCSE Surveyed End-Users

CCSE		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	1	73,668	73,668	73,668	21	21	21	3,590	3,590	3,590
Renewables	3	31,153	10,384	7,577	16	5	4	3	1	0
Lighting	9	4,379	487	432	0	0	0	-25	-3	-3
Green Building/Envelope	5	-19	-4	45	0	0	0	51	10	0
Totals	**18**	**109,181**	**6,066**	**419**	**37**	**2**	**0**	**3,620**	**201**	**0**

[34] This value is calculated using EPA annual non-baseload output emission rates for the WECC California subregion of 1,083.02 lb/MWh and 2,204.6 lbs CO2/metric ton. (http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf)

[35] This value is calculated from the EPA estimate of 0.005 metric tons CO2/therm. (http://www.epa.gov/RDEE/energy-resources/refs.html)

Table 48: Net Energy Savings: CCSE Surveyed End-Users

CCSE		Annual kWh			Peak kW			Annual Therms		
End-Use	Participants	Total	Mean	Median	Total	Mean	Median	Total	Mean	Median
HVAC	1	66,301	66,301	66,301	19	19	19	3,231	3,231	3,231
Renewables	3	25,215	8,405	6,030	13	4	3	3	1	0
Lighting	9	3,617	402	346	0	0	0	-21	-2	-2
Green Building/Envelope	5	12	2	42	0	0	0	16	3	0
Totals	**18**	**95,146**	**5,286**	**337**	**32**	**2**	**0**	**3,229**	**179**	**0**

Table 49: Gross and Net Energy Savings: CCSE All End-Users

CCSE		Annual MWh		Peak kW		Annual Therms	
End-Use	Participants	Gross	Net	Gross	Net	Gross	Net
HVAC	28	2,059	1,853	576	519	100,350	90,315
Renewables	28	290	235	145	117	32	24
Lighting	130	63	52	4	3	-360	-299
Green Building/Envelope	56	0	0	4	3	565	178
Totals	**242**	**2,413**	**2,141**	**730**	**643**	**100,587**	**90,217**

Note: These net electric and gas savings equate to approximately 1,000[36] and 450[37] metric tons of avoided carbon dioxide (CO_2) emissions.

[36] This value is calculated using EPA annual non-baseload output emission rates for the WECC California subregion of 1,083.02 lb/MWh and 2,204.6 lbs CO2/metric ton. (http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf)

[37] This value is calculated from the EPA estimate of 0.005 metric tons CO2/therm. (http://www.epa.gov/RDEE/energy-resources/refs.html)