PY2010-2012 CALIFORNIA STATEWIDE EMERGING TECHNOLOGIES PROGRAM PHASE II PROGRAM EFFECTS REPORT VOLUME II

Prepared by

Opinion Dynamics Corporation

Itron, Inc.

For the

California Public Utilities Commission

Energy Division

CALMAC Study ID: CPU0066.04

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EVALUATOR CONTACT INFORMATION

Table 1 presents the contact information for the firms evaluating the PY2010-2012 Emerging Technologies Program. Itron is the prime contractor and serves as oversight for the efforts undertaken by the subcontractors. Opinion Dynamics is responsible for the majority of the activities and reporting undertaken in the evaluation. SBW Engineering is leading the development of the guidelines for conducting ETP technology assessments with Navigant Consulting supporting this effort.

Table 1. Key Evaluator Contact Information, by Firm

Firm/Agency	Name	Address	Email	Phone
Itron, Inc.	Ann Peterson	330 Madson Place, Davis, CA 95618	Ann.peterson@itron.com	(509) 891-3185
Opinion Dynamics Corporation	Mary Sutter	1999 Harrison St, Suite 1420, Oakland, CA 94612	msutter@opiniondynamics.com	(510) 444-5050 X104
	Olivia Patterson	1999 Harrison St, Suite 1420, Oakland, CA 94612	opatterson@opiniondynamics.com	(510) 444-5050 X111
SBW Consulting	Jeffrey S Romberger	2450 Central Avenue, Suite P-5 Boulder, CO 80301	jromberger@sbwconsulting.com	(720) 484-4156
Navigant	Dan Greenberg	1375 Walnut Street, Suite 200 Boulder, CO 80302	Dan.greenberg@navigant.com	303-728-2517

Table 2. Key CPUC Contact Information

Firm/Agency	Name	Address	Email	Phone
California Public Utility Commission – Energy Division	Paula Gruendling	505 Van Ness Avenue San Francisco, CA 94102	paula.gruendling@cpuc.ca.gov	(415) 703-1925
Prahl & Associates	Ralph Prahl	7613 Whitebridge Glen, University Park FL 34201	ralph.prahl@gmail.com	(608) 334-9942

INTRODUCTION

This is the second of three documents that comprise the evaluation results of the Phase II: Program Effects Evaluation for the PY2010-2012 Emerging Technologies Program (ETP).[1] This volume contains the following sections:

A. Detailed Methodology

B. Detailed Evaluation Results

C. Data Collection Results

D. Topline Survey Results

E. Data Collection Instruments

F. Phase I Findings and Recommendations

[1] Comprise the utility-specific ETPs operated by four investor-owned utilities (IOUs): Pacific Gas and Electric (PG&E), Southern California Edison (SCE), Southern California Gas (SCG), and San Diego Gas and Electric (SDG&E).

Appendix A. Detailed Methodology

There were four surveys fielded to the following groups in the Phase II evaluation:

a. TRIO event attendees
b. EE program managers
c. Food Service Technology Demo Kitchen attendees
d. Energy Innovation Center attendees.

Three of the four were Internet surveys that attempted a census of all individuals with email addresses. For the Energy Innovation Center effort, a convenience sample approach was used given the nature of the project. Interviews were conducted with SFP market influencers and Demonstration Showcase stakeholders. We provide a description of each of these data collection activities below.

A.1 Energy Efficiency Project Manager Survey

For this survey, we developed our sample frame by compiling a list of IOU energy efficiency program staff that were expected to have received one or more reports. Each IOU provided the names and emails of the relevant energy efficiency program managers (EEPM), and the evaluation team then fielded the survey. From a sample frame of 48 attendees, we received 20 completes.

The Internet survey was fielded from May 21 to June 14, 2013. Three reminders were sent to attendees, and the average time to complete the survey was 19 minutes.

Table 3. Energy Efficiency Program Manager Survey Sample

	Count of Staff
Population	48
Sample Frame	48
Completed Surveys	20

The survey response rate is the number of completed surveys divided by the total number of potentially eligible respondents in the population. We calculated the response rate using standards and formulas set forth by the American Association for Public Opinion Research (AAPOR).[2] We chose to use AAPOR Response Rate 1 (RR1). The formulas used to calculate RR1 are presented below. The definitions of the letters used in the formulas are displayed in the survey disposition tables below.

$$RR1 = I / (I + R)$$

[2] Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys, AAPOR, 2011. Accessed on July 22, 2013 at: http://www.aapor.org/AM/Template.cfm?Section=Standard_Definitions2&Template=/CM/ContentDisplay.cfm&ContentID=3156

Table 4. Energy Efficiency Program Manager Survey Dispositions

Disposition	N
Completed Interviews (I)	20
Eligible Non-Interviews (R)	41
Refusals	*0*
Mid-Interview terminate	*9*
No Response	*12*
Not Eligible (e)	7
Bounce Backs	*7*
Known Ineligibles (replied with reason)	*0*
Known Ineligibles (screened out)	*0*
Total Participants in Sample	48

The following table provides the response rate.

Table 5. Energy Efficiency Program Manager Survey Response Rate

AAPOR Rate	Percentage
Response Rate	48.8%

A.2 SCALED FIELD PLACEMENT INTERVIEWS

The sample frame for the interviews was developed by compiling the lists provided by the IOUs of SFP project stakeholders. Budget allowed for us to gather data from up to nine projects. We conducted a simple random sample of the population of completed SFP projects to choose our nine projects and performed a census of participants within those nine projects. Ultimately, of the 21 people listed within these projects, 9 were interviewed.

Table 6: Sample Frame of SFP Projects

N	IOU	Project ID	Project Name	Chosen for Sample
1	SCE	ET10SCE3020	Climate Appropriate HVAC	
2	PG&E	ET11PGE3073	Home Energy Management Scaled Field Placement (Phase A) Smart Thermostats	X
3	PG&E	ET11PGE3131	EMS Fault Detection Diagnostics	
4	PG&E	ET11PGE3171	EMS Wireless Pneumatic Thermostat (Phase A)	X
5	PG&E	ET12PGE3181	Comprehensive HVAC RTU for SMB	
6	PG&E	ET12PGE3151	Food Service Tech Load Shifting Ice Machines (Phase A)	X
7	PG&E	ET11PGE3161	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase A)	
8	SCE	ET11SCE3020	LED Down Light	X
9	SDG&E	ET11SDGE0011	Bi-Level Elevator Cab Lighting at UCSD	X
10	PG&E	ET12PGE3301	PAR/MR LED Pilot	

N	IOU	Project ID	Project Name	Chosen for Sample
11	PG&E	ET12PGE3351	Advanced LED Track Fixtures	X
12	PG&E	ET11PGE3181	Follow Up Linear Panel and Controls Study (GSA)	X
13	PG&E	ET12PGE3171	Plasma Exterior (Phase A)	X
14	PG&E	ET12PGE3191	Water Heaters Alt. Technologies (Phase A)	X

The in-depth interviews were conducted from May 21 to June 14, 2013. Three email reminders were sent to attendees, and the average time to complete the interview was about 20 minutes.

Table 7. Scaled Field Placement Interview Sample

	Count of Projects	Count of Participants
Sample frame	14	31
Completed surveys	9	9 (Out of 21 participants listed in these 9 projects)

The survey response rate is the number of completed surveys divided by the total number of potentially eligible respondents in the population. We calculated the response rate using the standards and formulas set forth by the American Association for Public Opinion Research.[3] We chose to use AAPOR Response Rate 1 (RR1). The formulas used to calculate RR1 are presented below. The definitions of the letters used in the formulas are displayed in the Survey Disposition tables below.

Table 8. Scaled Field Placement Interview Dispositions

Disposition	N
Completed interviews (I)	9
Eligible non-interviews (R)	11
Refusals (R)	*0*
Respondent never available (NC)	*11*
Not eligible (e)	1
Known ineligibles (screened out)	*1*
Total participants in sample	21

The following table provides the response and cooperation rates.

Table 9. Scaled Field Placement Interview Response Rate

AAPOR Rate	Percentage
Response rate	45%

[3] Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys, AAPOR, 2011. http://www.aapor.org/AM/Template.cfm?Section=Standard_Definitions2&Template=/CM/ContentDisplay.cfm&ContentID=3156

A.3 Food Service Technology Center Demo Kitchen

For this survey, we developed our sample frame from a demonstration attendees list provided to us by PG&E. The evaluation team fielded a survey to a census of attendees for whom we had an email address. From a sample frame of 58 attendees, 11 surveys were completed.

The Internet survey was fielded from June 1 to June 12, 2013. Three reminders were sent to attendees, and the average time to complete the survey was 12 minutes.

Table 10. Food Service Technology Center Demonstration Showcase Survey Sample

	Count of Visitors
Population	90
Records with no email address (removed from sample)	32
Sample Frame	58
Completed Surveys	11

The survey response rate is the number of completed surveys divided by the total number of potentially eligible respondents in the population. We calculated the response rate using the standards and formulas set forth by the American Association for Public Opinion Research.[4] We chose to use AAPOR Response Rate 1 (RR1). The formulas used to calculate RR1 are presented below. The definitions of the letters used in the formulas are displayed in the Survey Disposition tables below.

$$RR1 = I / (I + R)$$

Table 11. Food Service Technology Center Demonstration Showcase Survey Dispositions

Disposition	N
Completed Interviews (I)	11
Eligible Non-Interviews (R)	56
Refusals	*1*
Mid-Interview terminate	*2*
No Response	*42*
Not Eligible (e)	2
Bounce Backs	*2*
Known Ineligibles (replied with reason)	*0*
Known Ineligibles (screened out)	*0*
Total Participants in Sample	58

The following table provides the response rate.

[4] Ibid.

Table 12. Food Service Technology Center Demonstration Showcase Survey Response Rate

AAPOR Rate	Percentage
Response Rate	19.6%

A.4 Demonstration Showcase Energy Innovation Center Intercept

For this survey, we used a convenience sample of visitors to the Energy Innovation Center in San Diego, CA. A convenience sample is a form of non-probability sampling (meaning that respondents are not selected randomly) where the sample is drawn from the population that is close at hand rather than pulled from any sample frame.

The evaluation team fielded this survey on June 6, 2013 and completed 35 surveys. The time to complete the survey ranged between 5-10 minutes.

Table 13. Energy Innovation Center Intercept Survey Sample

	Count of Attendees
Population	Unknown
Sample frame	n/a
Completed surveys	35

A.5 Demonstration Showcase Zero Net Energy Retrofit Interview

For the interviews, we developed our sample frame by aggregating the total number of stakeholders with contact information for the project. We then conducted a census of the three stakeholders, interviewing all three. The in-depth interviews were performed in June 2013

Table 14. Demonstration Showcase Zero Net Energy Retrofit Survey Sample

	Count of Participants
Population	3
Sample Frame	3
Completed Surveys	3

The interview response rate was 100%.

A.6 TRIO Survey

For TRIO, we developed our sample frame by compiling event attendee lists from each event. The lists were originally created by the IOUs at each event. We obtained lists from all 14 events held within the 2010-2012 program period. From a sample frame of 773 attendees where all attendees in the frame were invited to complete the survey, we completed 69 surveys.

The internet survey was fielded from April 25th through May 13th, 2013. Three reminders were sent to attendees. The average time to complete the survey was 11 minutes.

Table 15. TRIO Survey Sample

	Count of Attendees
Population	963
IOU employees/Speakers (removed from sample)	132
Missing email/duplicate email (removed from sample)	58
Sample Frame	773
Completed Surveys	69

The survey response rate is the number of completed surveys divided by the total number of potentially eligible respondents in the population. We calculated the response rate using the standards and formulas set forth by the AAPOR.[5] We chose to use AAPOR Response Rate 1 (RR1). The formulas used to calculate RR1 are presented below. The definitions of the letters used in the formulas are displayed in the Survey Disposition tables below.

$$RR1 = I / (I + R)$$

Table 16. TRIO Survey Dispositions

Disposition	N
Completed Interviews (I)	69
Eligible Non-Interviews (R)	652
Refusals	*1*
Mid-Interview terminate	*23*
No Response	*628*
Not Eligible (e)	52
Bounce Backs	*50*
Known Ineligibles (replied with reason)	*0*
Known Ineligibles (screened out)	*2*
Total Participants in Sample	773

The following table provides the response rate.

Table 17. TRIO Survey Response Rate

AAPOR Rate	Percentage
Response Rate	9.5%

A.7 Attempts to Alleviate Threats to Validity and Sources of Bias

As with any evaluation, there are threats to validity and the potential for bias. Our data collection design incorporated internet surveys, in-depth discussions and intercept surveys. For quantitative data

[5] *Ibid.*

collection via internet surveys, both validity and reliability were addressed through multiple strategies. First, the experience of the evaluation team was leveraged to create questions that, at face value, appeared to measure the idea or construct that they were intended to measure. The questions were reviewed to ensure that double-barrel questions (i.e., questions that ask about two subjects, but with only one response) and loaded questions (i.e., questions that are slanted one way or another) were not asked. The overall logical flow of the questions was also reviewed carefully, so as not to confuse respondents, which could thereby decrease reliability.

The evaluation team, alongside the CPUC, reviewed all drafts of the various survey and interview guide instruments. The IOU's reviewed near-final drafts for comment. In addition, to determine if the wording of the questions was clear and unambiguous, each survey instrument was pre-tested and the first set of survey completions were reviewed. The IOUs were given an opportunity to review a near-final version of each survey.

For in-depth interviews and intercept surveys, reliability was ensured through the use of professional analytical staff and training, where needed.

To address ***construct validity*** the evaluation team performed a careful review of the data collection instruments as described above. Additionally, after the survey was complete, where multiple questions were intended to evaluate a single, underlying construct (such as in the case of the market barriers), statistical tests were performed (such as Cronbach's alpha) to gauge how well a set of items (or variables) measured a single uni-dimensional latent construct.[6] Cronbach's alpha formula produces a statistic ranging from 0 to 1, which is used to assess whether items composing a scale are measuring the same construct. Conventionally, values 0.7 or greater indicate construct validity. Results from the analysis produces a score ranging from 0.48 to 0.66. Ultimately, it was determined that market barrier questions did not represent a single construct well and thus each question was presented separately in Appendix B.

We did not address ***statistical validity*** as no regression or other statistical models were used in the analyses.

Internal validity was addressed through explanations that built on the team's knowledge, of the program implementation verified through discussions with the program team. The "impacts" of the Emerging Technologies Program were not energy related, but included developing technologies, and sharing and increasing information and understanding. Thus, evaluation methods considered the effects of the program, and its accomplishments, in non-energy terms.

External validity (the ability to generalize to the population of interest) was not an issue where there was a census incorporated for the survey efforts with a sufficient number of completes compared to the population of interest. In other instances, the evaluation team decided not to represent the population but rather the projects examined. Notably, the populations were small in many cases and therefore a larger percentage was needed to allow for extrapolation. All internet surveys used best practices for anonymous responses and multiple reminders, frequently employed with this type of data collection.

It is acknowledged that other non-sampling uncertainty can occur though an attempt was made to reduce these errors. The largest effect on results will occur if the population from which the sample frame is derived is incomplete, i.e., a frame error. For example, should 100 people attend a TRIO event, but we have contact information for only 50 of them, this creates potential bias in the results (of an unknown amount). In this case, the evaluation team assessed the availability of email contact data

[6] Cronbach's alpha is expressed as a function of the number of test items and the average inter-item covariance among the items.

and worked with the IOUs to improve population level contacts. We worked with the IOUs to ensure that the most complete sample frames were available for each survey (i.e. appropriate EE program managers and all TRIO event attendees) and if email contact information was not complete, this is noted (Section Appendix A).

In the case of the EE program manager survey (where phone numbers were available), the evaluation team followed-up by phone to reduce non-response bias. Further to this survey, MBS and TA recipients may have already responded to an earlier survey fielded in Phase 1.[7] However, given the limited sample size of report/study recipients, we believe that results from interviewing respondents twice would yield better results than excluding these participants. Moreover, participants who responded to the survey a second time could have received additional reports or studies that could affect their response to the survey.

A.8 AGGREGATE ANALYSIS

Aggregate analysis involves the analysis of a variety of data collected for all ETP projects to provide a statistical overview of the ETP portfolio. The aggregate analysis was used to:

- Verify program implementation plan objectives and program performance metrics, where relevant;
- Characterize ET portfolios and identify/track movement of measures into the IOU EE portfolio via the ETP database "recommended for transfer" variable, as well as other variables; and
- Provide a statistical overview of the ETP portfolio, including technical potential of measures recommended to the EE portfolio (technical potential will be provided as an addendum to this report).

Sources for the aggregate analysis included:

- PG&E, SCE, SCG and SDG&E ETP databases received May 2013
- PG&E, SCE, SCG and SDG&E quarterly reports as of Q4 2012 for expenditures.

[7] TRIO event attendees would have received surveys by the IOUs as part of their participation. However, the evaluation team had not fielded any surveys to the event attendees prior to this evaluation effort.

Appendix B. Detailed Evaluation Results

Below we provide detailed results from the evaluation effort by program element and aggregate analysis results. These include results from:

1. Overall aggregate analysis
2. IOU energy efficiency and ETP program staff
3. SFP participant interviews
4. Demonstration showcase surveys
5. TRIO attendee surveys.

B.1 Overall Aggregate Analysis Results

Each IOUs ETP database was aggregated for the overall statewide analysis. While running this aggregation, several data issues were identified. These are outlined below:

- Lack of a quality assurance process:
  - The evaluation team performed quality assurance/quality control (QA/QC) on the ETP databases with several subsequent revisions of the data by the IOUs prior to analysis.
  - After the final revision, there were several data cells that were incomplete or had missing information. For example:
    - Missing technical potential data for all SCG's completed projects and missing technical potential for 25 more completed projects from PG&E, SCE and SDG&E;
    - 71 projects did not have an origin source; and
    - 27 projects did not have a designated audience for the project and an additional 93 have a designation of "none."
  - The evaluation team performed QA/QC on ETP data to calculate technical potential as many of the data fields had values outside expected ranges. For example, some projects had overall technical potential in the field meant for kWh per site. As such, the evaluation team changed the information so it was consistent before calculating technical savings potential.

- Inconsistent information across variables:
  - The database had a few variables that, taken together, indicated project status. However, there were inconsistencies across some variables that specified status – i.e., whether a technology was recommended for adoption, the measures it was recommended for and the progress points, etc. The evaluation team adjusted some of this status information based on other details available in the databases.

- Lack of information on measure adoption:
  - Of 34 completed projects recommended for transfer, 8 have a recorded EE program measure number they were transferred to.

The IOUs provided a separate report on PPMs on July 3, 2013. It was outside the scope of this evaluation to determine reasons for any discrepancies between the IOU PPM Report and this evaluation report. All data shown in this section is therefore based on the ETP database.

ETP has successfully met its objectives, according to information in the ETP database. As shown in Table 18, the overall number of projects initiated for each element exceeded statewide objectives (initiated 302 projects, achieving 250% of objectives). The IOUs have likewise met their objectives within the allocated budget. Seventy-five percent of the budget was spent and the remaining 25% is allocated for ongoing projects.

Table 18: ETP PY2010-2012 Element Project and Budget Status Summary

ETP Element and IOUs	PIP Objective	Projects Initiated	% of Project Initiated vs. Objective	Program Budget	Program Expenditures	% of Budget Spent
ETP Overall						
PG&E total	46	97	211%	$18,495,877	$13,597,332	74%
SCE total	45	127	282%	$17,194,725	$12,219,014	71%
SCG total	15	40	276%	$3,515,000	$2,618,068	74%
SDG&E total	16	38	245%	$4,050,854	$3,951,389	98%
ETP total	**121**	**302**	**250%**	**$43,256,456**	**$32,385,803**	**75%**
Technology Assessment						
PG&E	28	44	157%	$9,719,749	$8,152,677	84%
SCE	30	89	297%	$6,572,064	$6,354,086	97%
SCG	7	30	429%	$3,515,000	$2,618,068	74%
SDG&E	8	25	313%	$4,050,854	$3,951,389	98%
Statewide	**73**	**188**	**258%**	**$23,857,667**	**$21,076,220**	**88%**
Scaled Field Placement						
PG&E	7	25	357%	$4,346,112	$2,637,863	61%
SCE	4	3	75%	$1,694,020	$734,260	43%
SCG	2	1	50%	SCG does not report expenditures by element in the ETP database		
SDG&E	2	1	50%	SDG&E does not report expenditures by element in the ETP database		
Statewide	**15**	**30**	**200%**	**$6,040,132**	**$3,372,124**	**56%**
Demonstration Showcase						
PG&E	5	7	140%	$2,857,640	$1,266,739	44%
SCE	5	10	200%	$3,257,954	$2,415,070	74%
SCG	2	4	200%	SCG does not report expenditures by element in the ETP database		
SDG&E	2	10	500%	SDG&E does not report expenditures by element in the ETP database		
Statewide	**14**	**31**	**221%**	**$6,115,594**	**$3,681,809**	**60%**
Market and Behavioral Studies						
PG&E	1	8	800%	$526,488	$496,978	94%
SCE	1	12	1200%	$523,520	$529,266	101%
SCG	1	1	100%	SCG does not report expenditures by element in the ETP database		
SDG&E	1	0	0%	SDG&E does not report expenditures by element in the ETP database		
Statewide	**4**	**21**	**525%**	**$1,050,008**	**$1,026,244**	**98%**
TRIO						
PG&E	3 events per year	5	156%	$161,446	$467,100	289%
SCE		5		$2,115,413	$568,036	27%

ETP Element and IOUs	PIP Objective	Projects Initiated	% of Project Initiated vs. Objective	Program Budget	Program Expenditures	% of Budget Spent
SCG	rotating between IOUs	2		SCG does not report expenditures by element in the ETP database		
SDG&E		2		SDG&E does not report expenditures by element in the ETP database		
Statewide	**9 over three years**	**14**	**100%**	**$2,276,858**	**$1,035,136**	**45%**
Technology Development Support						
PG&E	2	8	400%	$884,443	$575,975	65%
SCE	2	8	400%	$249,188	$269,755	108%
SCG	1	2	200%	SCG does not report expenditures by element in the ETP database		
SDG&E	1	0	0%	SDG&E does not report expenditures by element in the ETP database		
Statewide	**6**	**18**	**300%**	**$1,133,631**	**$845,730**	**75%**
Technology Test Center						
SCE	**NA**	**NA**	**NA**	**$2,125,284**	**$1,135,678**	**53%**
Program Mgmt & CPUC Reporting						
SCE	**NA**	**NA**	**NA**	**$657,283**	**$212,862**	**32%**

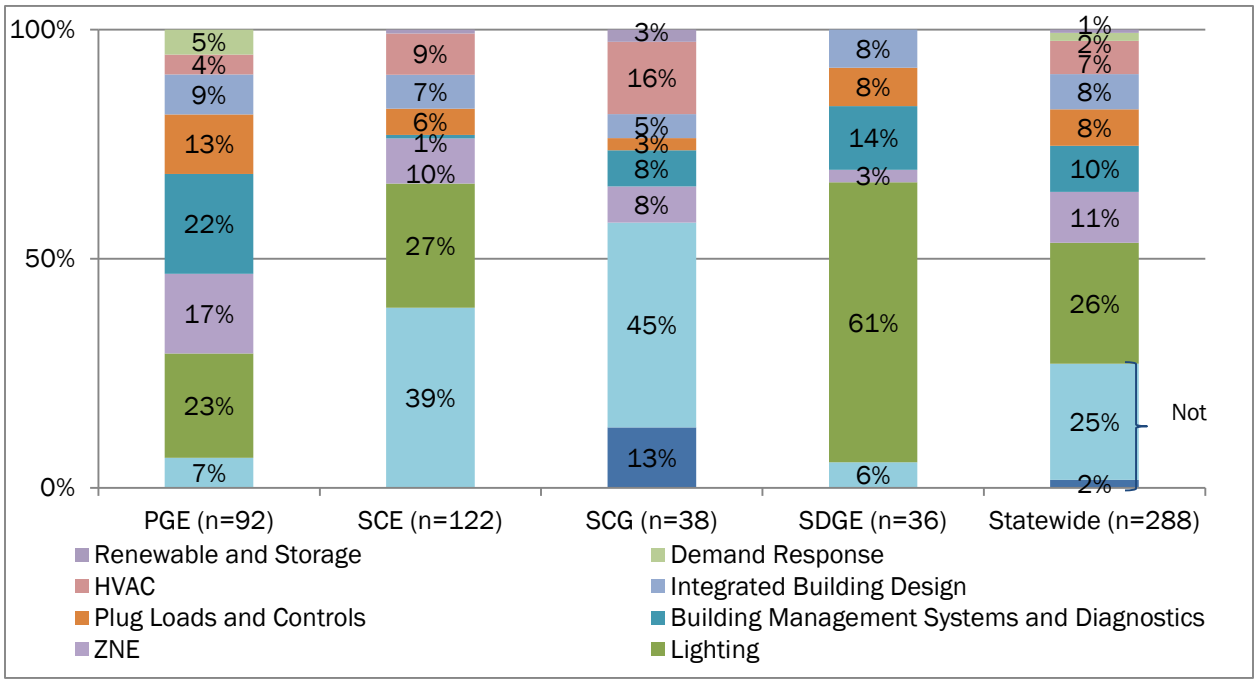
Source: Objectives are from the IOU PIPs, Projected Initiated, budgets, expenditures and proposed budgets are taken from the data request.

SCG does not report expenditures by element in the ETP database, so all expenditures are within TA.

The PIP notes that SCG and SDG&E should have three events per year, which are split evenly across the two IOUs

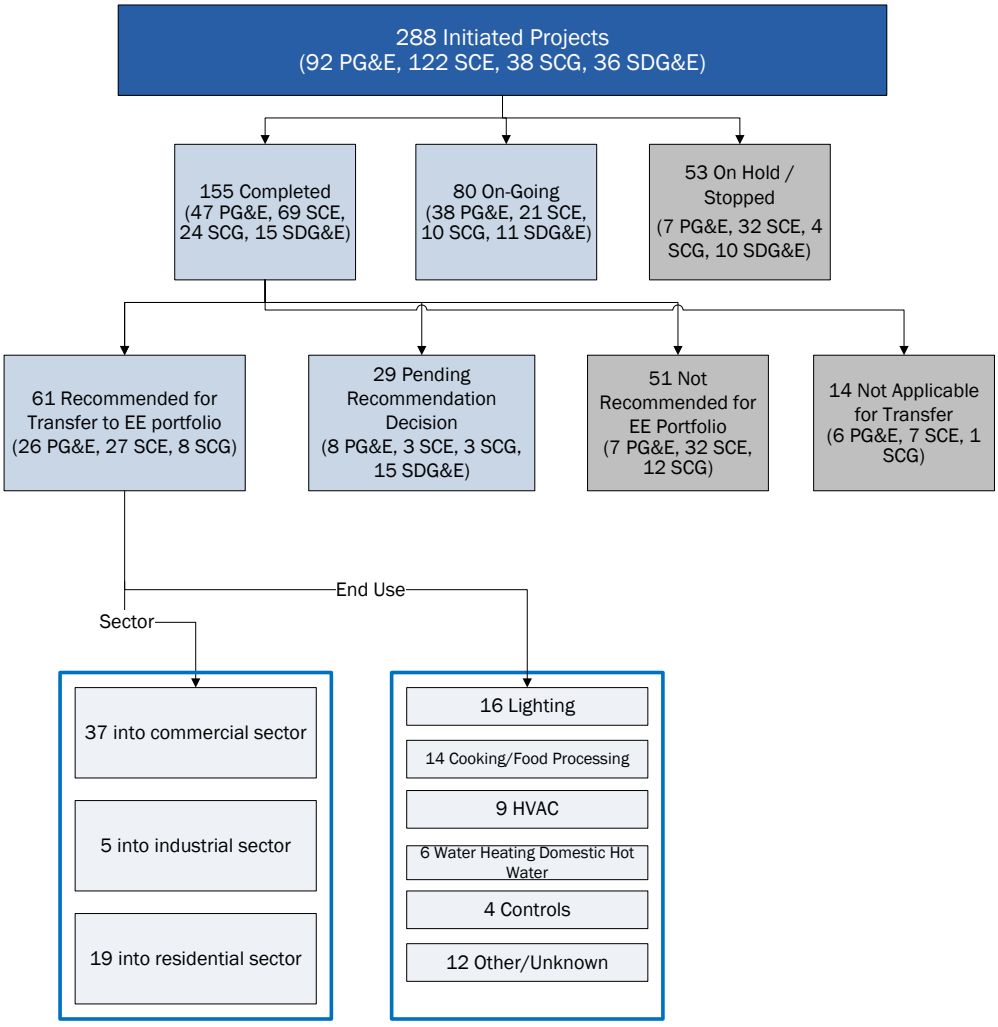
As previously noted, about three-fourths of the projects initiated were aligned with the research and technology (R&T) chapters of the CEESP, which support the State's Big Bold Strategies. Figure 1 demonstrates that end-uses were mixed across the IOUs, however, on a statewide basis; lighting projects were initiated the most.

Figure 1. Project Type by Research and Technology Framework Area (n=288)



Furthermore, the aggregate analysis showed that the ETP projects recommended for transfer were primarily lighting, cooking/food processing and HVAC end-uses. As such, ETP was aligned with the PPMs for end-uses in the lighting, HVAC, plug-loads and controls end-uses. Additionally, while the projects were primarily in the commercial and industrial sectors, about 30% were in the residential sector.

Figure 2. Emerging Technologies Program, Completed Projects by Sector

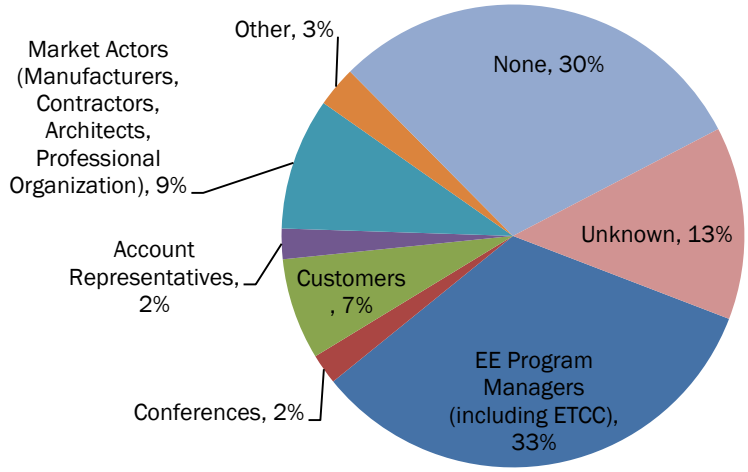


Of the total 61 completed projects, 34 were Technology Assessments, 11 were Scaled Field Placements and the remaining 16 were comprised of other ETP elements.

In addition, the aggregate analysis showed that the majority information about the completed and on-going technology assessments were presented mainly to EE program managers, which is aligned with the ETP objectives and PPMs (Figure 3).[8] Other audiences included market actors, account representatives, customers and conferences. Notably, 13% of projects did not specify an audience and 30% specified no audience (i.e. the response was "none").

[8] Note that the ETP database variable supports one audience input, as such, these results could be mutually exclusive.

Figure 3. Audience for Completed and Ongoing Technology Assessment Projects, by IOU (n=141)



In addition to the objectives and program performance metrics, the evaluation team analyzed projects to determine their sources and their potential influence.

Figure 4 shows that about a third of the projects were sourced internally, while roughly 40% were sourced externally from other utilities, professional organizations, the Public Interest Energy Research (PIER) program, universities, manufacturers, etc. Project ideas therefore originated from a diversity of sources; for nearly 25%, there is no source identified.

Figure 4. Project Sources Across all IOUs (n=288)

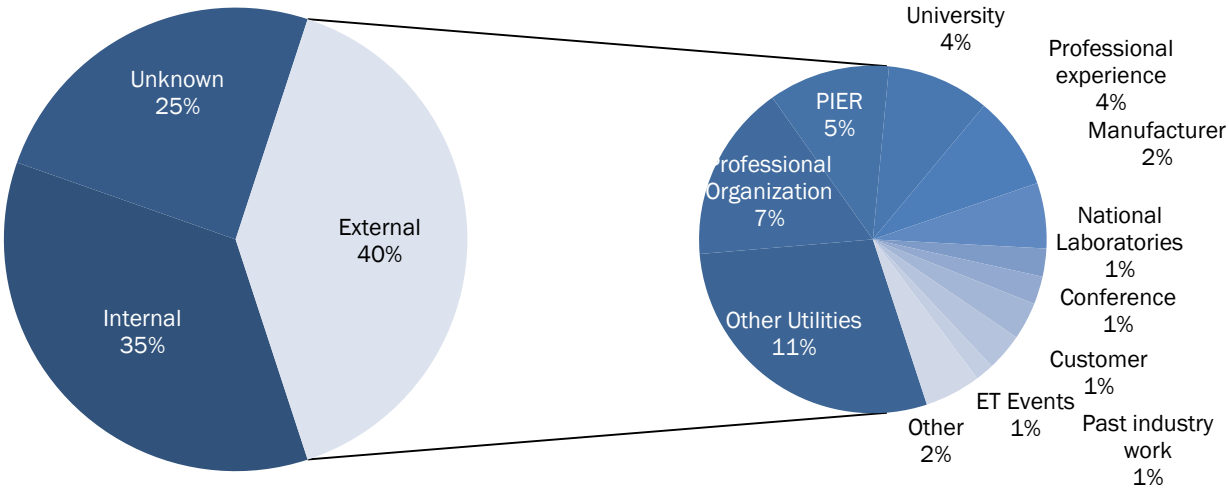
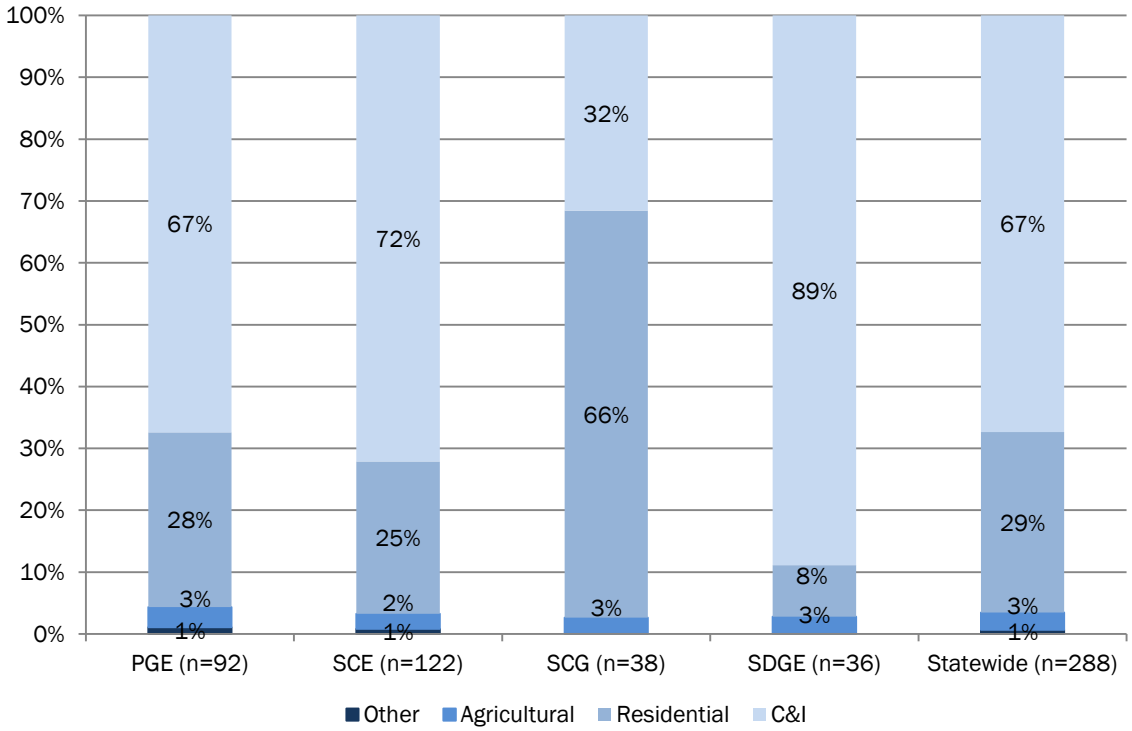


Figure 5 shows that majority of statewide projects were for the commercial sector (67%). That said, SCG has most of its projects in the residential sector.

Figure 5. Projects by Market Sector (n=288)



B.1.1 Technology Assessments

There are 188 initiated Technology Assessments.

Table 19. Initiated Technology Assessments, By IOU

IOU	#	Project Number	Project Name
PG&E	1	ET11PGE1042	Advanced Window Films TA 2 (Day lighting blinds)
PG&E	3	ET11PGE1121	Integrated HVAC Retrofit Solutions (Multi-Tenant Light Commercial Buildings)
PG&E	5	ET12PGE1031	Integrated Occupancy Sensor (Contra Costa Co.)
PG&E	7	ET12PGE1271	CLTC Exterior Occupancy Survey
PG&E	9	ET12PGE1371	Verdigris PEC M&V
PG&E	11	ET12PGE1391	Refrigeration Heat Reclaim

IOU	#	Project Number	Project Name
PG&E	2	ET11PGE1111	Residential Water Heating Program Proposal - CEC RFP#500-07-503
PG&E	4	ET11PGE1151	LED High Bay Lightings
PG&E	6	ET12PGE1262	Xenon Technical Assessment Lifecycle Testing Phase 2
PG&E	8	ET12PGE1312	EMIS Baselining Performance Criteria (Phase B)
PG&E	10	ET12PGE1381	EPRI VRF Technology Assessment
PG&E	12	ET12PGE1401	Irrigation Systems Water/Energy Evaluation

IOU	#	Project Number	Project Name	IOU	#	Project Number	Project Name
PG&E	13	ET12PGE1431	Low-Pressure Agricultural Irrigation Systems	PG&E	14	ET12PGE1441	ZNEH Retrofits at UC Davis (Phase 1)
PG&E	15	ET12PGE1442	ZNEH Retrofits at UC Davis (Phase 2)	PG&E	16	ET12PGE1451	Expanded West Village Monitoring Project (Ramp-up from 24-150 units)
PG&E	17	ET12PGE1472	PG&E/Honda Smart Home Technology Assessment	PG&E	18	ET12PGE1481	Fry's - Advanced LED Indoor fixtures and replacement lamps
PG&E	19	ET12PGE1491	Anti-fog Display Case Film	PG&E	20	ET12PGE1501	San Mateo Jail - Geothermal Water Cooling Technology Assessment
PG&E	21	ET13PGE2011	Cottle House ZNE Monitoring	PG&E	22	ET13PGE2021	Sacred Heart Student Housing ZNE Monitoring
PG&E	23	ET13PGE2031	Sweetwater ZNE Monitoring	PG&E	24	ET13PGE2041	DeYoung Property - Fresno ZNE
PG&E	25	ET10PGE1031	Carbon and Energy Management Systems	PG&E	26	ET11PGE1041	Advanced Window Films TA 1
PG&E	27	ET11PGE1071	ET Home Energy Management Lab Tech Assessment Smart Thermostats	PG&E	28	ET11PGE1072	ET Home Energy Management Field Tech Assessment Smart Thermostats
PG&E	29	ET11PGE1081	Advance Radiant HVAC System Lab Test	PG&E	30	ET11PGE1082	Advance Radiant HVAC System Field Test
PG&E	31	ET12PGE1111	Packaged HVAC Advanced Controls and Sensors Technical Assessment	PG&E	32	ET12PGE1261	Xenon Technical Assessment Phase 1
PG&E	33	ET12PGE1311	EMIS Baselining Performance Criteria (Phase A)	PG&E	34	ET10PGE1001	Heat Pump Water Heaters (HPWH) Field Study
PG&E	35	ET12PGE1011	Assessment of Directional LEDs	PG&E	36	ET11PGE1051	Data Center Infrastructure Management
PG&E	37	ET12PGE1021	CEC Building Rating Tools Assessment	PG&E	38	ET12PGE1141	Optimization/Learning Thermostat Assessment Phase 1
PG&E	39	ET11PGE1021	Oil Well Pump Optimization Development	PG&E	40	ET11PGE1031	Agricultural & Irrigation Optimization Tool
PG&E	41	ET11PGE1061	Moving Bed Bio Reactor and Algae Treatment Process for Waste Water	PG&E	42	ET11PGE1181	Oil Field Project (Chevron, Bakersfield)
PG&E	43	ET12PGE1041	Office of Future	PG&E	44	ET12PGE1081	Liquid Cooling of Data Centers
SCE	1	ET10SCE3010	LED Street Lighting	SCE	2	ET10SCE1230	L Prize A-Lamp Laboratory Assessment
SCE	3	ET11SCE1010	Backlit Signs and Menu Boards Lab Evaluation	SCE	4	ET10SCE1020	Combination Ovens for Foodservice Applications
SCE	5	ET10SCE1150	IR Peeling System for Agriculture	SCE	6	ET10SCE1200	OTE Optimization for Waste Water Treatment Plants

IOU	#	Project Number	Project Name
SCE	7	ET10SCE1350	Cook & Hold Cabinets for Foodservice Applications
SCE	8	ET11SCE1020	Grocery Medium Temperature Display Case Defrost Control
SCE	9	ET11SCE1080	Single Family Radiant Cooling System
SCE	10	ET11SCE1121	Advanced Drywall Insulation
SCE	11	ET11SCE1200	Deep Energy Reduction Supermarket
SCE	12	ET11SCE1262	Phase Change Material for Mobile Homes
SCE	13	ET11SCE1290	Evaporative Pre-Cooling of Air Cooled Chiller Field Evaluation
SCE	14	ET12SCE1010	Energy Usage Social Gaming Assessment
SCE	15	ET12SCE1070	Dairy Cow Cooling Paper Study
SCE	16	ET12SCE1930	Quick Assessment Bi-Level Stairwell Lighting Lab Test
SCE	17	ET12SCE4021	Lighting Professional Certification
SCE	18	ET10SCE1030	Liquid Desiccant AC for Grocery Stores
SCE	19	ET10SCE1050	VSD Evaporative Fan Control for Walk-in Coolers
SCE	20	ET10SCE1070	VSD for Die Casters
SCE	21	ET10SCE1110	VRF for Lodging Application
SCE	22	ET10SCE1190	LED Recessed Luminaire
SCE	23	ET10SCE1250	Smart Corridor Bi-Level Lighting for Office Applications
SCE	24	ET10SCE1300	LED Menu Board Lighting Laboratory Assessment
SCE	25	ET10SCE1320	Pressure Fryers for Foodservice Applications
SCE	26	ET10SCE1330	Combination Ovens for Food Service
SCE	27	ET10SCE1340	Pizza Conveyor Ovens for Foodservice Applications
SCE	28	ET10SCE1390	Steamers for Food Service Applications
SCE	29	ET10SCE1400	Taco Tower for Food Service Applications
SCE	30	ET10SCE1410	High Density Holding Cabinets for Food Service
SCE	31	ET10SCE1430	Dry Well for Food Service
SCE	32	ET10SCE1440	Steamer/Kettle for Food Service Applications
SCE	33	ET10SCE1450	Vacuum Sealing/Packaging Machines for Food Service
SCE	34	ET11SCE1011	Backlit Signs and Menu Boards Field Evaluation
SCE	35	ET11SCE1030	Hospitality VRF Evaluation
SCE	36	ET11SCE1040	High Efficiency Blower Under 50hp Retrofit
SCE	37	ET11SCE1050	Commercial Tubular Daylighting System
SCE	38	ET11SCE1100	Off-grid Commercial Office DC Grid System
SCE	39	ET11SCE1130	Evaporator Fan Delay Control
SCE	40	ET11SCE1140	Hot Food Induction Holding Well
SCE	41	ET11SCE1180	Microwave Controlled Advanced Street Lighting Evaluation
SCE	42	ET11SCE1190	HVAC Electrostatic Filter
SCE	43	ET11SCE1220	LED Lighting for Cold Cases
SCE	44	ET11SCE1221	Exterior LED Lights with Occupancy Sensors
SCE	45	ET11SCE1240	Small Commercial LED Lighting and Controls
SCE	46	ET11SCE1260	Phase Change Material Paper Study
SCE	47	ET12SCE1030	DC Handheld Industrial Sanders
SCE	48	ET12SCE1060	Advanced Energy Efficiency and Power Quality Industrial Audit
SCE	49	ET12SCE1940	Cutting Edge Auto Showroom & Exterior Lighting
SCE	50	ET12SCE1950	Applied Advanced 220/110kV Substation Lighting

IOU	#	Project Number	Project Name	IOU	#	Project Number	Project Name
SCE	51	ET12SCE1970	Quick Assessment: Golf Clubhouse and Parking Advanced Lighting	SCE	52	ET12SCE1980	Quick Assessment: Relight Himast Port of LA & LB with Advanced Lighting
SCE	53	ET10SCE1220	L Prize A-Lamp for Hospitality Applications	SCE	54	ET10SCE1130	LED Light for Commercial Pools
SCE	55	ET10SCE1160	Blower for Industrial Applications	SCE	56	ET10SCE1290	LED A-Lamp Laboratory Assessment
SCE	57	ET10SCE1310	Hot Food Holding Cabinets for Foodservice	SCE	58	ET12SCE1040	Cheese Melter For Food Service
SCE	59	ET12SCE1080	Conveyor Broilers for Foodservice Applications	SCE	60	ET10SCE1240	Frontier Project
SCE	61	ET12SCE1990	Quick Assessment: Nano Sleeve for Electric Load	SCE	62	ET10SCE1010	Drag Reducing Agent for Fuel Pumping Stations
SCE	63	ET10SCE1060	Dynamic V8 electrostatic filter	SCE	64	ET10SCE1090	Distric Cooling Software
SCE	65	ET10SCE1100	Turbo Blower for Waste Water Treatment Plants	SCE	66	ET10SCE1120	Induction Barrel Heater Evaluation
SCE	67	ET10SCE1140	Fisonic Pump for Hot Water Applications	SCE	68	ET10SCE1170	Build Energy Sim Comparison
SCE	69	ET10SCE1180	LED T8	SCE	70	ET10SCE1210	VFD Pump at High Pressure Pump Stations
SCE	71	ET10SCE1360	Single Sided Griddles for Food Service Applications	SCE	72	ET10SCE1370	Rotisserie Ovens for Food Service Applications
SCE	73	ET10SCE1380	Double Sided Griddles for Food Service	SCE	74	ET10SCE1420	Dedicated Holding Bin Cabinets for Food Service
SCE	75	ET11SCE1060	Efficient Low Pressure Blower for Sparging	SCE	76	ET11SCE1070	Efficient Pneumatic Transport with VSD Controls
SCE	77	ET11SCE1090	Multi-Tenant Light Commercial PIER Evaluation	SCE	78	ET11SCE1091	Multi-Tenant Light Commercial
SCE	79	ET11SCE1110	Energy Resource Management Tool	SCE	80	ET11SCE1120	Smart Multi-family DHW Recirculation Pump
SCE	81	ET11SCE1150	High Efficacy Decorative Street Lighting Assessment	SCE	82	ET11SCE1151	High Efficacy Decorative Street Lighting Assessment
SCE	83	ET11SCE1160	Waste Water Pond Treatment Evaluation	SCE	84	ET11SCE1170	Efficient Solar Thermal Block Heater for Emergency Generators
SCE	85	ET11SCE1210	DC Powered Commercial Pool Pump	SCE	86	ET11SCE1230	PV Forklift Charging
SCE	87	ET11SCE1250	Self-Commissioning Daylighting Controls Field Evaluation	SCE	88	ET11SCE1261	PCM Integrated Commercial HVAC Field Evaluation
SCE	89	ET11SCE1280	Regenerative Blower Replacing Compressed Air Field Evaluation				
SCG	1	ET10SCG0007	Hydrothermal Direct Steam Injection (TA)	SCG	2	ET10SCG0017	Nano-insulation (TA)
SCG	3	ET12SCG0007	Dynalloy (TA)	SCG	4	ET12SCG0012	NanoWrap (TA)

IOU	#	Project Number	Project Name
SCG	5	ET10SCG0014	TMC in Boilers (TDS)
SCG	7	ET10SCG0011	ECO System Fuel Enhancer Evaluation (TA)
SCG	9	ET10SCG0010	GTI CEC HVAC Contract (TDS)
SCG	11	ET10SCG0018	Lab/Field Test Hybrid/Tankless/Condensing WH - SCG
SCG	13	ET11SCG0018	Submetering MFR Homes for HW and/or Gas (TA)
SCG	15	ET12SCG0010	Miniature Gas Meter Evaluation
SCG	17	ET12SCG0013	Residential Pump HW Circulation (Lab) (TA)
SCG	19	ET10SCG0015	Test LoNox Water Heater (MBS)
SCG	21	ET11SCG0001	Thermal Recycler (TA)
SCG	23	ET10SCG0019	Viability of Combo System - GTI - SCG
SCG	25	ET10SCG0012	Stanlin Flue Damper Evaluation at Burnham (TA)
SCG	27	ET12SCG0009	GTI-ETP - Natural Gas - Early Deployment Program
SCG	29	ET12SCG0016	Playa Vista
SDG&E	1	ET11SDGE0014	Low-Temperature Freezer Monitoring (TA)
SDG&E	3	ET11SDGE0016	Demand Control Vent. with Central. Air Sen. (TA)
SDG&E	5	ET12SDGE0002	Advanced Lighting Technologies - Fitness Clubs(TA)
SDG&E	7	ET12SDGE0004	Shower Monitor and Alarm System (TA)
SDG&E	9	ET12SDGE0006	T8 Linear LED (TA)
SDG&E	11	ET11SDGE0008	LED Pathway Bollard (TA)
SDG&E	13	ET11SDGE0013	Adap. Fridge and Freezer Cntrl for Comm. App (TA)
SDG&E	15	ET11SDGE0018	Lab Fume Hood ASPS (TA)
SDG&E	17	ET10SDGE0003	Greenhouse Retrofit (TA)
SDG&E	19	ET10SDGE0005	Electronic HID Lighting System - SDSU (TA)

IOU	#	Project Number	Project Name
SCG	6	ET10SCG0003	Field Study of Masco Study / Res Recirc Pump (TA)
SCG	8	ET10SCG0006	Cypress Steam Trap Monitoring (TA)
SCG	10	ET10SCG0008	GTI CEC Residential Water Heating Study (TA)
SCG	12	ET11SCG0015	Arcylic Panel for Greenhouse (TA)
SCG	14	ET12SCG0006	Rheem AC/Hybrid System (TA)
SCG	16	ET12SCG0011	Jeanologia
SCG	18	ET10SCG0013	Thermodynamic Process Control (TA)
SCG	20	ET10SCG0021	Solar Water Heating Systems (TA)
SCG	22	ET10SCG0016	CEC EE Web Tool (TA)
SCG	24	ET12SCG0004	Raypak DHW Boiler Reset Controller (TA)
SCG	26	ET12SCG0008	Residential AMI LT Commercial App. (TA)
SCG	28	ET12SCG0015	Residential HW Heater Test (TA)
SCG	30	ET12SCG0017	MF VFD Recirc-Pump (TA)
SDG&E	2	ET11SDGE0015	Software-Based Energy Reduction for Windows (TA)
SDG&E	4	ET12SDGE0001	Bi-level Gas Station Lighting Technologies (TA)
SDG&E	6	ET12SDGE0003	RTU Efficiency (TA)
SDG&E	8	ET12SDGE0005	Advanced Lighting Controls - Lab (TA)
SDG&E	10	ET10SDGE0007	LED Task Light (TA)
SDG&E	12	ET11SDGE0009	SDSU Central Plant Electronic HID Lighting (TA)
SDG&E	14	ET11SDGE0017	MF Swimming Pool & Spa VFD (TA)
SDG&E	16	ET10SDGE0001	Gas Station Canopy Lighting Systems (TA)
SDG&E	18	ET10SDGE0004	Electronic HID - City of San Diego (TA)
SDG&E	20	ET10SDGE0006	Bi-Level Corridor Lighting (TA)

IOU	#	Project Number	Project Name
SDG&E	21	ET10SDGE0008	Integration of BMS and ALCS (TA)
SDG&E	23	ET10SDGE0010	Electronic HID - City of Chula Vista
SDG&E	25	ET11SDGE0007	San Diego Zoo HVAC (TA)

IOU	#	Project Number	Project Name
SDG&E	22	ET10SDGE0009	Electronic HID Lighting System-Windmill Farms (TA)
SDG&E	24	ET10SDGE0011	Electronic HID Lighting System - Dr Jays (TA)

Of the 34 Technology Assessments recommended for transfer, 14 are for the commercial and industrial sector, 4 are for the residential sector and the remaining 16 are either pending, deemed, or unknown. Additionally, of these 34 projects, 8 have the EE program measure number they were transferred to.

Table 20. Completed Technology Assessments, By IOU

ETP IOUs	ETP Project Number	Project Name	Technology	EE Program Recommended for Technology Transfer
PGE	ET12PGE1111	Packaged HVAC Advanced Controls and Sensors Technical Assessment	Connected t-stat, digital economizer controller and DCV retrofit kit	Commercial
SCE	ET12SCE1040	Cheese Melter For Food Service	Cheese melter - AJ Antunes Model CM-100	Commercial
SCE	ET10SCE1330	Combination Ovens for Food Service	Combination oven	Commercial
SCE	ET10SCE1020	Combination Ovens for Foodservice Applications	Combination Ovens	Commercial
SCE	ET10SCE1410	High Density Holding Cabinets for Food Service	High Density Holding Cabinets	Commercial
SCE	ET11SCE1140	Hot Food Induction Holding Well	Induction holding wells	Commercial
SCE	ET10SCE1440	Steamer/Kettle for Food Service Applications	Microwave steamer	Commercial
SCE	ET10SCE1430	Dry Well for Food Service	See info in ET11SCE1140	Commercial
SCE	ET10SCE1390	Steamers for Food Service Applications	Steamers	Commercial
SCE	ET10SCE1310	Hot Food Holding Cabinets for Foodservice	Unknown	Commercial
SCE	ET10SCE1450	Vacuum Sealing/Packaging Machines for Food Service	Vacuum packagers	Commercial
SCG	ET10SCG0006	Cypress Steam Trap Monitoring (TA)	Other	Commercial energy efficiency
PGE	ET10PGE1031	Carbon and Energy Management Systems	Energy Management Software	Commercial, Grocery Sector
SCE	ET10SCE1130	LED Light for Commercial Pools	LED Pool lamp or fixture	Customized
SCE	ET10SCE1290	LED A-Lamp Laboratory Assessment	LED lamp	Customized and express.
SCE	ET11SCE1130	Evaporator Fan Delay Control	Controls	Deemed
SCE	ET10SCE1230	L Prize A-Lamp Laboratory Assessment	LED replacement for a 60W incandescent A lamp	Deemed

ETP IOUs	ETP Project Number	Project Name	Technology	EE Program Recommended for Technology Transfer
SCE	ET10SCE3010	LED Street Lighting	LED Street Light	Express solutions, customized solutions
SCE	ET10SCE1220	L Prize A-Lamp for Hospitality Applications	LED Light	Express solutions, upstream lighting
SCE	ET10SCE1030	Liquid Desiccant AC for Grocery Stores	Liquid Desiccant System	HVAC
SCE	ET11SCE1040	High Efficiency Blower Under 50hp Retrofit	Air Blowers	Industrial
PGE	ET12PGE1011	Assessment of Directional LEDs	LED directional replacement lamps-PAR30 and PAR38	Lighting
SCE	ET10SCE1160	Blower for Industrial Applications	Compressed Air Blower	New and retrofit
SCE	ET10SCE1070	VSD for Die Casters	Variable Speed Drive Motor	Pending
PGE	ET11PGE1081	Advance Radiant HVAC System Lab Test	Advanced Radiant HVAC System	Residential
PGE	ET11PGE1082	Advance Radiant HVAC System Field Test	Advanced Radiant HVAC System	Residential
SCG	ET10SCG0010	GTI CEC HVAC Contract (TDS)	HVAC - Space Cooling, HVAC - Space Heating	Residential energy efficiency
PGE	ET10PGE1001	Heat Pump Water Heaters (HPWH) Field Study	Heat Pump Water Heater (HPWH)	Residential, Mass Markets
SCE	ET11SCE1220	LED Lighting for Cold Cases	LED canopy(172W connected) and area(204W connected	TBD
SCE	ET11SCE1221	Exterior LED Lights with Occupancy Sensors	LED wall and pole mtd fixtures.	TBD
SCE	ET12SCE1940	Cutting Edge Auto Showroom & Exterior Lighting	Lighting	TBD
SCE	ET12SCE1080	Conveyor Broilers for Foodservice Applications	Conveyor Broiler	Unknown
SCG	ET10SCG0007	Hydrothermal Direct Steam Injection (TA)	HVAC - Space Heating, Water Heating Boiler	Unknown
SCG	ET11SCG0001	Thermal Recycler (TA)	Unknown	Unknown

Note: ET10, 11, or 12 indicates the year the project was initiated.

B.1.2 Scaled Field Placements

Figure 6 shows the Scaled Field Placement projects with their timeline (by progress point[9]) by IOU. PG&E's projects have durations between 1 and 22 months, with an average of 12 months. In comparison, SCE's projects have a slightly longer average duration of 15 months. SCG and SDG&E initiated only one project each.

[9] There are five progress points that are used in the ETP database to indicate the stage of the project, from initiation through completion or cancellation.

Figure 6. Timelines for Scaled Field Placement Projects from Progress Points

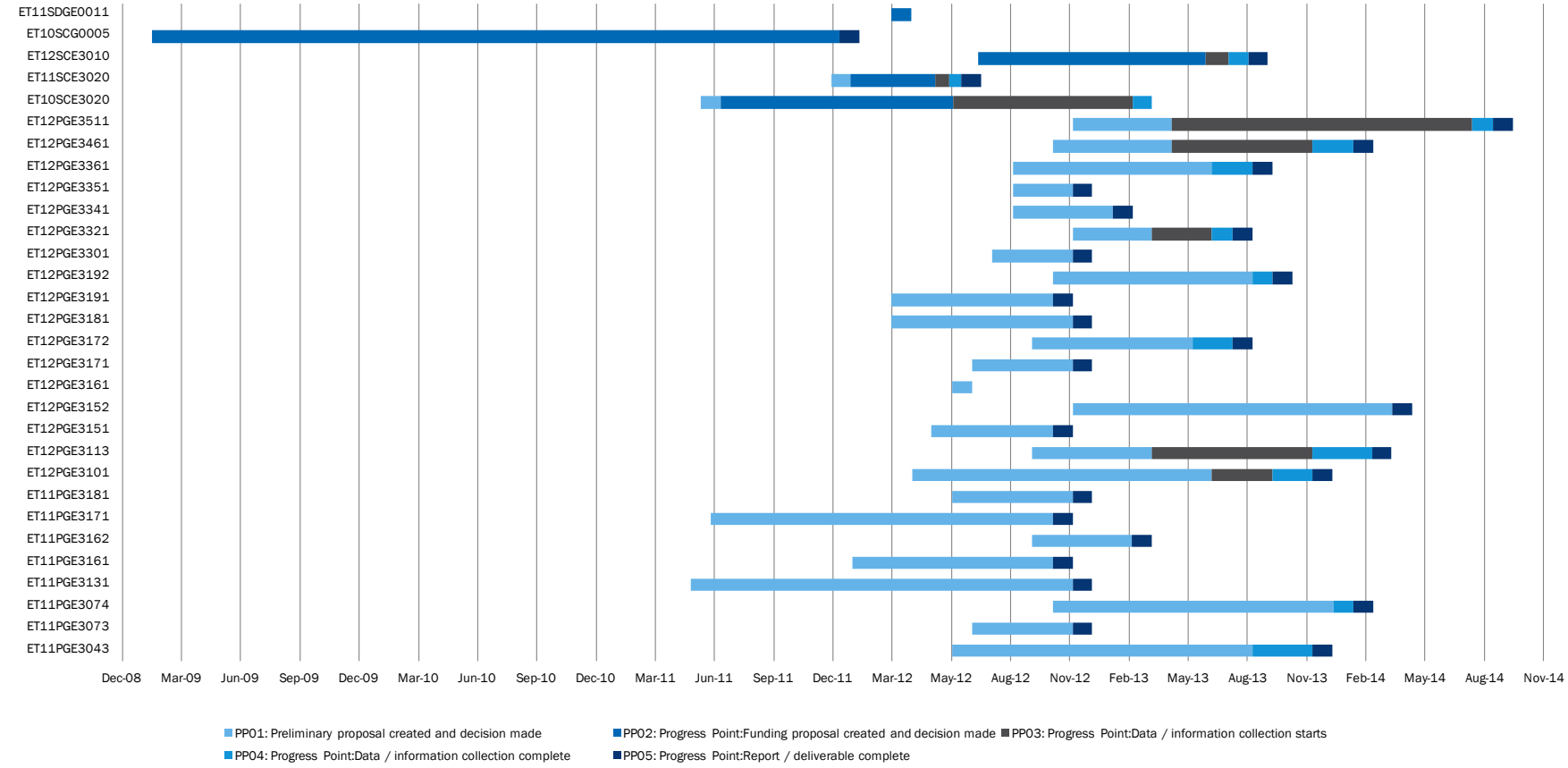


Table 21 provides details about each of the 30 Scaled Field Placement projects.

Table 21. Scaled Field Placement Project Description

IOU	#	Project ID	Project Name	Residential	Commercial	Agricultural	HVAC	Lighting	Other	Controls	Expected Costs	Status
PGE	1	ET11PGE3043	Advanced Window Films SFP		X				X		$189,820	Ongoing
PGE	2	ET11PGE3073	ET Home Energy Management Scaled Field Placement (Phase A) Smart Thermostats	X						X	$886,247	Complete
PGE	3	ET11PGE3074	ET Home Energy Management Scaled Field Placement (Phase B) Smart Thermostats	X						X	$40,000	Ongoing
PGE	4	ET11PGE3131	EMS Fault Detection Diagnostics		X					X	$290,350	Complete
PGE	5	ET11PGE3161	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase A)		X				X		$332,100	Complete
PGE	6	ET11PGE3162	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase B)		X				X		$62,900	Complete
PGE	7	ET11PGE3171	EMS Wireless Pneumatic Thermostat (Phase A)		X		X				$250,000	Complete
PGE	8	ET11PGE3181	Follow Up Linear Panel and Controls Study (GSA)		X			X			$195,000	Complete
PGE	9	ET12PGE3101	Western Cooling Challenge		X		X				$195,000	Ongoing
PGE	10	ET12PGE3113	Packaged HVAC Advanced Controls and Sensors SFP		X		X				$216,000	Ongoing
PGE	11	ET12PGE3151	Food Service Tech Load Shifting Ice Machines (Phase A)		X				X		$210,000	Complete
PGE	12	ET12PGE3152	Food Service Tech Load Shifting Ice Machines (Phase B)		X				X		$60,000	Complete
PGE	13	ET12PGE3161	Outdoor Occupancy Lighting Controls		X			X			$200,000	Stopped
PGE	14	ET12PGE3171	Plasma Exterior (Phase A)		X			X			$130,000	Complete
PGE	15	ET12PGE3172	Plasma Exterior (Phase B)		X			X			$40,000	Ongoing
PGE	16	ET12PGE3181	Comprehensive HVAC RTU for SMB		X		X				$185,000	Complete
PGE	17	ET12PGE3191	Water Heaters Alt. Technologies (Phase A)	X					X		$190,000	Complete

IOU	#	Project ID	Project Name	Residential	Commercial	Agricultural	HVAC	Lighting	Other	Controls	Expected Costs	Status
PGE	18	ET12PGE3192	Water Heaters Alt. Technologies (Phase B)	X					X		$205,000	Ongoing
PGE	19	ET12PGE3301	PAR/MR LED Pilot		X			X			$250,000	Complete
PGE	20	ET12PGE3321	Applied Materials 2X4 LED panels plus controls		X			X			$250,000	Ongoing
PGE	21	ET12PGE3341	First Fuel SFP		X				X		$106,000	Complete
PGE	22	ET12PGE3351	Safeway - Advanced LED Track Fixtures		X			X			$43,713	Complete
PGE	23	ET12PGE3361	ACE Hardware LED M&V		X			X			$73,040	Ongoing
PGE	24	ET12PGE3461	Small Commercial EMS (Siemens EcoView)		X					X	$470,000	Ongoing
PGE	25	ET12PGE3511	Business Energy Report Project		X				X		$570,000	Ongoing
SCE	1	ET10SCE3020	Climate Appropriate HVAC	X			X				$250,000	Ongoing
SCE	2	ET11SCE3020	LED Downlights	X				X			$47,000	Complete
SCE	3	ET12SCE3010	Air Blower Applications SFP			X			X		$250,000	Ongoing
SCG	1	ET10SCG0005	Energx Raydronics Control (SFP)	X					X		$150,000	Complete
SDG&E	1	ET11SDGE0011	Bi-Level LED Elevator Cab Lighting		X			X			$30,000	Complete

The majority of the 11 SFP projects recommended for transfer were for the commercial sector. Of these 11 projects, 5 have the EE program measure number they were transferred to (Table 22).

Table 22. Completed Scaled Field Placement Projects, By IOU

ETP IOUs	ETP Project Number	Project Name	Technology	EE Program Recommended for Technology Transfer
PGE	ET12PGE3341	First Fuel SFP	Energy Management Information Systems	Commercial
PGE	ET11PGE3161	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase A)	Energy Management System	Commercial

ETP IOUs	ETP Project Number	Project Name	Technology	EE Program Recommended for Technology Transfer
PGE	ET11PGE3162	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase B)	Energy Management System	Commercial
PGE	ET12PGE3151	Food Service Tech Load Shifting Ice Machines (Phase A)	Food Services, Ice Machines, Demand Response	Commercial Food Services
PGE	ET12PGE3152	Food Service Tech Load Shifting Ice Machines (Phase B)	Food Services, Ice Machines, Demand Response	Commercial Food Services
PGE	ET12PGE3181	Comprehensive HVAC RTU for SMB	HVAC	Commercial HVAC
PGE	ET12PGE3351	Safeway - Advanced LED Track Fixtures	LED Lighting	Lighting
PGE	ET11PGE3181	Follow Up Linear Panel and Controls Study (GSA)	LED lighting controls	Lighting
PGE	ET12PGE3301	PAR/MR LED Pilot	LED replacement lamps	Lighting
PGE	ET12PGE3191	Water Heaters Alt. Technologies (Phase A)	Water heaters	Residential (HEER)
SCG	ET10SCG0005	Energx Raydronics Control (SFP)	The Energx controls for combined space heating and domestic water system	Residential energy efficiency

Note: ET10, 11, or 12 indicates the year the project was initiated.

B.1.3 Market & Behavioral Studies

Figure 7 below shows the Market & Behavioral Studies with their timeline (by progress point[10]) by IOU. PG&E's projects have durations between 3 and 15 months, with an average of 9 months. SCE's projects have slightly shorter durations from 1 to 12 months, with an average of 6 months. SCG initiated only project, while SDG&E does not have any.

[10] There are five progress points that are used in the ETP database to indicate the stage of the project, from initiation through completion or cancellation.

Figure 7. Timelines for Market & Behavioral Studies from Progress Points

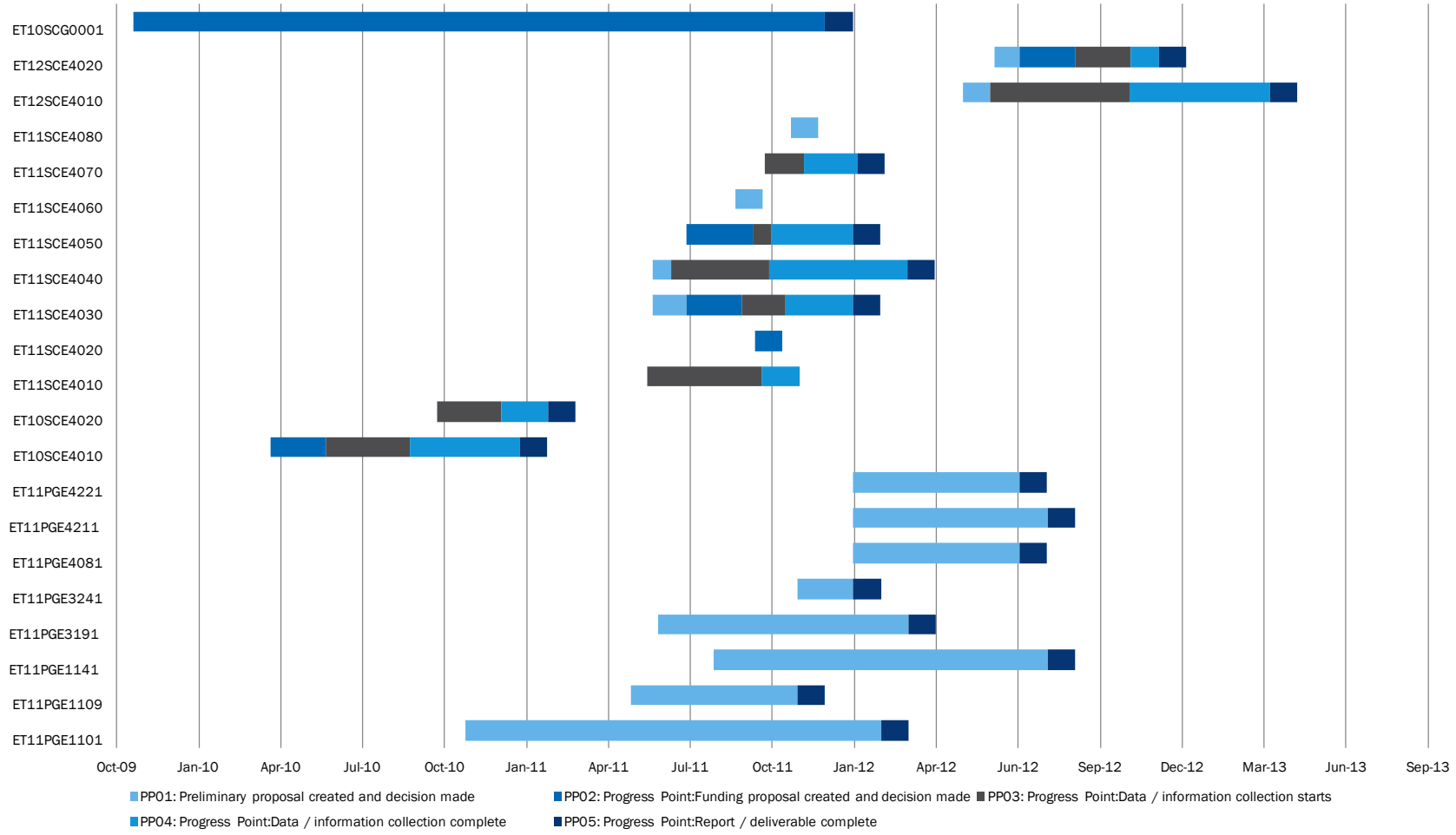


Table 23 provides details about each of the 21 Market & Behavioral Studies.

Table 23. Market & Behavioral Studies Project Description

IOU	#	Project ID	ETP Project Name	Market	Customer Research	Residential	Commercial	HVAC	Lighting	Other	Controls	Expected Cost	Status
PGE	1	ET11PGE1101	Lighting MSB Conjoint Study		X	X			X			$80,000	Complete
PGE	2	ET11PGE1109	HVAC Quality Maintenance Standards Implementation Behavioral Study		X	X		X				$150,000	Complete
PGE	3	ET11PGE1141	EMS Data Translation (Pneumatic to Wireless)	X			X			X		$55,040	Complete
PGE	4	ET11PGE3191	Continental Automatic Building Association (CABA) Research Project		X	X				X		$10,000	Complete
PGE	5	ET11PGE3241	EPRI Early Deployment Efficiency End User Technologies	X		Other	Other			X		$50,000	Complete
PGE	6	ET11PGE4081	Home Energy Management Insight Behavioral Research Smart Homes		X	X					X	$150,000	Complete
PGE	7	ET11PGE4211	M&BS EMS Systems	X			X			X		$87,000	Complete
PGE	8	ET11PGE4221	M&BS Building Stock Study	X			X				X	$62,000	Complete
SCE	1	ET10SCE4010	Air Blower Market Assessment	X			X			X		$18,000	Complete
SCE	2	ET10SCE4020	ZNE Technical Potential	X		X				X		$15,000	Complete
SCE	3	ET11SCE4010	Market Intelligence Gathering Process Evaluation	X		X				X		$28,000	Complete
SCE	4	ET11SCE4020	Residential Human Comfort Behavior Study for Low Energy Cooling		X	X		X				$70,000	Stopped
SCE	5	ET11SCE4030	Consumer Behavior Change via Online Integrated Demand-Side Management Leveraging Casual Social Games		X	X				X		$50,000	Complete
SCE	6	ET11SCE4040	HVAC Technology Roadmap	X			X	X				$24,893	Complete
SCE	7	ET11SCE4050	Pool Light Residential Usage Survey	X		X			X			$30,000	Complete

IOU	#	Project ID	ETP Project Name	Market	Customer Research	Residential	Commercial	HVAC	Lighting	Other	Controls	Expected Cost	Status
SCE	8	ET11SCE4060	Commercial Buildings Simulation Based Deep Energy Reduction Potential Study	X		X				X		$25,000	Stopped
SCE	9	ET11SCE4070	Future Outlook for Residential Energy Management		X	X				X		$15,000	Complete
SCE	10	ET11SCE4080	Ground Coupled Space Conditioning Technical Potential	X		X		X				$50,000	Ongoing
SCE	11	ET12SCE4010	West Coast Medium Commercial Market Assessment		X		X				X	$25,000	Complete
SCE	12	ET12SCE4020	Advanced Lighting Controls Training Program - Needs Assessment	X			X			X		$25,000	Complete
SCG	1	ET10SCG0001	SF/MF WH Data/Survey (MBS)		X	X				X		$105,000	On-hold

B.1.4 Demonstration Showcase

Figure 8 below shows the Demonstration Showcase projects with their timeline (by progress point[11]) by IOU. PG&E's projects have durations between 7 and 15 months, with an average of 10 months. SCE's projects have slightly longer durations from 1 to 51 months, with an average of 16 months. SCG initiated 4 projects with an average duration of 12 months. For SDG&E, there were a limited number of projects with progress point information. As such, we show only those projects where progress point information was available.

[11] There are five progress points that are used in the ETP database to indicate the stage of the project, from initiation through completion or cancellation.

Figure 8. Timelines for Demonstration Showcase Projects from Progress Points

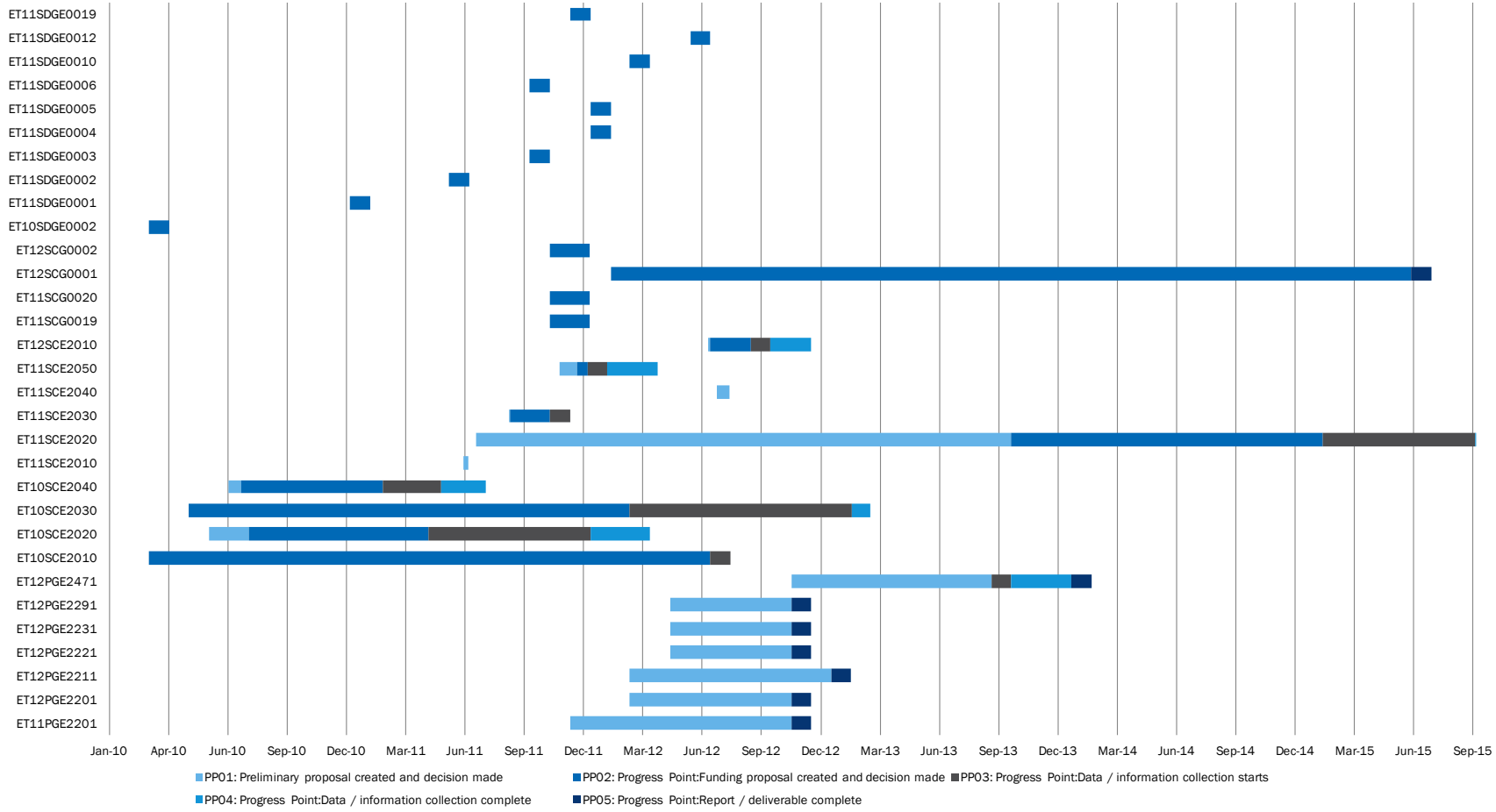


Table 24 provides details about each of the 31 Demonstration Showcase projects.

Table 24. Demonstration Showcase Project Description

IOU	#	Project ID	Project Name	Site Location	Residential	Commercial	Retrofit	New Construction	ZNE	Lighting	Controls	Building Shell	Other	Expected Cost	Status
PGE	1	ET11PGE2201	CLTC Lighting Demonstration Project	Technology Center		X	Unknown	Unknown		X				$120,000	Complete
PGE	2	ET12PGE2201	Food Service Technology Demo Kitchen	Restaurants in Berkeley, Pleasanton, Danville and San Francisco		X	X						X	$175,000	Complete
PGE	3	ET12PGE2211	ZNE Modular Classroom	Unknown		X	Unknown	Unknown	X				X	$558,310	Complete
PGE	4	ET12PGE2221	ZNE Demonstration Home	ETC facility, Stockton	X		X		X				X	$375,000	Complete
PGE	5	ET12PGE2231	ETC Lighting Demo Showcase	ETC facility, Stockton		X	X			X				$125,000	Complete
PGE	6	ET12PGE2291	PEC Lighting Demo Showcase	PEC, San Francisco		X	X			X				$125,000	Complete
PGE	7	ET12PGE2471	PG&E/Honda Smart Home Demonstration Showcase	Unknown	X		Unknown	Unknown					X	$390,000	Ongoing
SCE	1	ET10SCE2010	ZNE Tract Home Retrofit	Tract Home, Irvine	X		X		X				X	$1,000,000	Ongoing
SCE	2	ET10SCE2020	ZNE Home Retrofit	Single Family Home, San Bernardino	X		X		X				X	$200,000	Complete
SCE	3	ET10SCE2030	ZNE Commercial Focused Retrofit	Recreation Center, University of California Santa Barbara		X	X		X				X	$250,000	Ongoing
SCE	4	ET10SCE2040	ZNE New Home RFQ	Residential Tract Homes	X			X	X				X	$ 1,419	Complete
SCE	5	ET11SCE2010	ZNE Inverter Grid Impact Study	Grid Study	X	X	NA	NA	X				X	Cancelled before funding	Stopped
SCE	6	ET11SCE2020	ZNE Big-box Retail	Retail Store		X	X		X		X			$100,000	Complete
SCE	7	ET11SCE2030	ZNE New Home Site 1	Brookfield Homes - Edenglen Community	X			X	X				X	$50,000	Ongoing
SCE	8	ET11SCE2040	ZNE Low-Rise Office	Unknown		X	Unknown	Unknown	X				X	$150,000	Ongoing
SCE	9	ET11SCE2050	ZNE Residential Load Impact Forecast	Unknown	X		Unknown	Unknown	X				X	$40,000	Complete
SCE	10	ET12SCE2010	Impact of Smart Grid on Connected Homes	Unknown	X		Unknown	Unknown					X	Unknown	Complete

IOU	#	Project ID	Project Name	Site Location	Residential	Commercial	Retrofit	New Construction	ZNE	Lighting	Controls	Building Shell	Other	Expected Cost	Status
SCG	1	ET12SCG0001	CEC Pier RFP for Community Scale Renewable & ZNE PIER 12-503B (DS)	Community Scale Project	X		Unknown	Unknown	X				X	$150,000	Ongoing
SCG	2	ET12SCG0002	LAPD Metro Substation LEED Gold (DS)	Unknown		X	Unknown	Unknown			X			$ -	Ongoing
SCG	3	ET11SCG0019	Near Zero Energy for Existing Home (TA/DS)	Unknown	X		X		X					$100,000	Ongoing
SCG	4	ET11SCG0020	Smart Gas Home Demo (TA/DS)	Unknown	X			X	X					$100,000	Stopped
SDGE	1	ET10SDGE0002	High Ceiling Lighting Options (DS)	Unknown		X	Unknown	Unknown		X				$20,000	Complete
SDGE	2	ET11SDGE0001	Energy Innovation Center (DS)	Energy Innovation Center		X		X					X	$300,000	Complete
SDGE	3	ET11SDGE0002	Food Bank Office of the Future (DS)	Office, San Diego		X	Unknown	Unknown					X	$300,000	Ongoing
SDGE	4	ET11SDGE0003	San Diego Zoo Gift Shop LED Lighting (DS)	Gift Shop, San Diego		X	Unknown	Unknown		X				$40,000	Complete
SDGE	5	ET11SDGE0004	Restaurant Ambient Lighting Demo Showcase (DS)	Restaurant, San Diego		X	X			X				$30,000	Complete
SDGE	6	ET11SDGE0005	LED Theater Stage Lighting (DS)	Theater, San Diego		X	X			X				$30,000	Complete
SDGE	7	ET11SDGE0006	Bi-Level LED Parking Structure (DS)	Parking Structure, San Diego		X	X			X				$25,000	Complete
SDGE	8	ET11SDGE0010	Sports Arena Electronic HID Lighting (DS)	Sports Arena, San Diego		X	Unknown	Unknown		X				$40,000	Complete
SDGE	9	ET11SDGE0012	PUSD Electronic HID Lighting (DS)	Unknown		X	Unknown	Unknown		X				$20,000	Complete
SDGE	10	ET11SDGE0019	Low Cost CA Solar Initiative (DS)	Unknown	X		Unknown	Unknown					X	$140,000	Ongoing

B.1.5 PY2009 ETP Projects

For completeness, the following table provides 2009 ETP projects, although these projects were outside the scope of this evaluation effort.

Table 25: PY2009 Projects N	Project ID	IOU	Project Name	Project Description
1	ET09PGE0901	PGE	Water Energy Study - SJWC	This report presents a feasibility study for implementing an energy-pumping optimization algorithm through a Supervisor Control and Data Acquisition (SCADA) System using real-time energy consumption data. The study was performed as a collaboration between the San Jose Water Company (SJWC), Pacific Gas and Electric Co. (PG&E), and BASE Energy, Inc. (BASE) over the period of one and a half years. Four well pump stations at SJWC were selected for the study: two single well pump stations, one two-well pump station, and one multiple well pump (4 well pumps and three booster pumps) station. The main results of this study were: • The utility revenue meter energy data can be used to optimize the water pumping energy; • The utility revenue meter can be easily interconnected to a SCADA system to supply real-time energy data; and • A water pumping energy optimization methodology that utilizes real-time energy consumption data can result in electrical energy savings.
2	ET09PGE0902	PGE	LEDs for Hospital Operating Rooms	The high concentration of lights in Hospital ORs leads to a significant amount of heat generated in a small space. The cooling load of the OR can often drive the cooling provided to the entire hospital, with a significant amount of reheat needed in other areas of the hospital. Removing the heat from hospital ORs while improving lighting quality (and lifetime) can provide HVAC savings across the entire hospital. LED surgical lights would consume 54% of the energy required by halogens. Other significant benefits of the LED fixtures are an adjustable beam temperature (i.e. color), they are not subject to immediate burn out and the bulbs have a longer useful life.
3	ET09PGE0906	PGE	LED Street Lighting and Network Controls	This report summarizes an assessment project conducted to study the performance of light emitting diode (LED) luminaires with network controls in a street lighting application. The project included installation of LED street lights with network controls on public roadways in San Francisco Public Utilities Commission (SFPUC) service territory in San Francisco, California. Quantitative light and electrical power measurements as well as surface and overhead photographs from a maintenance

Table 25: PY2009 Projects N	Project ID	IOU	Project Name	Project Description
				bucket truck were taken to compare base case high pressure sodium (HPS) performance with that of the LED replacement luminaires. Network controls functionality and monitoring capabilities were also tested and qualitative satisfaction with the system was gauged through a user survey. Estimated economic performance of the LED streets and network controls was compared to that of the incumbent HPS street lights.
4	ET09PGE0908	PGE	Smart Cool & Intellidyne Compressor Control	This project was initiated within the scope of PG&E's Emerging Technology Program to evaluate the SmartCool™ ECO^3 ™ Refrigeration Controller, distributed by AirTest Technologies Inc. The controller is purported to save energy by managing the compressor cycling so that the amount of time operated in the least efficient part of the cycle is reduced. The device was installed in the Food Service Technology Center walk-in freezer and tested to determine the effects on energy consumption and temperature performance as compared to the baseline test configuration without the device.
5	ET09PGE0909	PGE	Whole Product Definition for large Offices	Large office buildings in PG&E's service territory use almost 20 percent of the commercial electricity and consume more than 12 percent of the natural gas delivered to commercial customers. A prior study found that achieving energy efficiency alone was not sufficient to motivate decisionmakers at these facilities to invest in and adopt energy-saving measures. Instead, the research suggested that a "whole product" approach was more convincing. Based on Regis McKenna's concept of a whole product, an energy efficiency whole product is a generic (or core) energy efficiency product that is enhanced by whatever is needed to compel a customer to buy in. The previous research indicated that being seen as a sustainable organization or green building has a positive impact on the value of an owner's property or business. It also showed that bundling energy savings measures could reduce building energy use by up to 30 percent. Finally, the research also identified links to LEED-based initiatives to align energy efficiency programs with sustainability goals, but the link was not enough to spur interest in aggressive (30%+) energy savings programs. The purpose of the current study is to design and evaluate concepts that align the features and benefits of a commercial building energy efficiency program with the goals of building owners and other stakeholders involved in implementing energy efficiency projects.

Table 25: PY2009 Projects N	Project ID	IOU	Project Name	Project Description
6	ET09PGE0910	PGE	Greffen M2G Boiler Control	This project evaluated the performance of the Greffen M2G boiler control device at two customer sites in the PG&E service territory, including measurements that quantified boiler system efficiency both with and without the M2G. The tests did not show sufficient energy savings with to receive incentives under PG&E's Customized Retrofit Incentives Program.
7	ET09PGE0912	PGE	Data Center Air Management Research (e-Quest Datacenter Control Delivery)	Data centers are among the most energy-intensive facilities. Air management is not only imperative for energy management but also for thermal management. The goal of air management is to supply as little supply air as possible at as high temperature as possible without adversely affecting the thermal IT-equipment environment. Several common air management measures were included in the Computational Fluid Dynamics (CFD) modeling to explore the energy-saving potentials. Measured data were also included in an effort to verify the modeling. The results will help improve the prediction of energy savings as well as improve the DOE Air Management (AM) Software Tool.
8	ET09PGE0914	PGE	Street Lighting Network Controls Market Assessment	This report provides a technology and market assessment of emerging network control and monitoring systems in street lighting applications. Using network control and monitoring systems with streetlights has the potential to save a significant amount of energy. These systems offer the ability to more precisely control on/off schedules at dusk and dawn and represent a major shift from the traditional model of lights controlled only by photocontrols, with no operator feedback. Network systems provide citywide management and monitoring of streetlight assets from a remote location, including the potential to meter actual street lighting energy use for billing purposes. Network controls that offer a dimming capability can also provide energy savings through adaptive street lighting control, such as reducing lighting power as conditions change (i.e. lower traffic or pedestrian volume). Additional benefits from network controls can include reduced runtimes and detection of outages and "day-burners."
9	ET09PGE0917	PGE	Laboratory Testing of Heat Pump Water Heaters	A limited evaluation of two new heat pump water heaters (HPWHs) was conducted in the water heater laboratory at the PG&E San Ramon Technology Center. The objective of the testing was to investigate the operating characteristics of HPWHs in comparison with other types, and their energy savings potential and cost effectiveness. Most of the testing followed the test procedures described in the DOE standard water heater testing procedure.
10	ET09PGE0918	PGE	Laboratory Testing of Residential Pool Cleaners	In an effort to improve the power demand reduction and energy savings opportunity in PG&E's Swimming Pool Pump energy efficiency program, swimming pool cleaners, or sweeps, were tested and evaluation during 2009.

Table 25: PY2009 Projects N	Project ID	IOU	Project Name	Project Description
11	ET09PGE0919	PGE	Integrated Lighting System ET Technology Development	This study focuses on the economic and energy-saving potential of Integrated Lighting System Products (ILSPs) in open office buildings within the PG&E service area. The evaluation will be used to help encourage further develop of products that align well with utilities' energy-efficiency needs.
12	ET09PGE0920	PGE	Thin Client	The purpose of this study is to provide information that will assist PG&E in exploring new/alternative energy efficiency programs for Thin Clients, PCs, and Imaging equipment in the commercial segment. This study was designed to explore, obtain, and report the best data and insights on: * PC Usage States, (the amount of time devices are On, Off, Sleep) for selected industry-specific segments; * Imaging equipment (Printers and Multi-Function Printer/Scanner/Fax/Copier) Usage States (the amount of time devices are On, Off, Sleep) for selected industry-specific segments; and * Perspective from the individuals interviewed that would affect energy efficiency programs, their implications to driving adoption of PG&E energy efficiency programs.
13	ET09PGE0921	PGE	EPRI Assessment of Retrofit Energy Savings Devices: BC International PowerBoss Interga	The PG&E Emerging Technologies Program participated in the EPRI testing of the Somar PowerBoss Integra motor controller on an AC induction motor. The motor controller has electronic switches with silicon controlled rectifiers (SCRs) http://en.wikipedia.org/wiki/Silicon-controlled_rectifier, or thyristers http://en.wikipedia.org/wiki/Thyrister, for pulsing the 60 Hz motor input voltage and current, and thereby controlling the 60 Hz electricity consumption per shaft horsepower. The pulsed electricity produces harmonic distortion. The pulsed electricity with harmonic distortion may cause the motor to slow down and consume more 60 Hz electricity per shaft horsepower and torque than indicated by the test meter. The test meter is calibrated for 60 Hz sinusoidal electricity, not the pulsed electricity with harmonic distortion. Any future testing of a motor controller (or other power supply) with electronic switches should isolate the power quality and revenue-type test meters from the pulsed electricity with harmonic distortion. The test rig with a voltage-stepdown (isolation) transformer http://en.wikipedia.org/wiki/Transformer and harmonic filter should enable comparative efficiency testing of the newer electronic dimmer technology and older transformer dimmer technology. A dynamometer should monitor the motor speed, and shaft horsepower and torque. The Somar PowerBoss Integra motor controller and other "power correction and power conditioning equipment" with no perceptible energy-efficiency potential do not qualify for a PG&E energy-efficiency incentive per the Statewide Offering Procedures Manual for Business, Summary of Ineligible Measures in Table 1.4.2,

Table 25: PY2009 Projects N	Project ID	IOU	Project Name	Project Description
				http://www.aesc-inc.com/download/spc/2012SPCDocs/UnifiedManual/Customized%201.0%20Policy.pdf.
14	ET09PGE0922	PGE	EPRI Assessment of Retrofit Energy Savings Devices: Dollar Energy Lighting Correction Unit	The PG&E Emerging Technologies Program participated in the EPRI testing of the Dollar electronic dimmer on some T8 fluorescent office lights and high-pressure sodium (HPS) parking lot lights. For both lighting types, the electronic dimmer has insulated gate bipolar transistors (IGBTs) http://en.wikipedia.org/wiki/Insulated-gate_bipolar_transistor that reduce the lighting efficiency or efficacy (lumens per Watt) at about twice the rate of reduction in lighting level (lumens) reduction. The electronic dimmer produces nearly-sinusoidal 60 Hz electricity that should not affect the accuracy of the 60 Hz sinusoidal-calibrated test meter. Any future efficiency testing of dimmers should compare the newer electronic dimmer technology to the older autotransformer or voltage-stepdown transformer http://en.wikipedia.org/wiki/Transformer dimmer technology over the expected range of lighting levels for the compatible fixtures, ballasts and lamps. Generally a dimmer for permanently reducing the light level is an energy conservation measure, not an energy efficiency measure. Dimmers and other "measures that save energy because of operational changes" do not qualify for a PG&E energy-efficiency incentive per the Statewide Offering Procedures Manual for Business, Summary of Ineligible Measures in Table 1.4.2, http://www.aesc-inc.com/download/spc/2012SPCDocs/UnifiedManual/Customized%201.0%20Policy.pdf. correction unit (LCU) by Dollar Energy Group, Inc. Two units were tested at an office building in Dallas, Texas. Each LCU was connected in series with a lighting circuit and had a bypass switch installed so that each unit could be switched in and out of the circuit it affected. The LCU was designed to lower the voltage to the lights and therefore create energy savings. The output of the LCU is a sine wave instead of a clipped or square wave.
15	ET09PGE0923	PGE	EPRI Assessment of Retrofit Energy Savings Devices: KVAR Energy Controller	The PG&E Emerging Technologies Program participated in the EPRI testing of a KVAR Energy Savings Corp. residential energy controller with power factor correction capacitors. The test confirms the physics of no perceptible 60 Hz electricity savings potential for residential power factor correction capacitors http://en.wikipedia.org/wiki/Power_factor. The test highlights the significant safety & reliability risk for not correctly engineering or installing power factor correction capacitors in residential, commercial, industrial and agricultural facilities per the Electrical Apparatus Service Organization (EASA), http://www.easa.com/, or other pertinent criteria for preventing resonance, http://en.wikipedia.org/wiki/Resonance, or leading power factor that could cause overvoltage or inefficiency in some circuits, motors or other equipment. The KVAR residential energy controller and other "power correction and power conditioning equipment" with no perceptible energy-efficiency

Table 25: PY2009 Projects N	Project ID	IOU	Project Name	Project Description
				potential do not qualify for a PG&E energy-efficiency incentive per the Statewide Offering Procedures Manual for Business, Summary of Ineligible Measures in Table 1.4.2, http://www.aesc-inc.com/download/spc/2012SPCDocs/UnifiedManual/Customized%201.0%20Policy.pdf energy controller by KVAR Energy Savings Corporation. The specific part number tested was the PU-1200. This device is a 240-volt unit designed for installation at the residential customer's breaker panel. As of August 26, 2010, energy savings claims for the residential application of this device range from 6% to 10%, as indicated on KVAR's website. Various product distributors claim similar or greater savings on their websites. The testing took place under controlled conditions at the Electric Power Research Institute's (EPRI's) laboratory in Knoxville, Tennessee.
16	ET09PGE0924	PGE	EPRI Assessment of Retrofit Energy Savings Devices: Line-Side Electronic Dimmer	This project included four types of detailed tests on the iDim electronic dimmer in the Electric Power Research Institute's (EPRI's) Knoxville Laboratory.
17	ET09PGE0925	PGE	EPRI Assessment of Retrofit Energy Savings Devices: Power Efficiency Corporation's Three-Phase Motor Efficiency Controller	The PG&E Emerging Technologies Program participated in the EPRI testing of a Power Efficiency Corp. motor controller on an AC induction motor. The motor controller has electronic switches with silicon controlled rectifiers (SCRs) http://en.wikipedia.org/wiki/Silicon-controlled_rectifier, or thyristers http://en.wikipedia.org/wiki/Thyrister, for pulsing the 60 Hz motor input voltage and current, and thereby controlling the 60 Hz electricity consumption per shaft horsepower. The pulsed electricity produces harmonic distortion. The pulsed electricity with harmonic distortion may cause the motor to slow down and consume more 60 Hz electricity per shaft horsepower and torque than indicated by the test meter. The test meter is calibrated for 60 Hz sinusoidal electricity, not the pulsed electricity with harmonic distortion. Any future testing of a motor controller (or other power supply) with electronic switches should isolate the power quality and revenue-type test meters from the pulsed electricity with harmonic distortion. The test rig with a voltage-stepdown (isolation) transformer http://en.wikipedia.org/wiki/Transformer and harmonic filter should enable comparative efficiency testing of the newer electronic dimmer technology and older transformer dimmer technology. A dynamometer should monitor the motor speed, and shaft horsepower and torque. The Power Efficiency Corp. motor controller and other "power correction and power conditioning equipment" with no perceptible energy-efficiency potential do not qualify for a PG&E energy-efficiency incentive per the Statewide Offering Procedures Manual for Business, Summary of Ineligible Measures in Table 1.4.2, http://www.aesc-inc.com/download/spc/2012SPCDocs/UnifiedManual/Customized%201.0%20Policy.pdf

Table 25: PY2009 Projects N	Project ID	IOU	Project Name	Project Description
18	ET09PGE2213	PGE	Strategic Options for Increasing Energy Efficiency in Large Office Buildings – Phase III	PG&E has been undertaking a multi-phase and innovative energy efficiency program development effort to understand the large commercial building market in its service territory, to understand the reasoning behind the relatively low levels of adoption of energy efficiency measures, and to implement strategic larger integrated energy saving options for increasing energy efficiency in large commercial buildings. The first phase of work classified the commercial building market and described the market's energy use. The second phase of research built on the initial research conclusion that being seen as a sustainable organization or having a green building has a positive impact on the value of an owner's property or business. In this study, potential concepts were tested with building owners and other stakeholders to see what would spur interest in aggressive (more than 30 percent) energy savings programs.
19	ET09SCE1010	SCE	LED Street Light Eval	
20	ET09SCE1050	SCE	DCV Temperature Control	
21	ET09SCE1090	SCE	Half Size Convection Oven Evaluation	
22	ET09SCE1210	SCE	Office of the Future Federal Building Demonstration	
23	ET09SCG0002	SCG	Controls for Raydronics System - Phase I (TA)	Assess Energx's proprietary controls for Raydronics combined space heating and domestic water
24	ET09SCG0005	SCG	Laundry Ozone Systems - NCI (TA)	The purpose of the project is to validate the potential of advanced ozone washer system
25	ET09SCG0006	SCG	Whole House Field Report (TA)	The purpose of the project was to generate data and evaluate a representative sample of twenty-six existing homes in various climate zones in Southern California
26	ET09SCG0007	SCG	Warm Mix Asphalt (TA)	
27	ET09SCG0008	SCG	M2G (TA)	Technology assessment to validate the performance of a boiler controller in human comfort application that measures the building load in real time

Table 25: PY2009 Projects N	Project ID	IOU	Project Name	Project Description
28	ET09SCG0009	SCG	Suntulit Assessment (TA)	The objective of this project is to demonstrate the efficacy of Suntulit's solution and to gather feedback from users to enhance the product's commercial viability
29	ET09SDGE0001	SDGE	Advanced Street Lighting Technologies Assessment	To determine energy savings potential and installation cost for advanced streetlight technologies
30	ET09SDGE0003	SDGE	Hotel Guest Room Energy Controls (TA)	To determine energy savings potential and installation cost in hotel guest rooms
31	ET09SDGE0004	SDGE	LED High Bay Lighting Assessment (TA)	To determine the energy savings potential and installation cost for LED high bay lighting systems
32	ET09SDGE0005	SDGE	LED Direct Replacement Lamp Lighting Assess. (TA)	To determine energy savings potential and installation cost in the multi-family housing segment
33	ET09SDGE0006	SDGE	Light Box Technology Comparison (TA)	To determine energy savings potential and installation cost in light box applications such as menu board
34	ET09SDGE0007	SDGE	LED Retail Refrigerated Freezer Case (TA/DS/SFP)	This assessment is to determine energy savings potential and installation cost in the retail market segment with refrigerated display cases
35	ET09SDGE0008	SDGE	City of San Marcos Street Light Assessment (TA)	To determine energy savings potential and installation cost for advanced streetlight technologies
36	ET09SDGE0009	SDGE	Parking Structure LED Lighting Assessment (TA)	To determine energy savings potential and installation cost for LED technologies for outdoor area lighting applications
37	ET09SDGE0010	SDGE	Outdoor Area LED Lighting Assessment (TA)	To determine energy savings potential and installation cost for LED technologies for outdoor area lighting applications
38	ET09SDGE0012	SDGE	Parking Lot LED Lighting Assessment (TA/DS)	To determine energy savings potential and installation cost for LED technologies for outdoor area lighting applications

Table 25: PY2009 Projects N	Project ID	IOU	Project Name	Project Description
39	ET09SDGE0013	SDGE	Advanced Lighting Controls System Assessment (TA)	To determine the energy savings potential and installation cost of the components of the Advanced Energy Office - Office of the Future
40	ET09SDGE0014	SDGE	Office of the Future 25% Solution (TA/DS)	To determine the energy savings potential and installation cost of the components of the Advanced Energy Office-Office of the Future

B.1.6 AGGREGATE ANALYSIS DETAILED FINDINGS

Below we provide detailed preliminary results from our aggregate analysis effort.

AGGREGATE ANALYSIS

Results

July 18, 2013

Opinion Dynamics

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Aggregate Analysis

Aggregate analysis involves the analysis of a variety of data collected for all of the projects in each utility's ETP portfolio to provide a statistical overview of the ETP portfolio.*

We used the aggregate analysis to:

- Verify program implementation plan (PIP) objectives and Program Performance Metrics (PPMs), where relevant
- Characterize the ET portfolio and identify and track movement of measures into the IOU EE portfolio via the ETP database "recommended for transfer" variable as well as other variables
- Provide a statistical overview of the ETP portfolio, including technical potential of measures recommended to the EE portfolio

The source for the Aggregate Analysis include:

- PG&E ETP Database received May 2013
- SCE ETP Database received May 2013
- SCG ETP Database received May 2013
- SDG&E ETP Database received May 2013

*The aggregate analysis description is based on the California Evaluation Framework for the Emerging Technologies Program.

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Aggregate Analysis Evaluation Findings 2

Program Implementation Plan (PIP) Objectives

Initiating and completing projects.

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Aggregate Analysis Evaluation Findings 3

Assessment of PIP Objectives

We used the aggregate analysis to assess the following PIP program objectives:

Program Elements	PG&E	SCE	SCG	SDG&E	Statewide
Assess Technology Assessment measures^	28	30	7	8	73
Adopted Technology measures into energy efficiency programs^	12	15	4	4	35
Scaled Field Placement Initiate and/or complete SFP ^	7	4	2	2	15
Demonstration Showcases Initiated	5	5	2	2	14
Market and Behavioral Studies Initiated	1	1	1	1	4
Technology Development Support Initiated projects	2	2	1	1	6
TRIO Events (3 events per year or 9 per program cycle)	3	3	1.5*	1.5*	9
Technology Test Centers (SCE)	NA	Complete ZNE test center	NA	NA	NA

^ These objectives are also specific Program Performance Metrics (PPMs)

* The PIP notes that SCG and SDG&E should have 3 events per year, as such the 3 events are split evenly across the two IOUs

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Aggregate Analysis Evaluation Findings 4

Overall, ETP has achieved substantially more than the PIP objectives

Using aggregate analysis, our results show that:

- The overall number of projects initiated for each element exceeded Statewide objectives
- *Note that adoption findings are sourced from IOU self-reported data from the PPM Report submitted in June 2013. "Adoption" means measure is available to end-use customers through IOU programs. Adoption of a measure may be attributed to one or more ET sub-programs. Note that the ETP program database does not track measures adopted into the program.

Program Elements	Statewide Objectives	Statewide Achieved	Percent
Assess Technology Assessment measures	73	188	258%
Adopted Technology Assessment measures into energy efficiency programs*	35	9 projects and 56 measures	Achieved
Scaled Field Placement Initiate and/or complete SFP	15	30	200%
Demonstration Showcases Initiated	14	31	221%
Market and Behavioral Studies Initiated	4	21	525%
Technology Development Support Initiated projects	6	18	300%
TRIO Events (3 events per year or 9 per program cycle)	9	14	156%

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Aggregate Analysis Evaluation Findings 5

Each of the IOUs are exceeding PIP objectives

- Statewide, the IOUs have met 250% of the PIP objectives in PY2010-2012
- The IOUs exceeded the number of projects initiated compared to objectives for each element
- Each of the four IOUs exceeded the number of projects initiated

* Notably, the program has up to six years following the initiation of the projects to complete the project (and spend the allocated budget).

ETP Element	2010-2012 PIP Objective (initiated projects)	Projects initiated in 2010-2012	% of Project initiated vs. Objective
Technology Assessments	73	188	258%
Scaled Field Placement	15	30	200%
Demonstration Showcase	14	31	221%
Market and Behavioral Studies	4	21	525%
Technology Development Support	6	18	200%
TRIO	3 per year	14	156%
Total	**121**	**302**	**250%**

ETP IOUs	2010-2012 PIP Objective (initiated projects)	Projects initiated in 2010-2012	% of Project initiated vs. Objective
PG&E	46	97	211%
SCE	45	127	282%
SCG	15	40	276%
SDG&E	16	38	245%
Total	**121**	**302**	**250%**

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Aggregate Analysis Evaluation Findings 6

Notably, the IOUs can initiate different projects for the same technology

- ETP objectives are based on the number of projects initiated, however, different projects can be developed for the same technology
- We attempted to identify repeat technologies. However, given the lack of data, this was difficult. We provide examples of repeat technologies in the table below.

ETP IOUs	ETP Project Number	Project Name	Project Type	Technology
PGE	ET11PGE1071	ET Home Energy Management Lab Tech Assessment Smart Thermostats	TA	Smart Thermostat in homes
PGE	ET11PGE1072	ET Home Energy Management Field Tech Assessment Smart Thermostats	TA	
PGE	ET11PGE3073	ET Home Energy Management Scaled Field Placement (Phase A) Smart Thermostats	SFP	
SCE	ET10SCE1230	L Prize A-Lamp Laboratory Assessment	TA	LED lamps
SCE	ET10SCE1220	L Prize A-Lamp for Hospitality Applications	TA	
PGE	ET12PGE3151	Food Service Tech Load Shifting Ice Machines (Phase A)	SFP	Ice Machines
PGE	ET12PGE3152	Food Service Tech Load Shifting Ice Machines (Phase B)	SFP	
PGE	ET11PGE3162	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase B)	SFP	Energy Management Systems
PGE	ET11PGE3161	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase A)	SFP	

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Aggregate Analysis Evaluation Findings 7

Overall, ETP spent 75% of budget, with the remainder allocated for ongoing projects initiated in PY2010-2012

- Overall, the IOUs have spent 75% of the budget and have allocated money to ongoing projects, therefore they anticipate spending all of the budget*
- Each element is meeting objectives within budget

* Notably, the program has up to six years following the initiation of the projects to complete the project (and spend the allocated budget).

ETP Element	2010-2012 Program Budget	Program Expenditures (Inception-To-Dec 2012)	% of Budget Spent	Average Cost per Project
Technology Assessments	$ 23,857,667	$ 21,076,220	88%	$58,394
Scaled Field Placement	$ 6,040,132	$ 3,372,124	56%	$212,239
Demonstration Showcase	$ 6,115,594	$ 3,681,809	60%	$170,853
Market and Behavioral Studies	$ 1,050,008	$ 1,026,244	98%	$53,568
Technology Development Support	$ 1,133,631	$ 845,730	75%	$71,506
TRIO	$ 2,276,858	$ 1,035,136	45%	$73,938
Technology Test Centers	$ 2,125,284	$ 1,135,678	53%	NA
Program Mgmt & CPUC Reporting	$ 657,283	$ 212,862	32%	NA
Total	**$ 43,256,456**	**$ 32,385,804**	**75%**	**NA**

ETP IOUs	2010-2012 Program Revised Budget	Program Expenditures (Inception-To-Date)	% of Budget Spent 2010-2012
PG&E	$18,495,877	$13,597,332	74%
SCE	$17,194,725	$12,219,014	71%
SCG	$3,515,000	$2,618,068	74%
SDG&E	$4,050,854	$3,951,389	98%
Total	**$43,256,456**	**$32,385,804**	**75%**

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Aggregate Analysis Evaluation Findings 8

Program Performance Metric

The number of new "proven" ET measures adopted into the EE Portfolio.

Number of ETP measures which have undergone TA that are adopted into the EE portfolio.

Number of ETP measures that have undergone SFP and are adopted into the EE portfolio.

Potential energy impacts of the adopted ET measures into the EE portfolio.

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Aggregate Analysis Evaluation Findings 9

Aggregate Analysis was used to assess 4 PPMs

Adoption Metrics:

1. The number of new "proven" ET measures adopted* into the EE Portfolio (no metric specified).
2. Number of ETP measures which have undergone TA that are adopted* into the EE portfolio, including but not limited to each of the following: Advanced HVAC technologies, High efficiency plug loads and appliances, Advanced lighting technologies (has a specified metric of initiating 73 TAs and adopting 35 TAs into the EE portfolio).
3. Number of ETP measures that have undergone SFP and are adopted* into the EE portfolio (has a specified metric of initiating 15 SFPs).

Technical Potential Metric:

1. Potential energy impacts* (energy savings and demand reduction) of the adopted ET measures into the EE portfolio** (no specified metric).

*"Adoption" means measure is available to end-use customers through IOU programs. Adoption of a measure may be attributed to one or more ET sub-programs.

** Potential energy impacts to be reported based on ET project findings and estimated market potential (reported through quarterly ET database updates) via statistical overview of the ETP portfolio, including technical potential of measures recommended to the EE portfolio.

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Aggregate Analysis Evaluation Findings 10

Program Performance Metrics: Adoption Metrics

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Aggregate Analysis Evaluation Findings 11

A note on adoption

- The data provided in this presentation come from two sources:
  - 1) Measures recommended for adoption are sourced from the ETP database
  - 2) Measures adopted are sourced from self-reported values provided by the IOUs on June 3, 2013 within their PPM Report
  - In some cases, these two data sources are inconsistent

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PPM: ETP staff self-reports having met their adoption metrics

- According to IOU data, ETP met their TA adoption objective
- There were no numeric adoption objectives overall or for SFP, but ETP had a PPM to have measures adopted into the IOU EE portfolio

ETP IOUs	PIP TA Adoption Objective*	Adopted**	Recommended for Transfer	Recommendation Decision Pending	Not Recommended	Not Applicable for Transfer***
Overall (All Elements)	None	19 projects and 58 measures	61	29	51	14
Technology Assessment	35	9 projects and 56 measures	34	17	35	2
Scaled Field Placement	None	5 projects and 3 measures	11	4	2	0

*There are no adoption metrics for SFP.

** Sourced from IOU self-reported data from the PPM Report submitted in June 2013. "Adoption" means measure is available to end-use customers through IOU programs. Adoption of a measure may be attributed to one or more ET sub-programs. Note that the ETP program database does not track measures adopted into the program.

*** Those projects meant for verification and or helping other projects and can not necessarily be adopted into a portfolio are classified as 'not applicable for transfer' by the evaluation team

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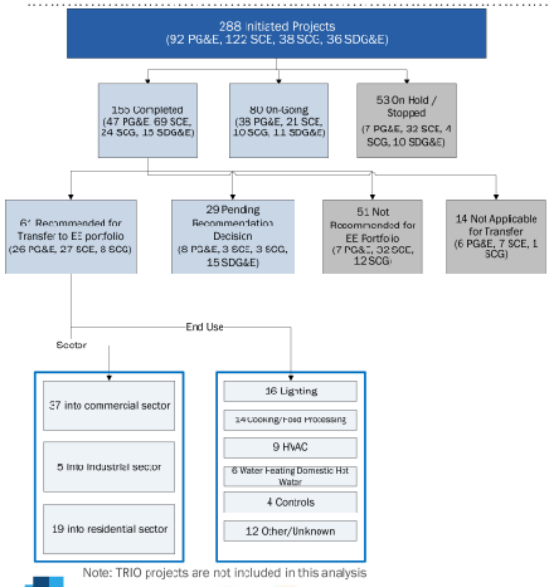
PPM: ETP projects recommended for transfer are primarily for lighting, cooking/food processing and HVAC end uses



Note: TRIO projects are not included in this analysis

- We found that ETP is aligned with the PPMs for lighting, HVAC, plug-loads and controls end uses
- Additionally, while the projects are primarily in the commercial and industrial sectors, about 30% of the projects are in the residential sector

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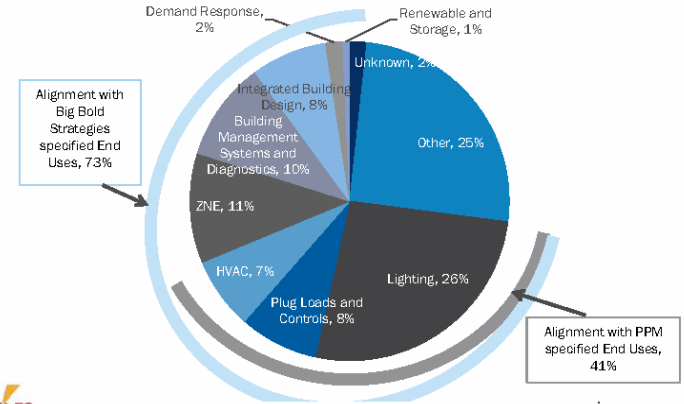
Overall, about three quarters of the projects are within the specified R&T Framework to support California's Big Bold Strategies

- The Research & Technology (R&T) Chapter of the 2009 California Long Term Energy Efficiency Strategic Plan (CEESP) calls for actions that help California achieve the Big Bold Energy Efficient Strategies established by the CPUC and CEC. The chapter outlines actions that are needed to develop the following technology areas: Integrated Building Design (whole building improvement), Building Management Systems, and Diagnostics; Plug Loads and Controls; Climate Appropriate HVAC; and Lighting
- We categorized the ETP projects by the technologies in the R&T framework; about 3/4th of the projects fall within the key R&T framework areas outlined in the CEESP
- The PPMs outline three specific technology areas; Lighting, Plug Loads and Controls, and HVAC; about 40% of ETP projects cover these areas

Statewide Project Type by End Use (n=288)



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While there is no specific metric, the ETP database shows technical potential for many measures

- We used data provided by the IOUs in the ETP database for completed projects to calculate technical potential (may not reflect self-reported adopted measures from IOU PPM Report)
- We performed some QA/QC on the data, and calculated technical potential by technology (as opposed to by project)
- Of the 61 completed projects recommended for transfer, 40 had sufficient data to calculate technical potential
- Of the 29 completed projects with a decision pending, 16 had sufficient data to calculate technical potential
- Notably, the savings potential information was unavailable for SCG projects and as such this data could be an underestimation of overall technical savings potential

Complete, Recommended for Transfer	MWh Potential	MW Potential	Therm Potential
PG&E	350,347,374	64,747	504,124,706
SCE	1,190,026	394	(122,767)
SCG	Unknown	Unknown	Unknown
SDG&E	-	-	-
Statewide	**351,537,400**	**65,141**	**504,001,938**

Complete, Decision Pending	MWh Potential	kW Potential	Therm Potential
PG&E	636,273	16.46	8,466,569
SCE	2,230	0.36	-
SCG	-	-	
SDG&E	54,378	4.68	33,500
Statewide	**692,882**	**21.51**	**8,500,069**

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ETP staff report achievement of PPMs

Sub-Program	Metric	PG&E	SCE	SDG&E	SCG
Overall	The number of new "proven" ET measures adopted into the EE Portfolio.	19 projects	22 measures	31 measures	5 measures
Technology Assessment	Number of ETP measures which have undergone TA that are adopted into the EE portfolio, including but not limited to each of the following: (a) Advance HVAC technologies, (b) High efficiency plug loads and appliances, (c) Advanced lighting technologies	9 projects	22 measures	31 measures	3 measures
Scaled Field Placement	Number of ETP measures that have undergone SFP and are adopted into the EE portfolio	5 projects	2 measures	0 measures	1 Measure

"Adoption" means measure is available to end-use customers through IOU programs. Adoption of a measure may be attributed to one or more ET sub-programs. Note that the ETP program database does not track measures adopted into the program.

Source: IOU PPM Report submitted June 2013. We note that some of these values are internally inconsistent.

Primary Performance Metric:

1. Recommended measures represent 351,537 GWh, 65 GW and 504,001,938 therms
   *Note does not reflect IOU reported adopted measures, rather measures recommended for transfer.

Other Achievements:

1. The ETP program has exceeded all objectives (250%) of program wide objectives
2. ETP spent 75% of budget, with the remaining budget allocated for ongoing projects
3. About three quarters of the projects fall within the key Big Bold Goal areas outlined in the CEESP

Source: ETP Database review

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Data Issues with the ETP Databases

We identified the following program tracking issues in the ETP database, including:

- Incomplete or missing information
  - Example: missing technical potential data for all SCG's completed projects and missing technical potential for 32 more projects from both PG&E and SCE
  - Example: 71 projects do not have a project origin source
  - Example: 27 projects do not have designated audience for the project and an additional 93 have a designation of "none"
- Inconsistent information across variables
  - Specifically the Status of the project: there are inconsistencies across the variables that specify project status, whether a technology was recommended for adoption, the measures it was recommended for and the progress points – hence making a conclusion regarding project status difficult
- Lack of information on measure adoption
  - Of these 34 completed projects recommended for transfer, only 8 have the EE program measure number they were transferred to
- Lack of a QA process
  - The Evaluation Team performed a QA/QC on the ETP databases and the data received was revised several times before an analysis could be performed
  - Additionally, the Evaluation Team performed QA/QC on the data for calculating the technical potential as the data fields were not filled in consistently. For example, some projects had overall technical potential in the field meant for kWh per site

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Aggregate Analysis Evaluation Findings 20

Appendix

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Aggregate Analysis Evaluation Findings 21

PPM: ETP met adoption PPMs

- There are three PPMs related to this objective: (1) number of new "proven" ET measures adopted into the EE portfolio, (2) Number of ETP measures which have undergone TA that are adopted into the EE portfolio and (3) Number of ETP measures that have undergone SFP and are adopted into the EE portfolio
  - The program has up to six years following the initiation of the projects to complete the project

ETP IOUs	PIP TA Adoption Objective*	Adopted**	Recommended for Transfer	Recommendation Decision Pending	Not Recommended	Not Applicable for Transfer***
PG&E	12	9 projects	26	8	7	6
SCE	15	22 measures	27	3	32	7
SCG	4	31 measures	8	3	12	1
SDG&E	4	3 measures	0	15	0	0
Statewide	**35**	**9 projects; 56 measures**	**61**	**29**	**51**	**14**

*The PIPs only have specific adoption objectives for the Technology Assessment element

** Sourced from IOU self-reported data from the PPM Report submitted in June 2013. "Adoption" means measure is available to end-use customers through IOU programs. Adoption of a measure may be attributed to one or more ET sub-programs. Note that the ETP program database does not track measures adopted into the program

*** Those projects meant for verification and or helping other projects and can not necessarily be adopted into a portfolio are classified as 'not applicable for transfer' by the evaluation team

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Aggregate Analysis Evaluation Findings 22

Scaled Field Placement projects are recommended for transfer primarily to commercial sector

- Majority of the 11 Scaled Field Placement projects recommended for transfer are for the commercial sector
- Of these 11 projects, five have the EE program measure number they were transferred to

ETP IOUs	ETP Project Number	Project Name	Technology	EE Program Recommended for Technology Transfer
PGE	ET11PGE3161	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase A)	Energy Management System	Commercial
PGE	ET11PGE3162	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase B)	Energy Management System	Commercial
PGE	ET11PGE3181	Follow Up Linear Panel and Controls Study (GSA)	LED lighting controls	Lighting
PGE	ET12PGE3151	Food Service Tech Load Shifting Ice Machines (Phase A)	Food Services, Ice Machines, Demand Response	Commercial Food Services
PGE	ET12PGE3152	Food Service Tech Load Shifting Ice Machines (Phase B)	Food Services, Ice Machines, Demand Response	Commercial Food Services
PGE	ET12PGE3181	Comprehensive HVAC RTU for SMB	HVAC	Commercial HVAC
PGE	ET12PGE3191	Water Heaters Alt. Technologies (Phase A)	Water heaters	Residential (HEER)
PGE	ET12PGE3301	PAR/MR LED Pilot	LED replacement lamps	Lighting
PGE	ET12PGE3341	First Fuel SFP	Energy Management Information Systems	Commercial
PGE	ET12PGE3351	Safeway - Advanced LED Track Fixtures	LED Lighting	Lighting
SCG	ET10SCG0005	Energx Raydronics Control (SFP)	The Energx controls for combined space heating and domestic water system	Residential energy efficiency

Note: ET10, 11, or 12 indicates the year the project was initiated.

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Aggregate Analysis Evaluation Findings 23

Technology Assessments are recommended for transfer primarily to the commercial sector

- A total of 34 technologies recommended for transfer
- Of the 34 Technology Assessments recommended for transfer, 14 are for the commercial and industrial sector, 4 are for the residential sector and the remaining 16 are either pending, deemed, or unknown
- Of these 34 projects, only 8 have the EE program measure number they were transferred to

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Aggregate Analysis Evaluation Findings 24

PG&E Technology Assessments

- The 6 PG&E Technology Assessments recommended for transfer are equally divided between the commercial and residential sectors
- Of these 6 projects, two have the EE program measure number they were transferred to

ETP IOUs	ETP Project Number	Project Name	Technology	EE Program Recommended for Technology Transfer
PGE	ET10PGE1001	Heat Pump Water Heaters (HPWH) Field Study	Heat Pump Water Heater (HPWH)	Residential, Mass Markets
PGE	ET10PGE1031	Carbon and Energy Management Systems	Energy Management Software	Commercial, Grocery Sector
PGE	ET11PGE1081	Advance Radiant HVAC System Lab Test	Advanced Radiant HVAC System	Residential
PGE	ET11PGE1082	Advance Radiant HVAC System Field Test	Advanced Radiant HVAC System	Residential
PGE	ET12PGE1111	Packaged HVAC Advanced Controls and Sensors Technical Assessment	Connected t-stat, digital economizer controller and DCV retrofit kit	Commercial
PGE	ET12PGE1011	Assessment of Directional LEDs	LED directional replacement lamps- PAR30 and PAR38	Lighting

Note: ET10, 11, or 12 indicates the year the project was initiated.

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Aggregate Analysis Evaluation Findings 25

SCE Technology Assessments (1 of 2)

- The 24 SCE Technology Assessments recommended for transfer are mostly for the commercial sector
- Of these 24 projects, six have the EE program measure number they were transferred to

ETP IOUs	ETP Project Number	Project Name	Technology	EE Program Recommended for Technology Transfer
SCE	ET10SCE3010	LED Street Lighting	LED Street Light	Express solutions, customized solutions
SCE	ET10SCE1230	L Prize A-Lamp Laboratory Assessment	LED replacement for a 60W incandescent A lamp	Deemed
SCE	ET10SCE1020	Combination Ovens for Foodservice Applications	Combination Ovens	Commercial
SCE	ET10SCE1030	Liquid Desiccant AC for Grocery Stores	Liquid Desiccant System	HVAC
SCE	ET10SCE1070	VSD for Die Casters	Variable Speed Drive Motor	Pending
SCE	ET10SCE1330	Combination Ovens for Food Service	Combination oven	Commercial
SCE	ET10SCE1390	Steamers for Food Service Applications	Steamers	Commercial
SCE	ET10SCE1410	High Density Holding Cabinets for Food Service	High Density Holding Cabinets	Commercial
SCE	ET10SCE1430	Dry Well for Food Service	See info in ET11SCE1140	Commercial
SCE	ET10SCE1440	Steamer/Kettle for Food Service Applications	Microwave steamer	Commercial
SCE	ET10SCE1450	Vacuum Sealing/Packaging Machines for Food Service	Vacuum packagers	Commercial

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Aggregate Analysis Evaluation Findings 26

SCE Technology Assessments (2 of 2)

ETP IOUs	ETP Project Number	Project Name	Technology	EE Program Recommended for Technology Transfer
SCE	ET10SCE1220	L Prize A-Lamp for Hospitality Applications	LED Light	Express solutions, upstream lighting
SCE	ET10SCE1130	LED Light for Commercial Pools	LED Pool lamp or fixture	Customized
SCE	ET10SCE1160	Blower for Industrial Applications	Compressed Air Blower	New and retrofit
SCE	ET10SCE1290	LED A-Lamp Laboratory Assessment	LED lamp	Customized and express.
SCE	ET10SCE1310	Hot Food Holding Cabinets for Foodservice	Unknown	Commercial
SCE	ET11SCE1040	High Efficiency Blower Under 50hp Retrofit	Air Blowers	Industrial
SCE	ET11SCE1130	Evaporator Fan Delay Control	Controls	Deemed
SCE	ET11SCE1140	Hot Food Induction Holding Well	Induction holding wells	Commercial
SCE	ET11SCE1220	LED Lighting for Cold Cases	LED canopy(172W connected) and area(204W connected	TBD
SCE	ET11SCE1221	Exterior LED Lights with Occupancy Sensors	LED wall and pole mtd fixtures.	TBD
SCE	ET12SCE1940	Cutting Edge Auto Showroom & Exterior Lighting	Lighting	TBD
SCE	ET12SCE1040	Cheese Melter For Food Service	Cheese melter - AJ Antunes Model CM-100	Commercial
SCE	ET12SCE1080	Conveyor Broilers for Foodservice Applications	Conveyor Broiler	Unknown

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Aggregate Analysis Evaluation Findings 27

SCG Technology Assessments

- The 4 SCG Technology Assessments recommended for transfer have one residential, one commercial sector project and two are unknown
- None of these 4 projects have the EE program measure number they were transferred to

ETP IOUs	ETP Project Number	Project Name	Technology	EE Program Recommended for Technology Transfer
SCG	ET10SCG0007	Hydrothermal Direct Steam Injection	HVAC - Space Heating, Water Heating Boiler	Unknown
SCG	ET10SCG0006	Cypress Steam Trap Monitoring	Other	Commercial energy efficiency
SCG	ET10SCG0010	GTI CEC HVAC Contract	HVAC - Space Cooling, HVAC - Space Heating	Residential energy efficiency
SCG	ET11SCG0001	Thermal Recycler	Unknown	Unknown

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Aggregate Analysis Evaluation Findings 28

SDG&E Technology Assessments

No projects were recommended for transfer in the ETP database.

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Aggregate Analysis Evaluation Findings 29

Appendix C. Data Collection Results

Below are presentations that describe detailed results from our data collection efforts.

C.1. IOU Energy Efficiency and Emerging Technologies Program staff Results

ENERGY EFFICIENCY PROGRAM
MANAGER SURVEY

Results

July 18, 2013

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Evaluation effort focused on effectiveness of completed ETP project reports sent to IOU Energy Efficiency Program Managers (EEPMs)

Upon the completion of a project, ETP staff typically provide reports to IOU energy efficiency program staff to support the transfer of emerging technologies into the IOU energy efficiency portfolio.

The focus of our evaluation effort was to survey energy efficiency program managers (EEPMs) to understand how effective these reports are for supporting technology transfer and other related program element outcomes.

This survey focused on reports for Technology Assessments (TA), Market & Behavioral Studies (MBS), Scaled Field Placements (SFP) and Demonstration Showcases (DS).

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EE Program Manager Survey Evaluation Results 2

Sample frame provided by IOUs

The IOUs provided the evaluation team with 48 IOU staff contacts who had received reports from the ETP during the PY2010-2012 program cycle.

Opinion Dynamics fielded an Internet survey focused on these 48 IOU staff. Notably, 8 of these staff were ETP staff. This was intentional as Market & Behavioral Studies, can target both ETP staff and IOU EEPMs.

This is a limitation of the study, as we surveyed the sample frame provided, but the full population of report recipients is unknown and we did not attempt to quantify the full potential target audience. Report recipients may include additional staff within the IOUs, or external stakeholders who receive the reports via the Emerging Technologies Coordinating Council website or other dissemination avenues.

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EE Program Manager Survey Evaluation Results 3

Data collection methodology

We fielded the survey to 48 IOU staff, and completed the survey with 20 energy efficiency program managers who had received information from the ETP during the 2010-2012 program cycle. Of these 20, 18 were EE program managers and 2 were ETP staff.

The survey was fielded from May 21 to June 14, 2013.

Population	48
Sample Frame	48
Completes	20
Response Rate	**48.8%**

Respondents of these 20 completed surveys read or were aware of 91 unique projects.

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EE Program Manager Survey Evaluation Results 4

Overall, survey respondents were roughly representative of the population of ETP EEPM report recipients provided by the IOUs

20 EE Program Staff and ETP staff responded to the survey out of a total of 48 staff.

The distribution of the 20 respondents to the survey were roughly proportional to the coverage of IOU program staff provided in our sample frame.

IOU	% of All Managers (Population) (N=48)	% of Respondents (Sample) (n=20)
PG&E	58% (28)	55% (11)
SCE	23% (11)	15% (3)
SCG	15% (7)	25% (5)
SDG&E	4% (2)	5% (1)
Total	100%	100%

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EE Program Manager Survey Evaluation Results 5

Survey measured outcomes on a randomly selected sub-set of all completed reports

More than one respondent could read the same report. Of the 20 respondents, they recalled 142.

To reduce respondent burden, we randomly sampled up to three reports that a respondent reported receiving, with priority given to capturing multiple report types per respondent (n=47).

	Total Reports	
Report Type	% of Reports Recalled (n=142)	% of Reports Sampled for Follow-Up (n=47)
TA	55% (78)	40% (19)
MBS	14% (20)	17% (8)
DS	14% (20)	17% (8)
SFP	16% (23)	19% (9)
Other	0% (0)	6% (3)
Total	100%	100%

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EE Program Manager Survey Evaluation Results 6

Overall, recalled reports covered a variety of end-uses

Overall, the type of reports by end-use that were recalled by survey respondents tended to focus more in lighting, HVAC and cooking equipment.

End-Use Type	% of All Reports Recalled (Sample) (n=142)
Lighting	37% (53)
HVAC	11% (15)
Cooking equipment	10% (14)
Software for rating building or managing	7% (10)
Zero net energy (ZNE)	4% (6)
Domestic hot water	6% (9)
Market study	4% (6)
Energy management systems and diagnostic	10% (14)
Thermostats	7% (10)
Refrigeration	0% (0)
Variable speed / frequency drives	1% (1)
Building envelope	1% (2)
Combustion	0% (0)
Heat recovery	1% (1)
Other	1% (1)

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EE Program Manager Survey Evaluation Results 7

Respondent Characterization

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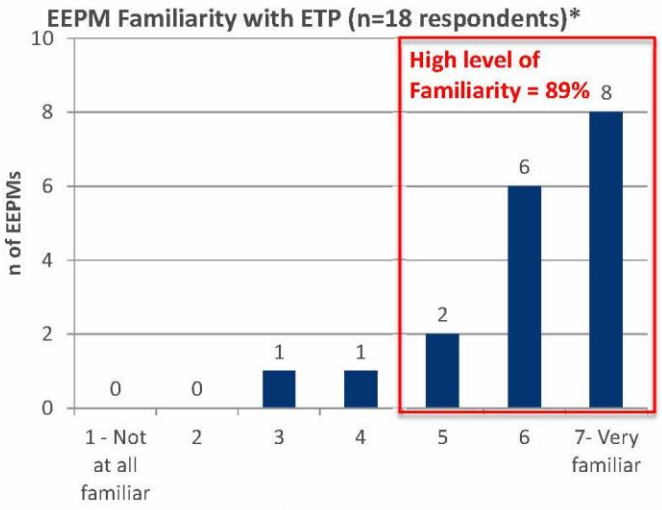
EE Program Manager Survey Evaluation Results 8

Overall, respondents are very familiar with ETP

100% of respondents have had direct contact with the ETP staff (of those who are not already ETP staff).

89% of non-ETP staffers said they were familiar with ETP (rating 5-7), and 78% of non-ETP staffers said they were "very familiar" with ETP (rating 6 -7). Their mean familiarity rating was 6.1.



*Excludes respondents who are part of ETP staff.

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EE Program Manager Survey Evaluation Results 9

Respondents work with multiple technologies

Technology areas	Respondents Who Work With the Technology (Mult. Resp., n=20)
HVAC	13
Lighting	11
Thermostats	11
Energy management systems and diagnostic	9
Refrigeration	9
Zero net energy (ZNE)	9
Domestic hot water	8
Software for rating building or managing	8
Building envelope	8
Variable speed / frequency drives	6
Cooking equipment	5
Combustion	3
Heat recovery	3
Steam trap	1
Other	3

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EE Program Manager Survey Evaluation Results 10

Most respondents said that the reports they recalled were relevant to technology areas that they worked in

Technology areas	Respondents who recall the reports (n=20)	Number of respondents who recall reports where reports are RELEVANT to tech area
HVAC	11	9 out of 11
Lighting	9	8 out of 9
Thermostats	3	3 out of 3
Energy management systems and diagnostic	6	5 out of 6
Refrigeration	3	3 out of 3
Zero net energy (ZNE)	4	3 out of 4
Domestic hot water	5	5 out of 5
Software for rating building or managing	3	2 out of 3
Building envelope	4	2 out of 4
Variable speed / frequency drives	2	1 out of 2
Cooking equipment	4	1 out of 4
Combustion	1	1 out of 1
Heat recovery	1	1 out of 1
Steam trap	0	0 out of 0
Other	5	0 out of 5

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EE Program Manager Survey Evaluation Results 11

Respondents tend to work in more than one sector

Sector area	% of Respondents (Multiple Response, n=20)
Commercial	15
Residential	13
Industrial	10
Agricultural	6

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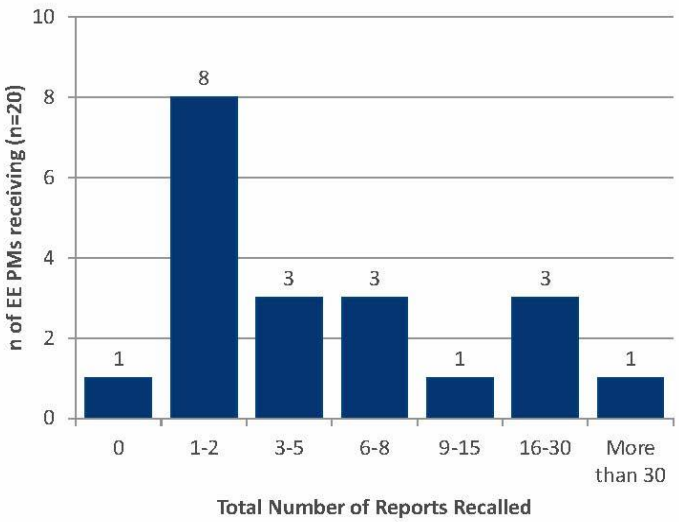
EE Program Manager Survey Evaluation Results 12

Most respondents recall more than one report and shared information with others in their organization

75% recalled more than one report. The mean number of reports recalled was 7.1. One respondent could not recall receiving any reports.

75% of respondents said they shared information from reports with staff or within their company.



Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 13

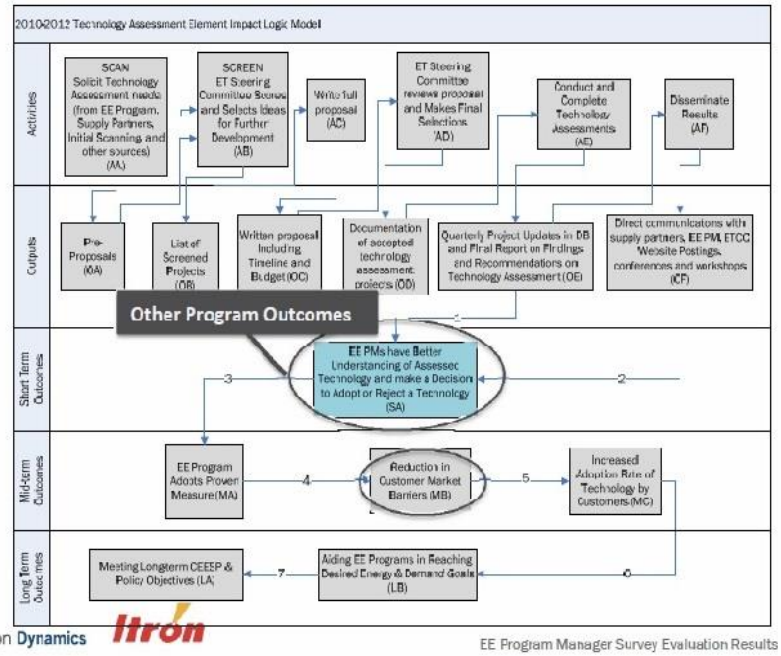
Technology Assessments

- EE PM's have a better understanding of measure and make decision to adopt / reject technology
- EE program managers experience a reduction in market barriers

Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 14

The evaluation team reviewed relevant outcomes as presented in the Technology Assessment logic model

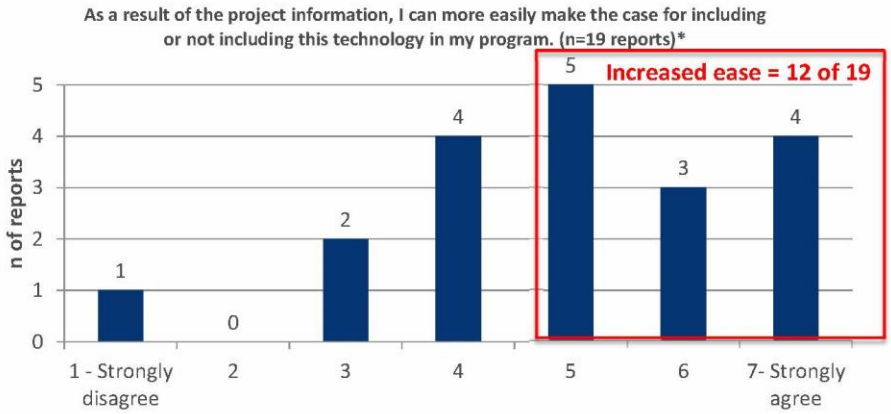


Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 15

Outcome: Respondents indicate they can better make the case for including or excluding technologies in their programs based on the TA reports

12 of 19 TA reports were rated positively in making it easier for recipients to make the case for including or not including the technology in their programs.



* Base: Number of TA reports. Note that there were 14 respondents, some of whom could be ETP program staff.

Opinion Dynamics Itron

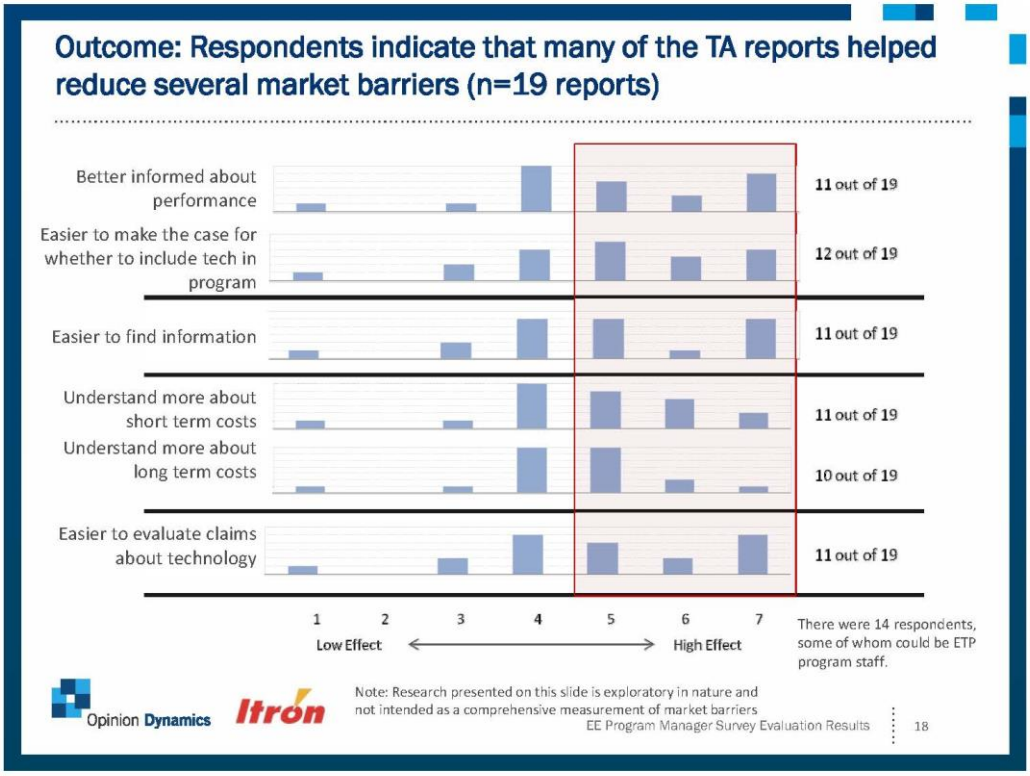
EE Program Manager Survey Evaluation Results 16

Survey used statements to test the reduction of market barriers for respondents

Market Barrier	Questions
Performance uncertainty	▪ I am now better informed about the energy performance of this type of technology than I was before. ▪ I can more easily make the case for including or not including this technology in my program.
Information and search costs	▪ It is easier to find information about this type of technology than it was before.
Hidden costs	▪ My understanding of the SHORT-term costs associated with this technology has increased. ▪ My understanding of the LONG-term costs associated with this technology has increased.
Asymmetric information	▪ It is easier to evaluate claims made in the marketplace about this type of technology than it was before.

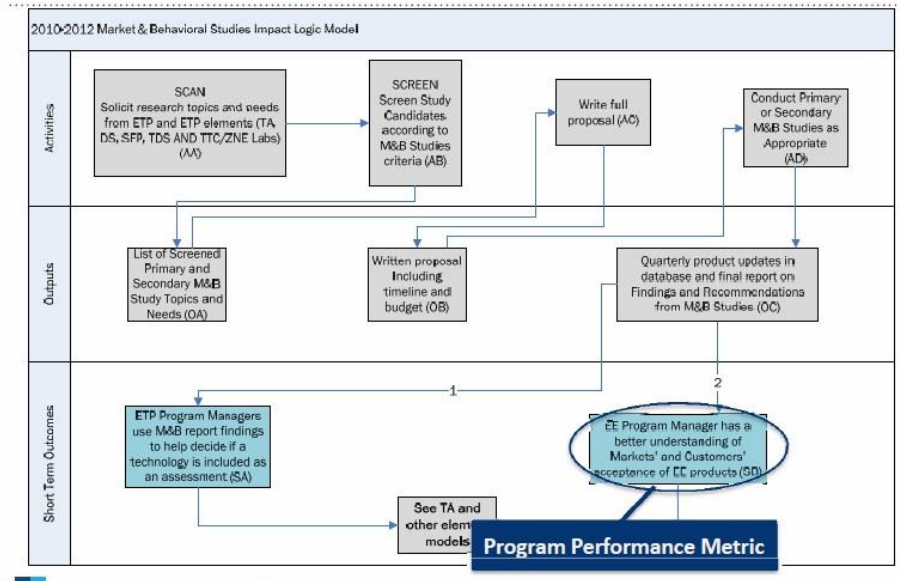
Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 17


Outcome: Respondents indicate that many of the TA reports helped reduce several market barriers (n=19 reports)
Better informed about performance
11 out of 19
Easier to make the case for whether to include tech in program
12 out of 19
Easier to find information
11 out of 19
Understand more about short term costs
11 out of 19
Understand more about long term costs
10 out of 19
Easier to evaluate claims about technology
11 out of 19
1 2 3 4 5 6 7
Low Effect
High Effect
There were 14 respondents, some of whom could be ETP program staff.
Opinion Dynamics
Itron
Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive measurement of market barriers
EE Program Manager Survey Evaluation Results
18


Market & Behavioral Studies
PPM: EE Program Manager has a better understanding of Markets' and Customers' acceptance of EE products
EE PM's have a better understanding of measure and make decision to adopt / reject technology
EE program managers experience a reduction in market barriers
Opinion Dynamics
Itron
EE Program Manager Survey Evaluation Results
19

Evaluation reviewed relevant outcomes as presented in the Market & Behavioral Studies logic model



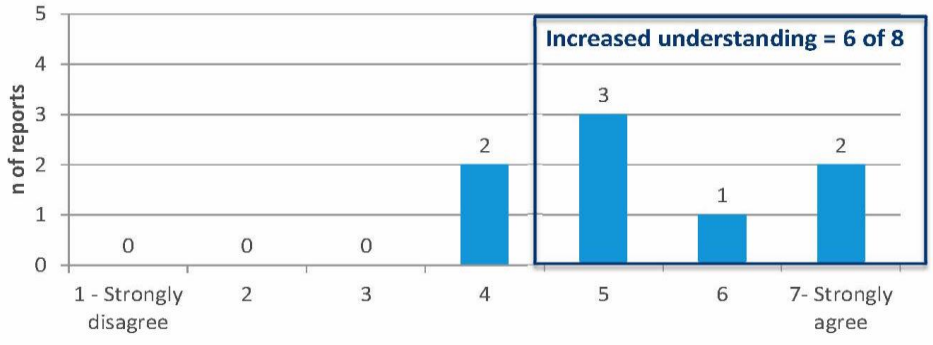
Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 20

PPM: EEPM respondents indicate they have a better understanding of target market for EE technologies based on MBS reports

For Market and Behavioral Studies, 6 of 8 reports received positive ratings for providing a better understanding of the level of the target market for the energy efficient technologies.

The information I received increased my understanding of the target market for the energy efficient technology described in the report. (n=8 reports)*



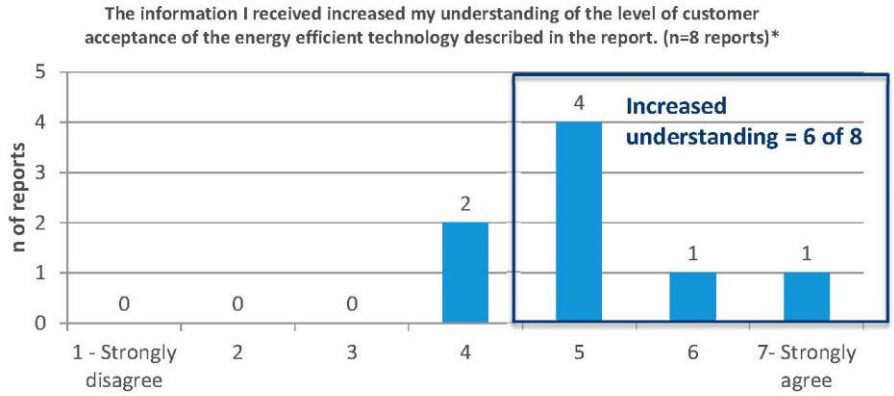
* Base: Number of MBS reports

Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 21

PPM: EEPM respondents indicate they have a better understanding of customer acceptance of EE technologies based on MBS reports

For Market and Behavioral Studies, 6 of 8 reports received positive ratings for providing a better understanding of the level of customer acceptance of the energy efficient technologies.

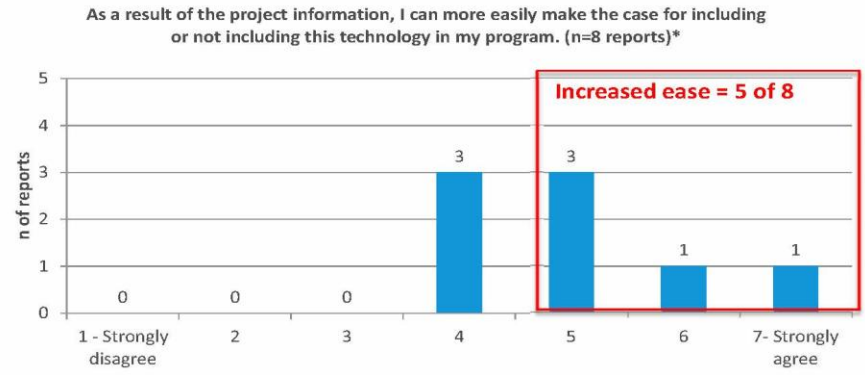


* Base: Number of MBS reports

Opinion Dynamics Itron

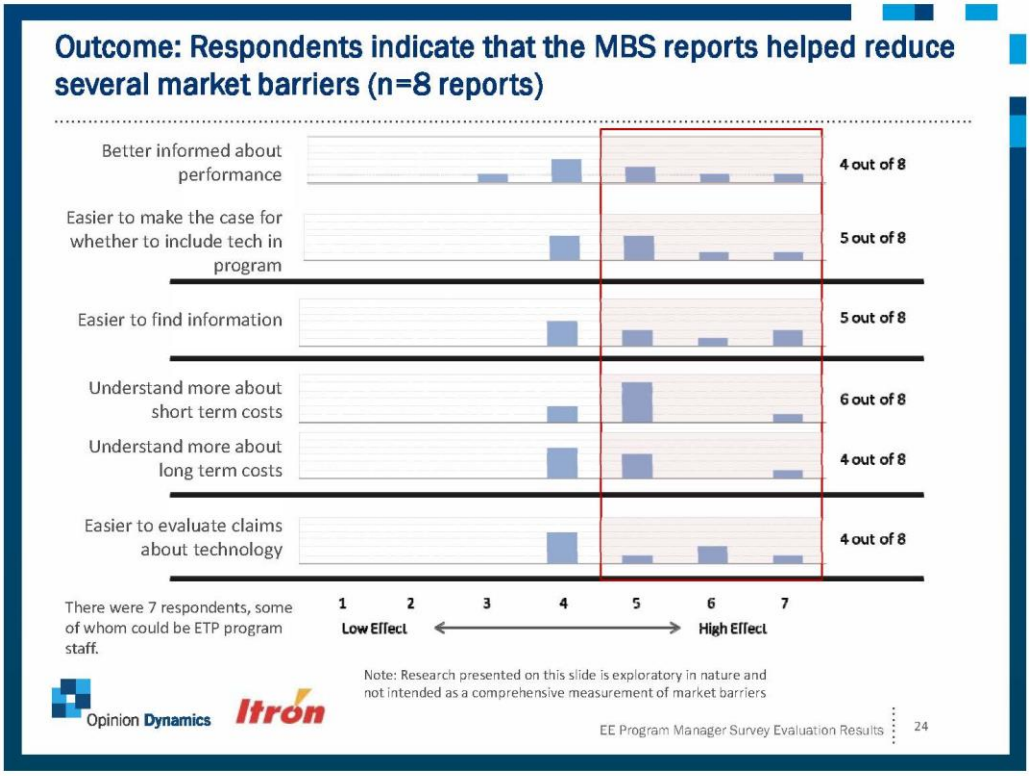
Outcome: Respondents indicate they can better make the case for including or excluding technologies in their programs based on MBS reports

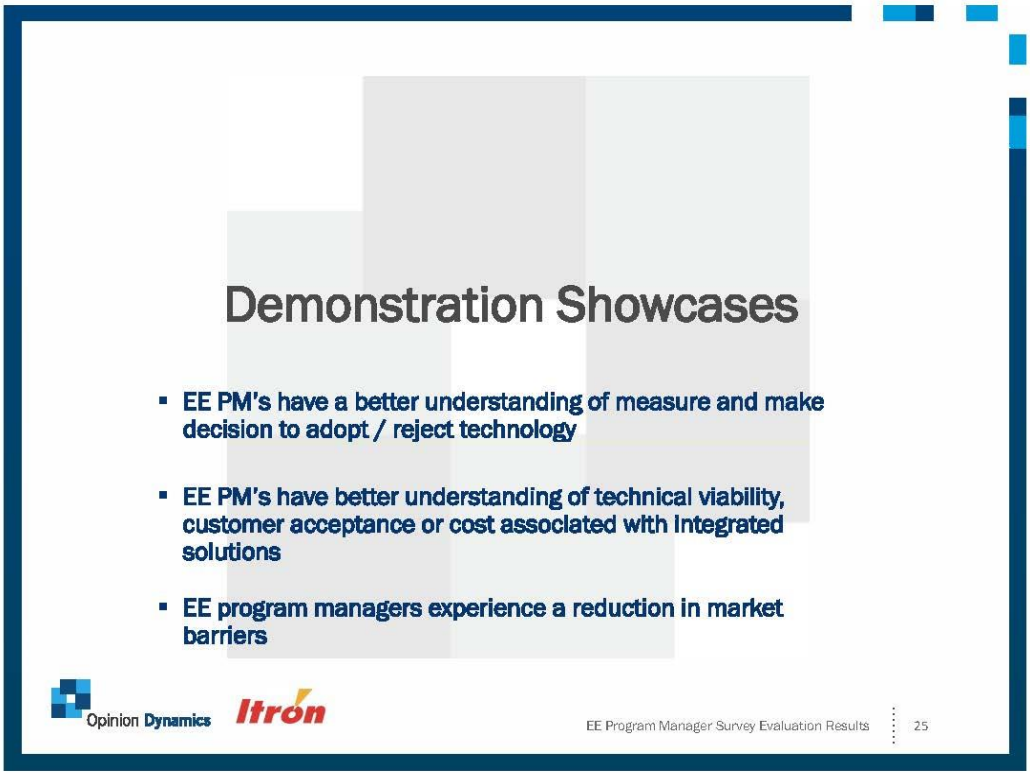
5 of 8 MBS reports were rated positively for making it easier to make the case for including or not including the technology in their programs.



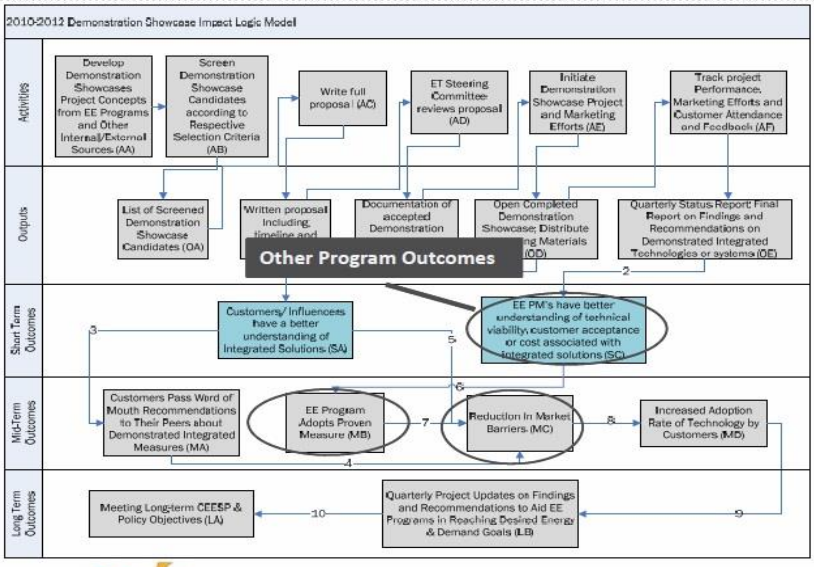
* Base: Number of MBS reports. Note that there were 7 respondents, some of whom could be ETP program staff.

Opinion Dynamics Itron


Outcome: Respondents indicate that the MBS reports helped reduce several market barriers (n=8 reports)
Better informed about performance
4 out of 8
Easier to make the case for whether to include tech in program
5 out of 8
Easier to find information
5 out of 8
Understand more about short term costs
6 out of 8
Understand more about long term costs
4 out of 8
Easier to evaluate claims about technology
4 out of 8
There were 7 respondents, some of whom could be ETP program staff.
1 2 3 4 5 6 7
Low Effect
High Effect
Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive measurement of market barriers
Opinion Dynamics
Itron
EE Program Manager Survey Evaluation Results
24


Demonstration Showcases
EE PM's have a better understanding of measure and make decision to adopt / reject technology
EE PM's have better understanding of technical viability, customer acceptance or cost associated with integrated solutions
EE program managers experience a reduction in market barriers
Opinion Dynamics
Itron
EE Program Manager Survey Evaluation Results
25

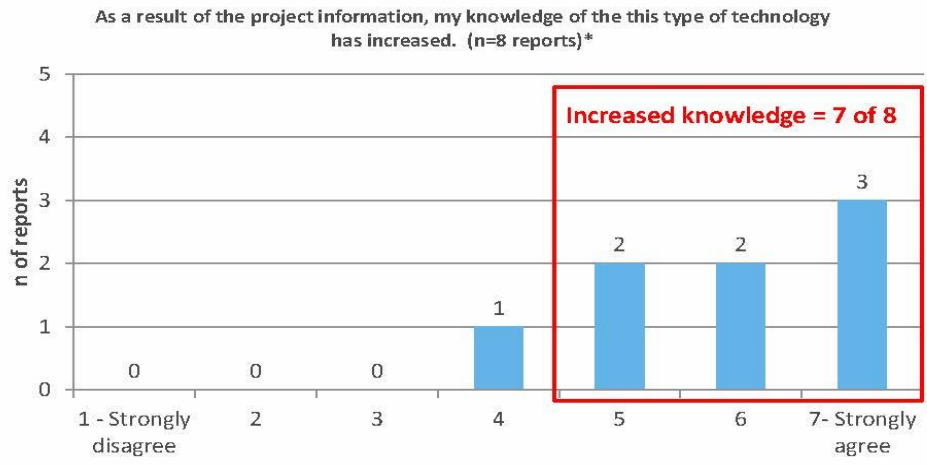
Evaluation reviewed relevant EE PM outcomes based on the Demonstration Showcase logic model



Opinion Dynamics Itron

Outcome: Respondents indicate they have a better understanding of measures based on DS reports

7 of 8 DS reports were rated positively for increasing knowledge of the technology type.



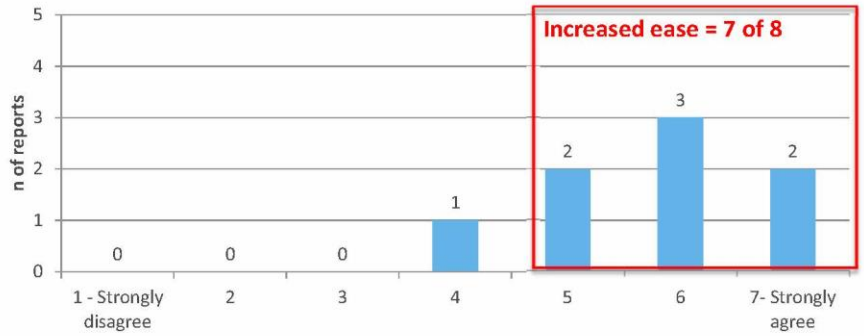
* Base: Number of DS reports. Note that there were 7 respondents, some of whom could be ETP program staff.

Opinion Dynamics Itron

Outcome: Respondents indicate they can better make the case for including or excluding technologies in their programs based on DS reports

7 of 8 DS reports were rated positively for making it easier to make the case for including or not including the technology in their programs.

As a result of the project information, I can more easily make the case for including or not including this technology in my program. (n=8 reports)*



* Base: Number of DS reports. Note that there were 7 respondents, some of whom could be ETP program staff.

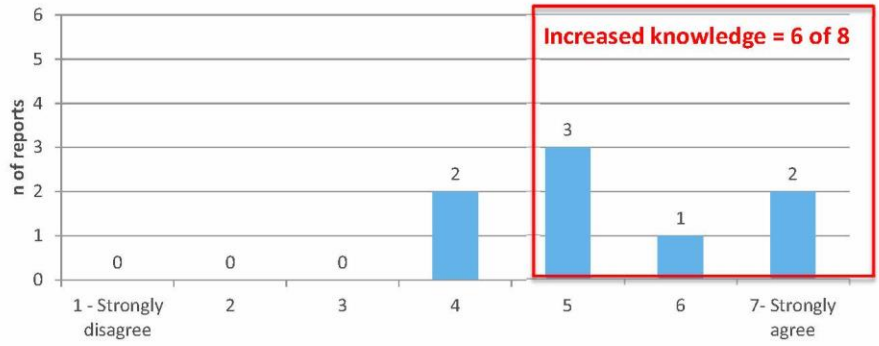
Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 28

Outcome: Respondents indicate they have a better understanding of customer acceptance of the technologies shown within demonstration showcases

6 of 8 DS reports were rated positively for increasing knowledge of the customer acceptance of the energy efficient technologies.

My understanding of customer acceptance of the specific energy efficient technologies described in the report has increased. (n=8 reports)*

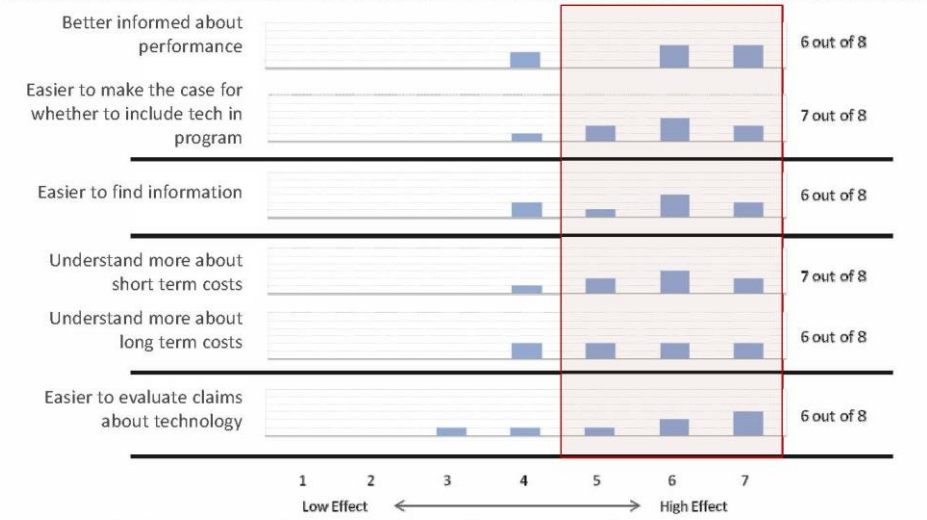


* Base: Number of DS reports. Note that there were 7 respondents, some of whom could be ETP program staff.

Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 29

Outcome: Respondents indicate that the DS reports helped reduce several market barriers (n=8 reports)



Note that there were 7 respondents, some of whom could be ETP program staff.

Opinion Dynamics Itron

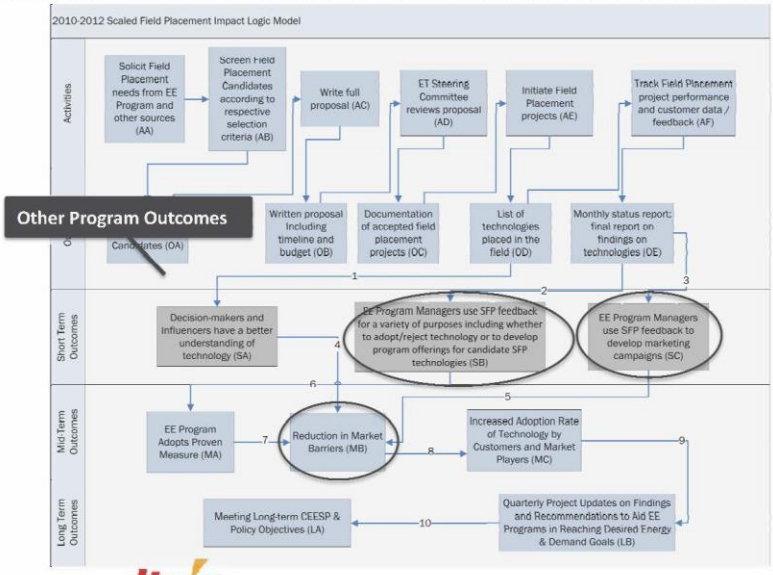
Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive measurement of market barriers

Scaled Field Placements

- EE PM's have a better understanding of measure and make decision to adopt / reject technology
- EE program managers use SFP feedback to develop marketing campaigns
- EE program managers experience a reduction in market barriers

Opinion Dynamics Itron

Evaluation reviewed relevant EE PM outcomes as presented in the Scaled Field Placement logic model



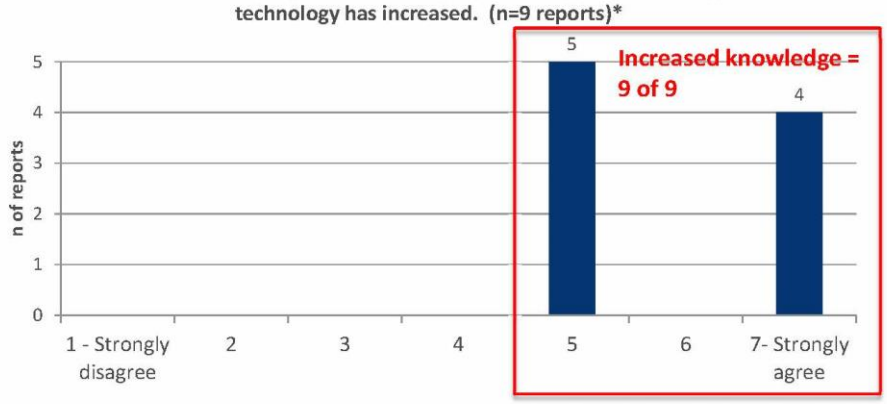
Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 32

Outcome: Respondents indicate they have a better understanding of technologies based on SFP reports

9 of 9 SFP reports were rated positively for increasing knowledge about the technology increased.

As a result of the project information, my knowledge of the this type of technology has increased. (n=9 reports)*



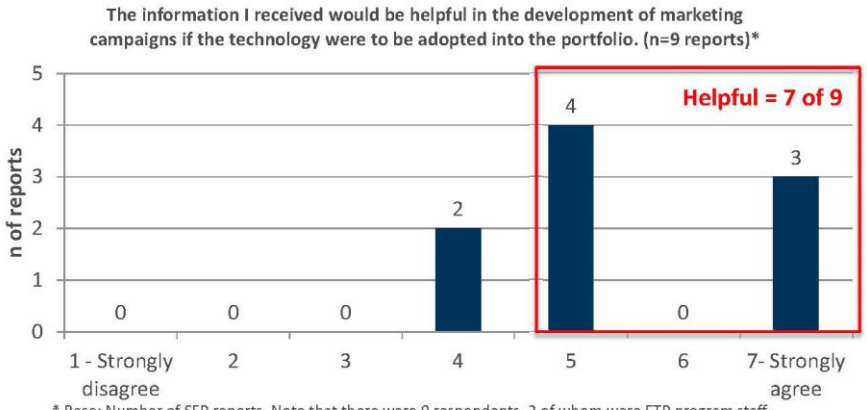
* Base: Number of SFP reports. Note that there were 9 respondents, 2 of whom were ETP program staff.

Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 33

Outcome: Respondents indicate SFP feedback is helpful to developing marketing campaigns

7 of 9 SFP reports were rated as helpful in the development of marketing campaigns for the technology.



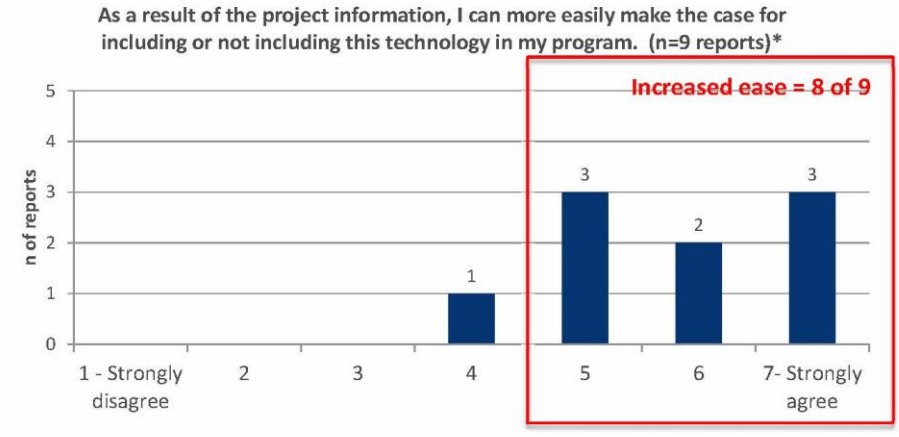
* Base: Number of SFP reports. Note that there were 9 respondents, 2 of whom were ETP program staff.

Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 34

Outcome: Respondents indicate they can better make the case for including or excluding technologies in their programs based on SFP reports

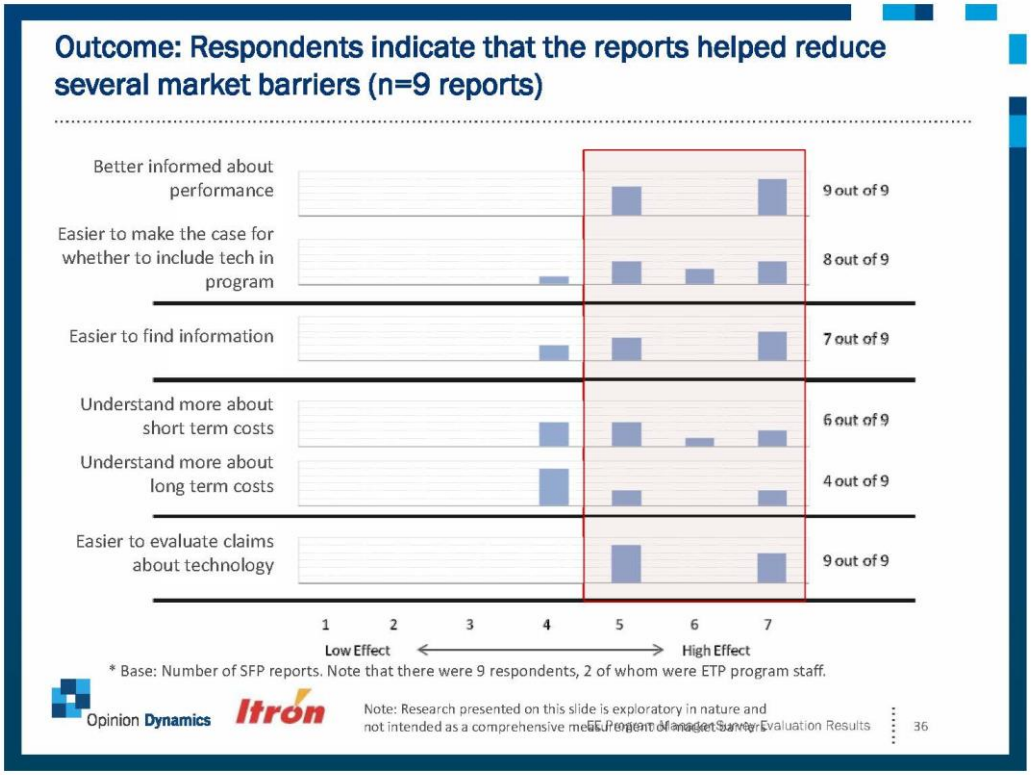
8 of 9 SFP reports were rated positively for making it easier to make the case for including or not including the technology in their programs.

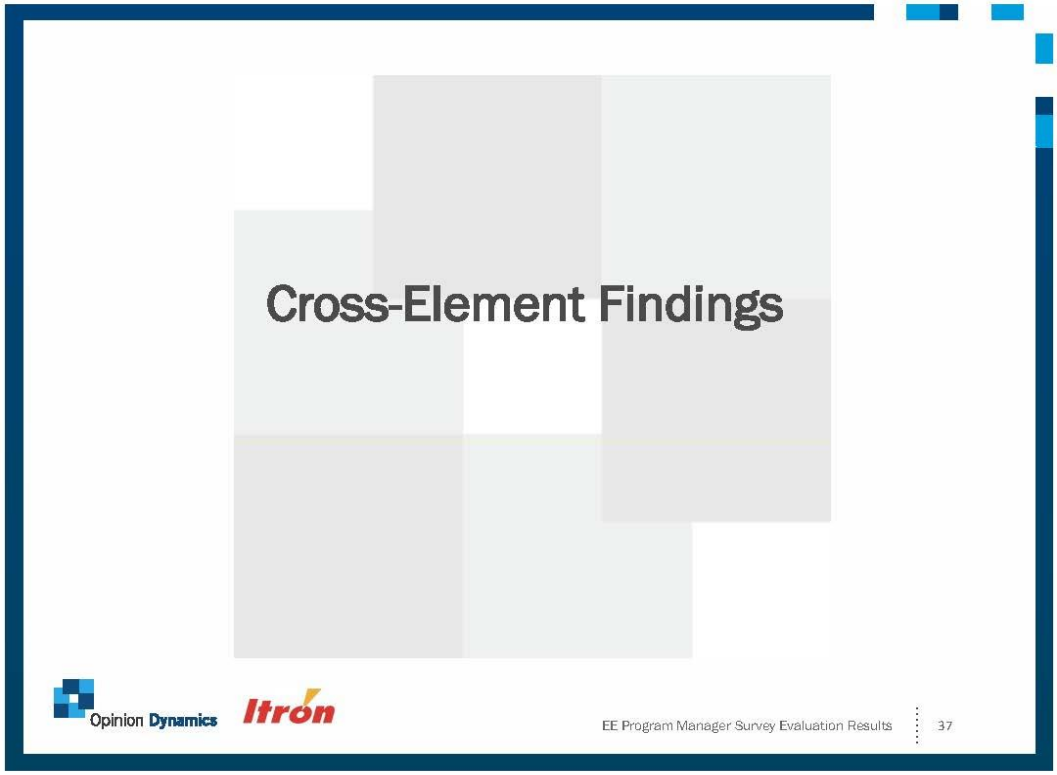


* Base: Number of SFP reports. Note that there were 9 respondents, 2 of whom were ETP program staff.

Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 35


Outcome: Respondents indicate that the reports helped reduce several market barriers (n=9 reports)
Better informed about performance
9 out of 9
Easier to make the case for whether to include tech in program
8 out of 9
Easier to find information
7 out of 9
Understand more about short term costs
6 out of 9
Understand more about long term costs
4 out of 9
Easier to evaluate claims about technology
9 out of 9
1 2 3 4 5 6 7
Low Effect
High Effect
* Base: Number of SFP reports. Note that there were 9 respondents, 2 of whom were ETP program staff.
Opinion Dynamics
Itron
Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive
EE Program Manager Survey Evaluation Results
36


Cross-Element Findings
Opinion Dynamics
Itron
EE Program Manager Survey Evaluation Results
37

Overall, ETP reports are having a positive effect on the population of respondents as measured by PPM and intended outcomes

Responses to survey instrument provide measurement of program outcomes.

Metric	Type	Result
EE Program Manager has a better understanding of Markets' and Customers' acceptance of EE products	PPM for MBS	6 of 8 reports
EE PM's can better make a case to adopt / reject technology	Outcome for TA, MBS, DS, SFP	12 of 19 reports (TA) 5 of 8 reports (MBS) 7 of 8 reports (DS) 8 of 9 reports (SFP)
EEPM's use the reports in making a decision to adopt or reject a technology	Outcome for TA, MBS, DS, SFP	4 of 4 reports (TA)* 0 of 1 reports (MBS)* 3 of 3 reports (DS)* 3 of 3 reports (SFP)*
EE PM's have better understanding of technical viability, customer acceptance or cost associated with integrated solutions	Outcome for DS, MBS	6 of 8 reports (DS) 6 of 8 reports (MBS)
Reduction in market barriers	Outcome for TA, MBS, DS, SFP	57% to 72% (47 reports)
EE program managers use SFP feedback to develop marketing campaigns	Outcome for SFP	7 of 9 reports

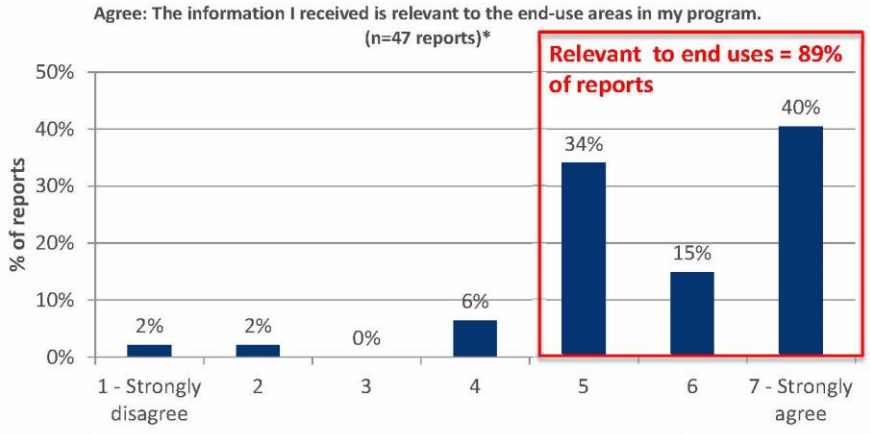
Opinion Dynamics Itron

*Base: Number of respondents who have both 1) made a decision about including the technology in their portfolio and 2) received the report before making the decision

EE Program Manager Survey Evaluation Results 38

Reports appear to be relevant to respondents end use areas

89% of all report types were rated as relevant to the respondents end-use areas.



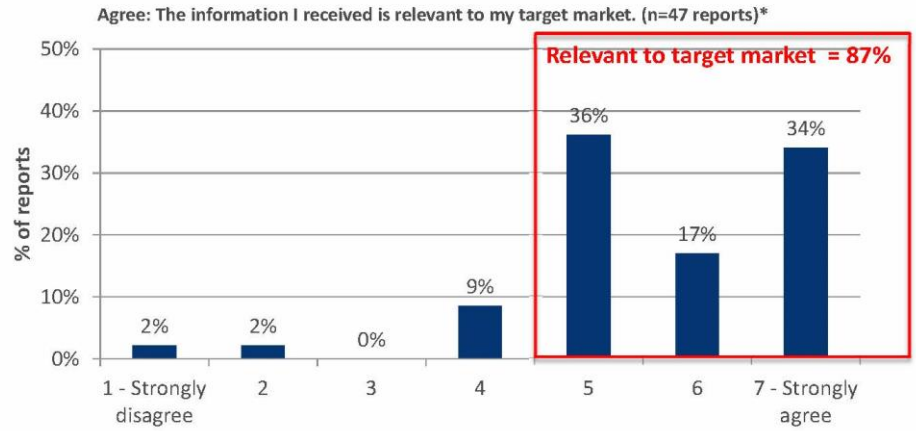
* Base: Number of reports. Note that there were 20 respondents, some of whom could be ETP program staff.

Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 39

Reports appear to be relevant to respondents target markets

87% of all report types were rated by respondents as relevant to the respondents target markets.



* Base: Number of reports. Note that there were 20 respondents, some of whom could be ETP program staff.

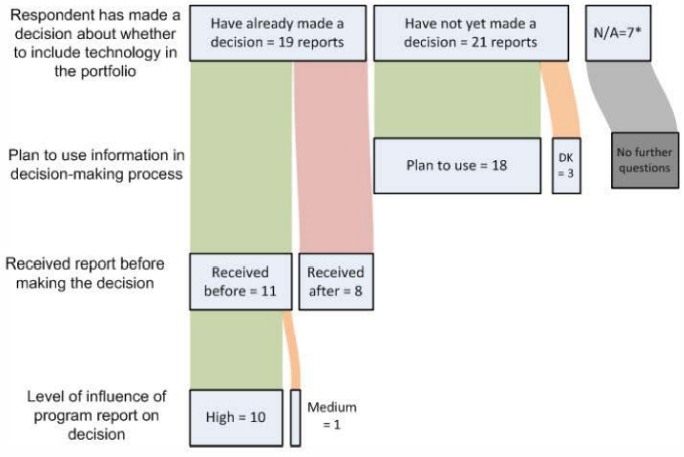
Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 40

Most respondents use or plan to use the report in their decision-making process regarding the inclusion of technologies

Over half of reports (11 of 19) were received by the respondent before they made a decision about including the technology in their portfolio. Of those 11 reports, all respondents indicated the reports were influential in their decision.

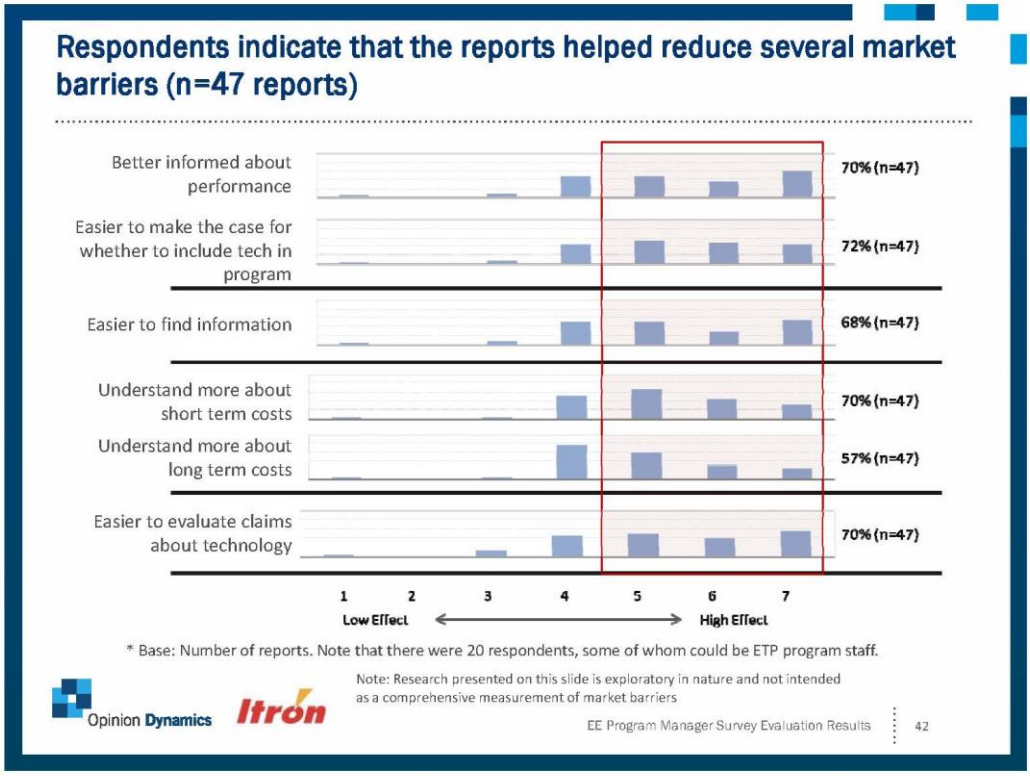
Of those reports on technologies where the respondent had not made a decision yet, 18 of 21 reports will play a part in their decisions, according to the respondents.



* Respondent indicated that they are not decision makers for that technology

Opinion Dynamics Itron

EE Program Manager Survey Evaluation Results 41


Respondents indicate that the reports helped reduce several market barriers (n=47 reports)
Better informed about performance
70% (n=47)
Easier to make the case for whether to include tech in program
72% (n=47)
Easier to find information
68% (n=47)
Understand more about short term costs
70% (n=47)
Understand more about long term costs
57% (n=47)
Easier to evaluate claims about technology
70% (n=47)
1
2
3
4
5
6
7
Low Effect
High Effect
* Base: Number of reports. Note that there were 20 respondents, some of whom could be ETP program staff.
Opinion Dynamics
Itron
Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive measurement of market barriers
EE Program Manager Survey Evaluation Results
42

C.2. SCALED FIELD PLACEMENT PARTICIPANT INTERVIEW RESULTS

SCALED FIELD PLACEMENT
PARTICIPANT INTERVIEWS

Results

July 22, 2013

Opinion Dynamics

Itron

Scaled Field Placement projects seek to increase adoption of technologies by IOU EE programs and by target customers

Primary Performance Metric: Number of ETP measures that have undergone SFP and are adopted into the EE portfolio. "Adoption" means measure is available to end-use customers through IOU programs.*

Other Program Outcomes from Program Theory /Logic Model:

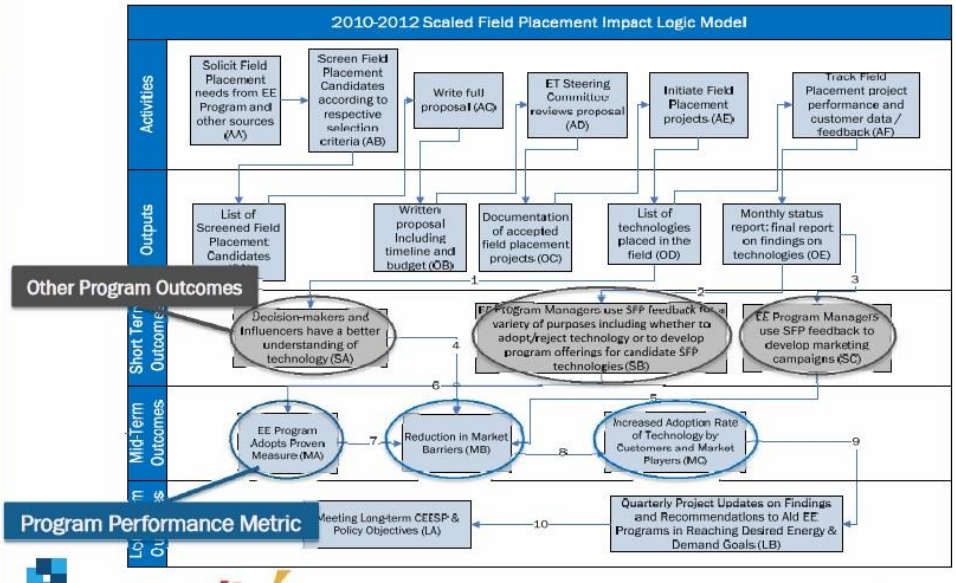
- Decision-makers and influencers have a better understanding of the technology
- EE program managers use SFP feedback to decide whether to adopt the technology into programs
- EE program managers use SFP feedback to develop marketing campaigns
- EE program managers and market influencers experience a reduction in market barriers
- Customers and market players increase adoption rate of technology

*Sourced from IOU self-reported data from the PPM Report submitted in June 2013. "Adoption" means measure is available to end-use customers through IOU programs. Adoption of a measure may be attributed to one or more ET sub-programs. Note that the ETP program database does not track measures adopted into the program.

Opinion Dynamics Itron

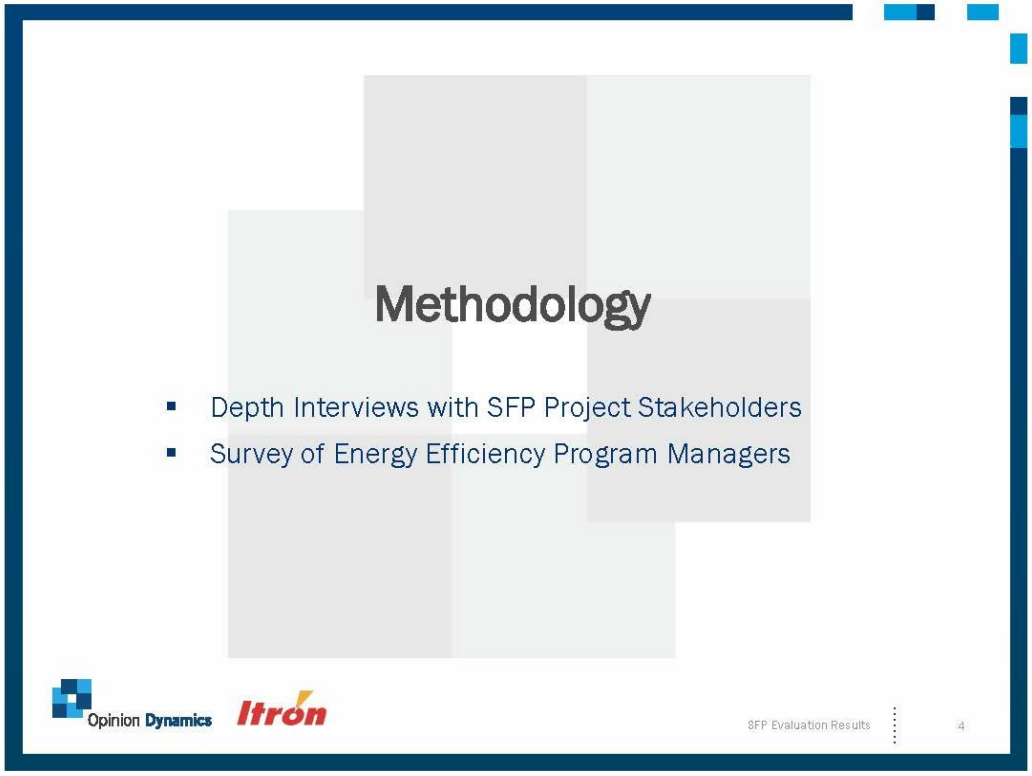
SFP Evaluation Results 2

Evaluation reviewed outcomes as presented in the Scaled Field Placement logic model



Opinion Dynamics Itron

SFP Evaluation Results 3



Methodology – SFP Stakeholder Interviews

We conducted in-depth interviews with 9 SFP stakeholders who were involved in 9 different SFP projects in the 2010-2012 program cycle. There were 14 projects in total completed at the time we drew our sample, representing 31 potential respondents. We applied a simple random sample of projects to support 9 project completes via in-depth interviews. We planned for multiple interviews per project when we had multiple names, but ultimately interviewed one person per project.

The interviews were conducted from 5/21 to 6/14.

	# of Projects	# of Participants
Population	14	31
Respondents	9	9 (out of 21 participants listed in these 9 projects)

The final population for SFP projects begun as of the end of 2012 is 30 with 17 completed projects.

Opinion Dynamics Itron SFP Evaluation Results 5

Methodology – Energy Efficiency Program Manager Survey

We conducted an Internet survey with 18 energy efficiency program managers and 2 ETP staff who had received information from the ETP during the 2010-2012 program cycle. There were 48 EE program manager participants in our sample frame. The survey was fielded from 5/21 to 6/14.

Population	48
Sample Frame	48
Completes	20
Response Rate	48.8%

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SFP Evaluation Results 6

Project and Participant Characterization

Opinion Dynamics Itron

SFP Evaluation Results 7

Overall, projects are implemented according to program theory

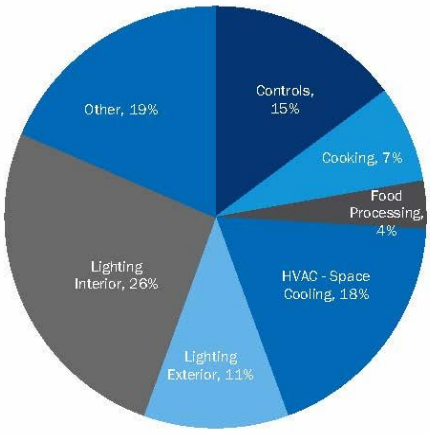
- As per the PIP, SFP projects attempt to gain market traction by providing end-users access to energy efficiency technologies
- 7 of the 9 projects aligned with program theory
- One project did not align with this program theory – it was a research study to assess market potential for water heaters
- Another project's alignment with program theory was unclear – the project replaced an existing ice machine and the respondent considered it a rebate program, but we learned that this effort included other sites and may have been more closely aligned that our respondent knew

Opinion Dynamics Itron

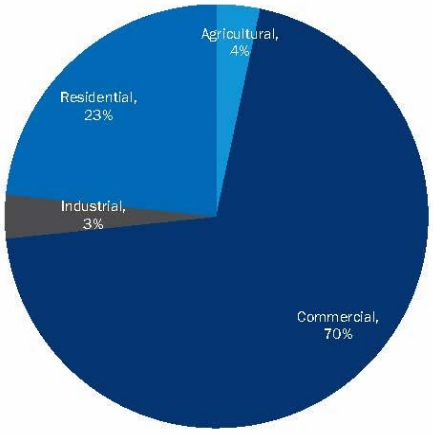
SFP Evaluation Results 8

SFP projects tend to fit the CEESP Research & Technology (R&T) end-use types and target market sectors

R&T End-Use Types
(30 projects)



Market Sectors
(30 projects)



Opinion Dynamics Itron

SFP Evaluation Results 9

Some SFP projects overlap with IOU EE Programs and Technology Assessment projects

- At least one SFP technology was an underutilized measure in an existing IOU EE program

IOU	Project Number	Project Name	Element	Project Origin	Internal Source Area
SCE	ET11SCE3020	LED Downlights	SFP	Internal IOU Person	EE Programs

- At least one SFP project technology overlaps with Technology Assessment project

IOU	Project Number	Project Name	Element	Technology
PGE	ET11PGE1072	ET Home Energy Management Field Tech Assessment Smart Thermostats	TA	Smart Thermostat in homes
PGE	ET11PGE3073	ET Home Energy Management Scaled Field Placement (Phase A) Smart Thermostats	SFP	Smart Thermostat in homes

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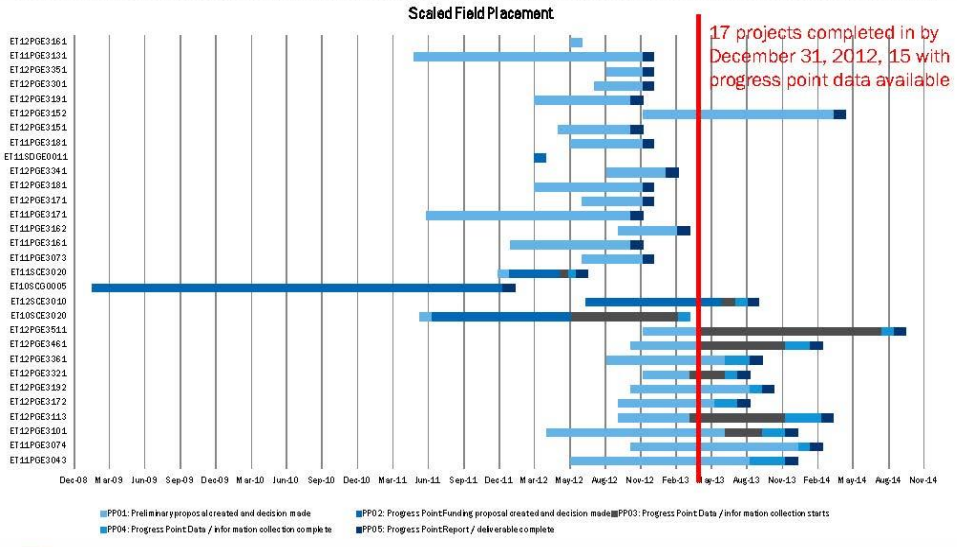
SFP Evaluation Results 10

Most SFP projects began after June 2011 and will end by February 2014



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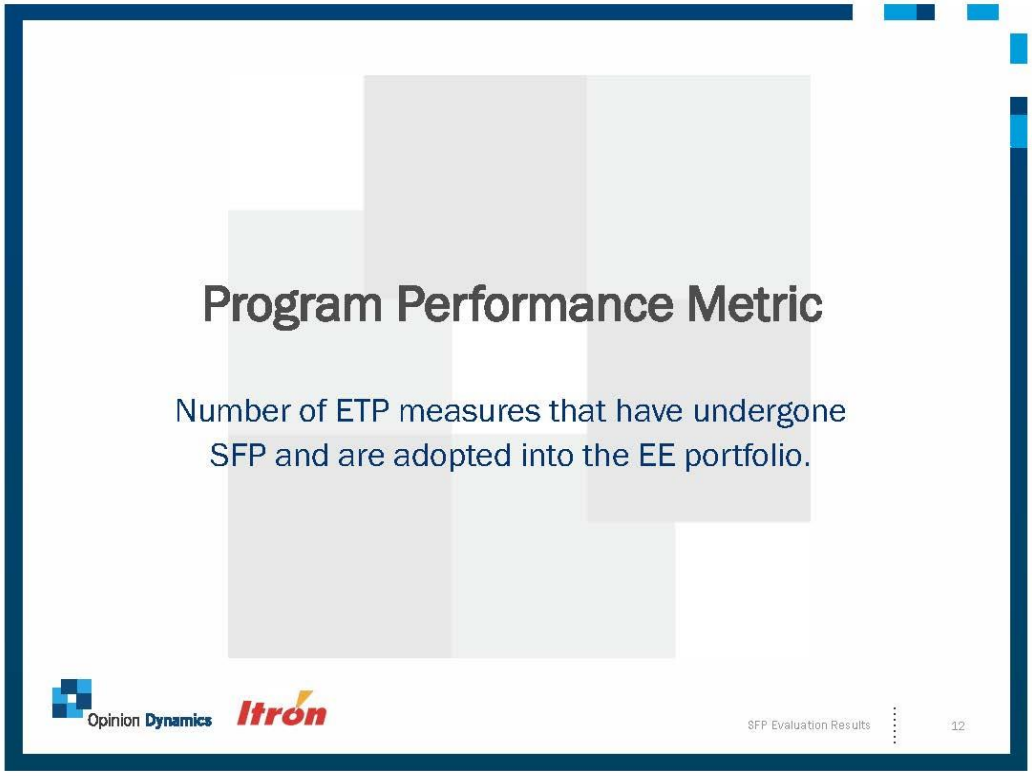
SFP Evaluation Results 11



PPM: ETP staff self-reports having met their adoption metrics

The PIPs do not have specific objective for the IOUs to transfer Scaled Field Placement technologies into the IOU EE programs.

According to the IOUs, the IOU EE programs have adopted 5 projects and 3 measures from the ETP program.

ETP IOU	PIP Adoption Objective*	Adopted**	Recommended for Transfer	Recommendation Decision Pending	Not Recommended
PG&E	No specific number	5 projects	10	3	1
SCE		2 measures	0	0	1
SCG		0 measures	1	0	0
SDG&E		1 measure	0	1	0
Statewide		5 projects, 3 measures	11	4	2

*The PIPs only have adoption metrics for Technology Assessments.
** Sourced from IOU self-reported data from the PPM Report submitted in June 2013. "Adoption" means measure is available to end-use customers through IOU programs. Adoption of a measure may be attributed to one or more ET sub-programs.

Projects recommended for adoption

Sector	Technology	ETP IOUs	ETP Project #	Project Name
Commercial	Energy Management Information Systems	PGE	ET12PGE3341	First Fuel SFP
Commercial	Energy Management System	PGE	ET11PGE3161	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase A)
Commercial	Energy Management System	PGE	ET11PGE3162	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase B)
Commercial	Food Services, Ice Machines, Demand Response	PGE	ET12PGE3151	Food Service Tech Load Shifting Ice Machines (Phase A)
Commercial	Food Services, Ice Machines, Demand Response	PGE	ET12PGE3152	Food Service Tech Load Shifting Ice Machines (Phase B)
Commercial	HVAC	PGE	ET12PGE3181	Comprehensive HVAC RTU for SMB
Commercial	LED Lighting	PGE	ET12PGE3351	Safeway - Advanced LED Track Fixtures
Commercial	LED lighting controls	PGE	ET11PGE3181	Follow Up Linear Panel and Controls Study (GSA)
Commercial	LED replacement lamps	PGE	ET12PGE3301	PAR/MR LED Pilot
Residential	The Energx controls for combined space heating and domestic water system	SCG	ET10SCG0005	Energx Raydronics Control (SFP)
Residential	Water heaters	PGE	ET12PGE3191	Water Heaters Alt. Technologies (Phase A)

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SFP Evaluation Results 14

Other Program Outcomes

- Decision-makers and Influencers have a better understanding of the technology.
- EE program managers use SFP feedback to decide whether to adopt the technology into programs.
- EE program managers use SFP feedback to develop marketing campaigns.
- EE program managers and market influencers experience a reduction in market barriers.
- Customers and market players increase adoption rate of technology.

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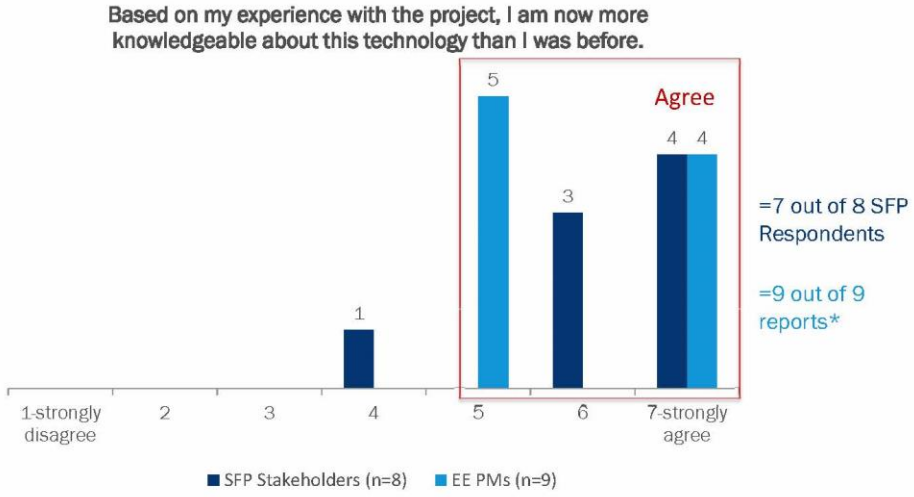
SFP Evaluation Results 15

Outcome: SFP projects are giving SFP respondents and IOU staff respondents a better understanding of the technology



=7 out of 8 SFP Respondents

=9 out of 9 reports*

* Base: Number of SFP reports. Note that there were 9 respondents, some of whom could be ETP program staff.

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SFP Evaluation Results 16

SFP respondents described what they learned from the project

"That this has proven to be a pretty good technology and that the initial concerns about the high cost have been outweighed by the performance of the product. It has dramatically reduced our maintenance costs."

"[The project has] been very helpful in quantifying the light pattern on the ground and the energy consumption and monitoring the energy consumption in a detailed fashion. Showing us what the vampire load on the system is. [The project helped] us better understand the economics of the system and the durability of the system."

"There is a significant, quantitative as well as qualitative value [in this technology]"

"[The technology is] well built ...They are easily installed."

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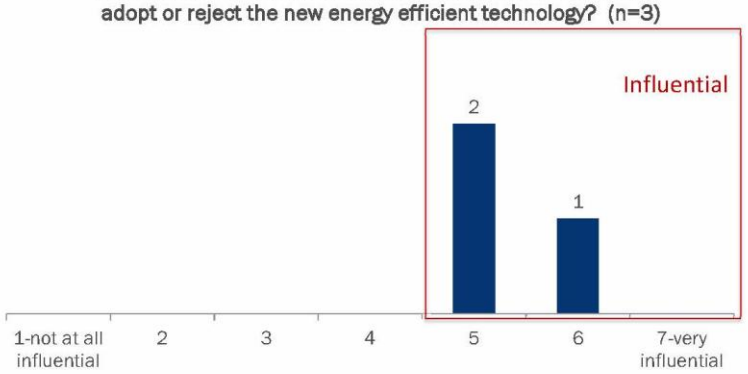
SFP Evaluation Results 17

Outcome: IOU staff respondents use SFP feedback to decide whether to adopt the technology into programs

On a scale from 1 to 7, with 1 meaning "not at all influential" and 7 meaning "very influential," how influential was the information you received from the report in your decision to adopt or reject the new energy efficient technology? (n=3)



=3 out of 3 reports*

* Base: Number of SFP reports. Question asked of the three EE PMs or ETP staff who said that they had already made a decision to adopt or reject the technology and that they received the reports before they made the decision. None of the respondents were SCE staff.

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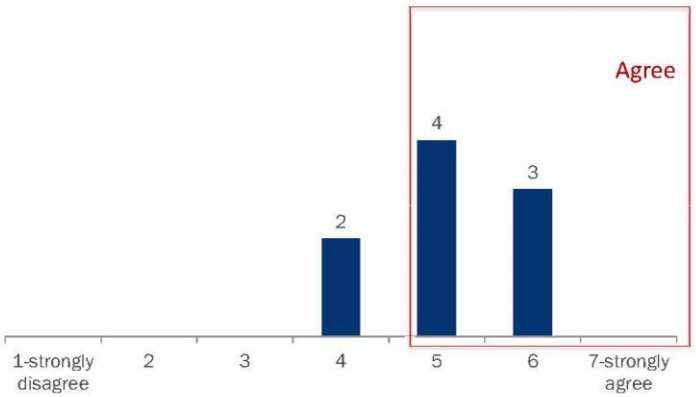
SFP Evaluation Results 18

Outcome: IOU staff respondents felt SFP feedback would be helpful in developing marketing campaigns

The information I received would be helpful in the development of marketing campaigns if the technology were to be adopted into the portfolio. (n=9)



=7 out of 9 reports*

* Base: Number of SFP reports. Note that there were 9 respondents, some of whom could be ETP program staff.

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SFP Evaluation Results 19

Survey used statements to test the reduction of market barriers for SFP respondents

Market Barrier	Questions
Organizational practices and customs	▪ My organization is more likely to consider installing energy-efficient technology than it was before. ▪ My organization is more likely to think about operations and maintenance costs when making decisions about purchasing this type of technology than it was before.
Performance uncertainty	▪ I am now better informed about the energy performance of this type of technology than I was before. ▪ It is easier to make purchasing decisions about this type of technology than it was before.
Information and search costs	▪ It will be easier to find information about this type of technology than it was before.
Hidden costs	▪ I understand more about the maintenance and operating costs for this type of technology than I did before.
Asymmetric information	▪ It is easier to evaluate claims made in the marketplace about this type of technology than it was before.

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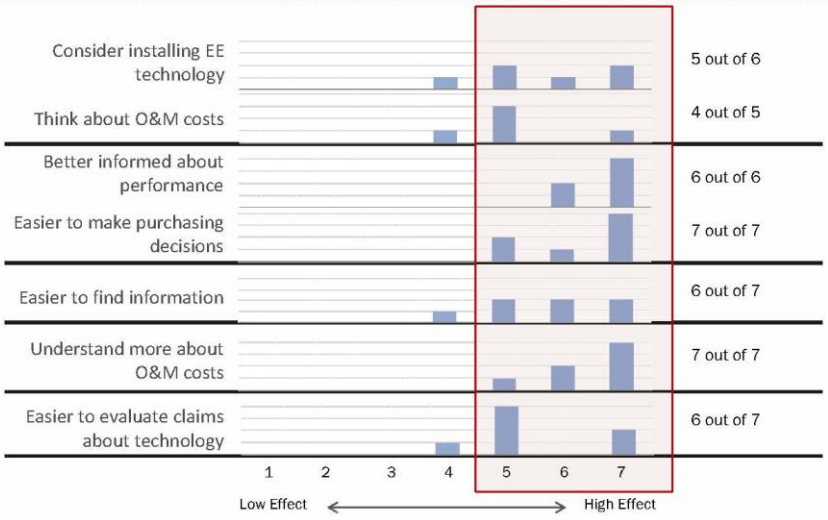
ETP Effects Evaluation -- SFP Evaluation Results 20

Outcome: SFP was successful in further reducing market barriers according to respondents



Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive measurement of market barriers

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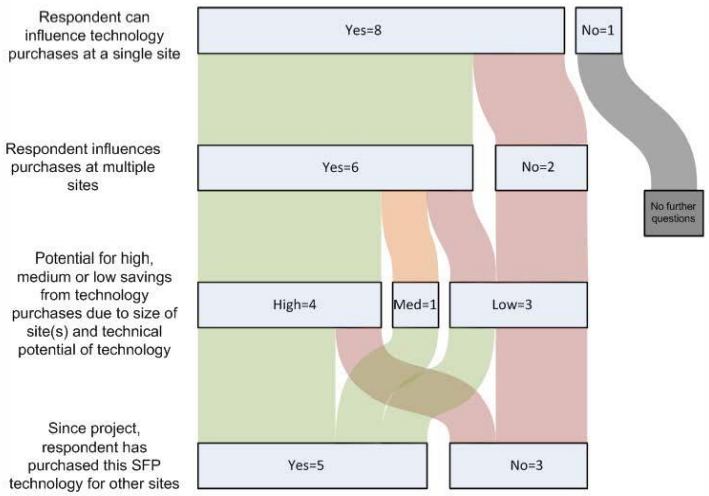
SFP Evaluation Results 21

Outcome: Stakeholders tend to have influence over multiple sites and some have purchased more of the technology since the SFP

Responses indicate that SFP respondents tend to influence technology purchases.

Responses also indicate that since the project occurred, respondents have purchased this technology for other sites.



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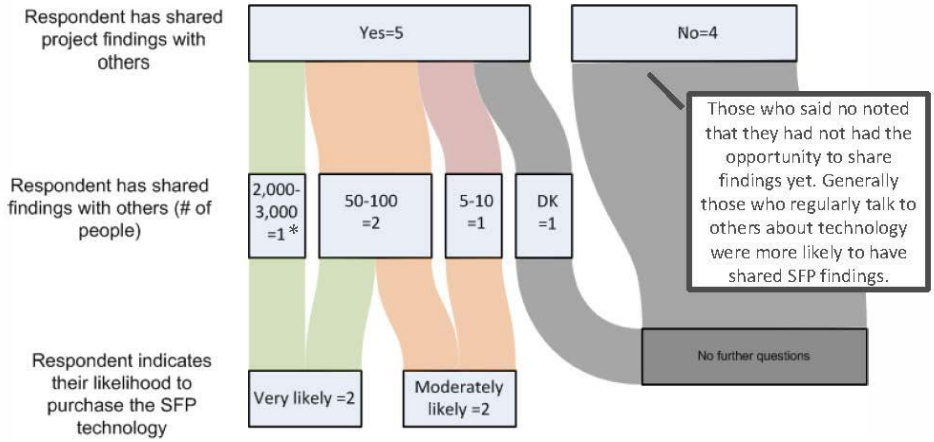
SFP Evaluation Results 22

SFP respondents indicate sharing findings with numerous contacts who are likely to purchase technologies



* This respondent spoke about the technology at several conferences and webinars.

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SFP Evaluation Results 23

Overall, SFP respondents indicate achievement of program element outcomes

Primary Performance Metric: 5 ETP projects, and 3 measures that have undergone SFP and are adopted into the EE portfolio.*

Other Program Outcomes:

Decision-makers and Influencers have a better understanding of the technology: Results indicate that 7 of 8 market influencers indicate having a better understanding of the technology. 9 of 9 SFP reports were rated positively for increasing knowledge about the technology increased.

EE program managers use SFP feedback to decide whether to adopt the technology into programs: 3 out of 3 SFP reports were rated as influential in respondents' decision to adopt or reject the technology.

EE program managers use SFP feedback to develop marketing campaigns: 7 of 9 SFP reports were rated as helpful in the development of marketing campaigns for the technology.

EE program managers and market influencers experience a reduction in market barriers: Overall, we find a reduction in market barriers across a suite of barriers. However, we also find that market barriers are low for these experienced market influencers.

Customers and market players increase adoption rate of technology: The majority of market influencers install or recommend technologies for adoption. 5 of 9 SFP respondents purchased additional units of technology; 5 of 9 SFP respondents recommended technology to other

*Sourced from IOU self-reported data from the PPM Report submitted in June 2013. "Adoption" means measure is available to end-use customers through IOU programs. Adoption of a measure may be attributed to one or more ET sub-programs. Note that the ETP program database does not track measures adopted into the program.

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SFP Evaluation Results 24

SFP is making progress toward PPM and intended outcomes

Responses to survey instrument provide measurement of program outcomes.

Metric	Type	Result
EE Program Managers use SFP feedback for a variety of purposes including whether to adopt/reject technology or to develop program offerings for candidate SFP technologies	PPM / Outcome	5 projects and 3 measures adopted according to IOU PPM Report
Decision-makers and Influencers have a better understanding of technology	Outcome	7 of 8 SFP Respondents understand better; 9 of 9 SFP reports positively rated for understanding better
EE Program Managers use SFP feedback to develop marketing campaigns	Outcome	7 of 9 SFP reports rated as helpful in the development of marketing campaigns
Reduction in customer market barriers	Outcome	Find a reduction in market barriers
Customers and market players increase adoption rate of technology	Outcome	5 of 9 SFP respondents purchased additional units of technology; 5 of 9 SFP respondents recommended technology to others

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SFP Evaluation Results 25

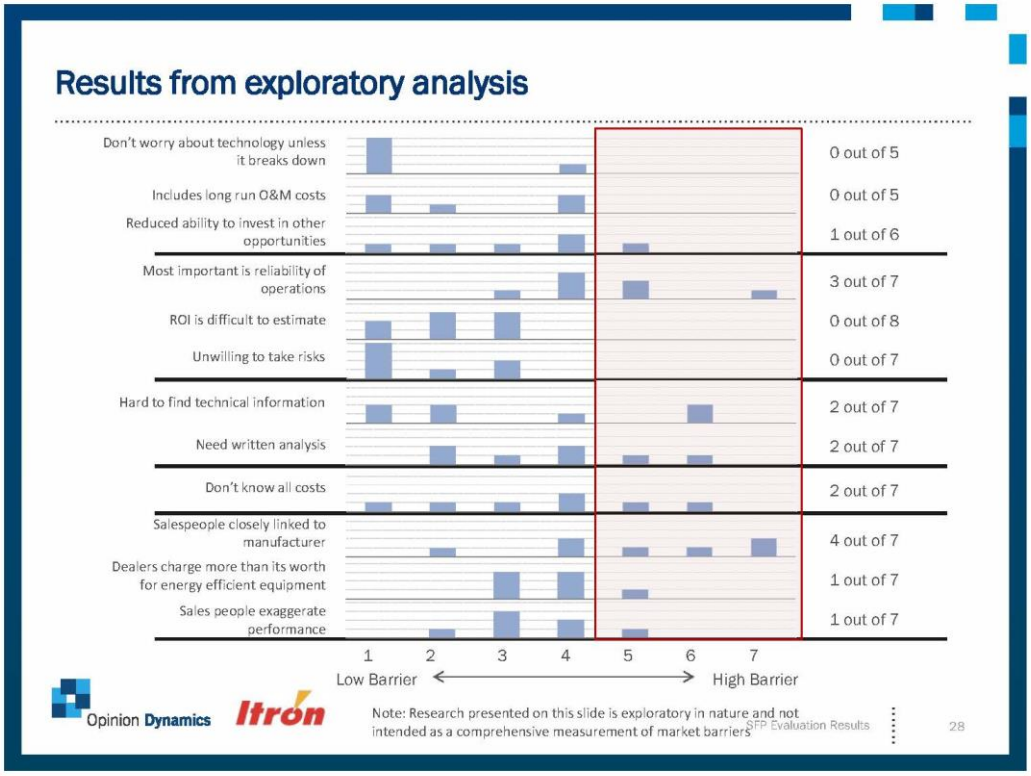
Survey explored market barriers for SFP respondents

We conducted an exploratory assessment of market barriers for program participants. Market barriers include:

Agreement Statements
▪ Our practice is not to worry about our technology unless it breaks down ▪ Our company includes the long run operating and maintenance costs of technology in its initial calculations ▪ Investing extra money in energy efficient technology would reduce our ability to take advantage of other investment opportunities
▪ When we select technology, the most important thing we look for is reliability of operation. ▪ The return on investment from energy efficient technology is difficult to estimate. ▪ Our company is unwilling to take the risks involved in the use of high efficiency technology.
▪ It's hard to figure out which technology to buy because of all the technical information you have to find. ▪ It's hard to get a handle on the benefits of energy efficient technology without a detailed written analysis.
▪ I believe that there may be additional operations and maintenance costs associated with energy efficient technologies, but we don't know what they are.
▪ Sales people usually just try to push the products of whatever manufacturer they're closest to. ▪ Equipment dealers and representatives use the desire for high-efficiency technologies by customers like us to charge more than it's really worth. ▪ I think much of what equipment sales people tell us about the performance of high efficiency technology is exaggerated.

Questions sourced from PG&E's "Food Service Technology Center Market Effects Study", June 30, 1999, and CPUC's "Final Report for Energy Efficiency in Commercial Food Service," Equipoise Consulting Incorporated, April 2004.

Opinion Dynamics Itron SFP Evaluation Results 27


Results from exploratory analysis
Don't worry about technology unless it breaks down
Includes long run O&M costs
Reduced ability to invest in other opportunities
Most important is reliability of operations
ROI is difficult to estimate
Unwilling to take risks
Hard to find technical information
Need written analysis
Don't know all costs
Salespeople closely linked to manufacturer
Dealers charge more than its worth for energy efficient equipment
Sales people exaggerate performance
0 out of 5
0 out of 5
1 out of 6
3 out of 7
0 out of 8
0 out of 7
2 out of 7
2 out of 7
2 out of 7
4 out of 7
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1
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Low Barrier
High Barrier
Opinion Dynamics
Itron
Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive measurement of market barriers
SFP Evaluation Results
28

C.3. DEMONSTRATION SHOWCASE SURVEY RESULTS

DEMONSTRATION SHOWCASE

Results

July 18, 2013

Opinion Dynamics

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Methodology

- 19 demonstration showcase projects were completed in PY2010-2012; 16 of the 19 projects were assessed
- We reviewed each project to determine the best sampling approach given substantial variation in project scope, target audience, and intended outcome. Of these:
  - 9 projects were assessed via a survey with EE program managers (no identifiable target audience) (see *EE PM Survey presentation for findings*)
  - 3 projects had an identifiable target audience with contact information leveraged for primary data collection
  - 4 projects had an identifiable target audience with existing survey data that was leveraged (see *Appendix for findings from our review*)
  - 3 projects were considered non-DS projects (i.e., RFQ or paper study) (see *Appendix for description of projects*)

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Demonstration Showcase Evaluation Findings 2

Overview of data collected and response rates

We collected primary data for 3 Demonstration Projects:

Project #	Project	Sample Frame	# of Completes	Response Rate
ET12PGE2201	Food Service Technology Demo Kitchen	58	11	19.6%
ET11SDGE0001	Energy Innovation Center	Convenience Sample	35	N/A
ET10SCE2020	ZNE Home Retrofit	3	3	N/A

Detailed methodologies are within each section of the presentation.

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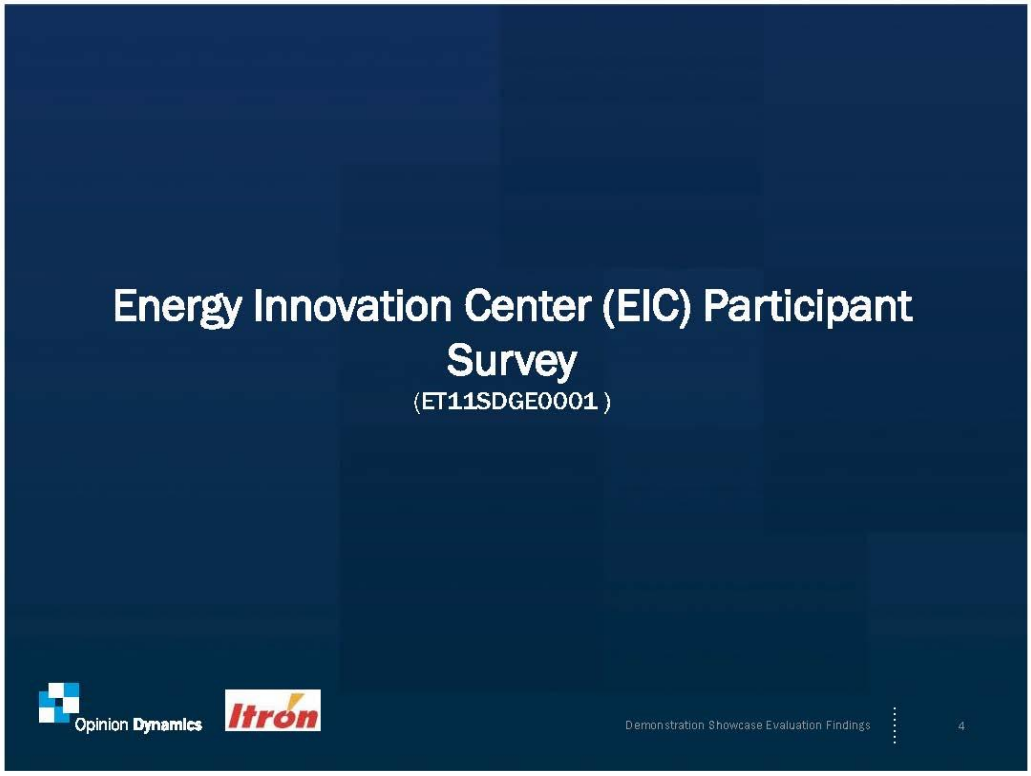
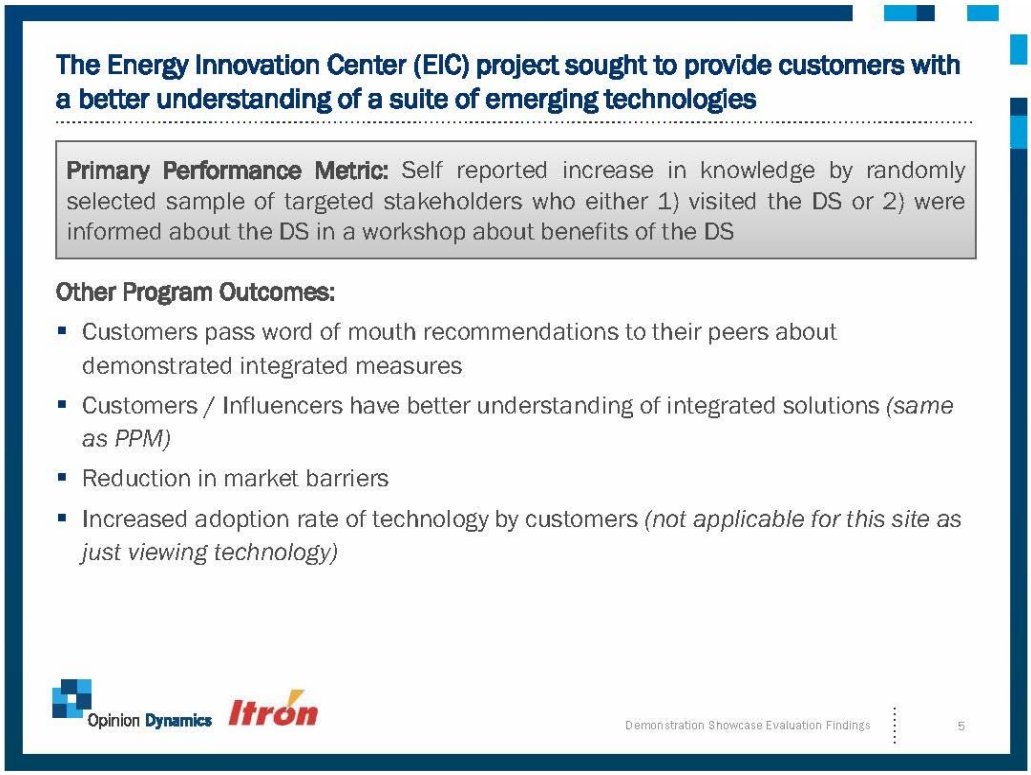
Demonstration Showcase Evaluation Findings 3


Energy Innovation Center (EIC) Participant Survey
(ET11SDGE0001)
Opinion Dynamics
Itron
Demonstration Showcase Evaluation Findings
4


The Energy Innovation Center (EIC) project sought to provide customers with a better understanding of a suite of emerging technologies
Primary Performance Metric: Self reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS
Other Program Outcomes:
Customers pass word of mouth recommendations to their peers about demonstrated integrated measures
Customers / Influencers have better understanding of integrated solutions (same as PPM)
Reduction in market barriers
Increased adoption rate of technology by customers (not applicable for this site as just viewing technology)
Opinion Dynamics
Itron
Demonstration Showcase Evaluation Findings
5

The Energy Innovation Center (EIC) project sought to provide customers with a better understanding of a suite of emerging technologies

Primary Performance Metric: Self reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS

Other Program Outcomes:

- Customers pass word of mouth recommendations to their peers about demonstrated integrated measures
- Customers / Influencers have better understanding of integrated solutions *(same as PPM)*
- Reduction in market barriers
- Increased adoption rate of technology by customers *(not applicable for this site as just viewing technology)*

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Demonstration Showcase Evaluation Findings 5

Methodology

We fielded an intercept survey to 35 Energy Innovation Center visitors after they had viewed ETP supported technologies demonstrated at the Center. These technologies included:

- Lighting
- Daylighting
- HVAC
- Thermal Storage

The survey was fielded in early June 2013 at the Energy Innovation Center.

We used a convenience sample of visitors to the Energy Innovation Center in San Diego, CA. A convenience sample is a form of non-probability sampling (meaning that respondents are not selected randomly) where the sample is drawn from the population that is close at hand rather than pulled from any sample frame.

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Demonstration Showcase Evaluation Findings 7

Participant Characterization

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Demonstration Showcase Evaluation Findings 8

Majority of respondents were commercial market actors

Overall, the majority of respondents were commercial market actors (57%); The majority of whom worked on multiple sites (aided).

Attendee Type	Number of Respondents (Multiple Resp)	% of Respondents
Commercial market actor (works with multiple sites)	20	57%
Residential customer	6	17%
Commercial facility manager (works on one site)	5	14%
Other	6	17%
Total	35	100%

* "Other" includes one utility employee, one equipment wholesaler, and four employees who did not specify the number of sites they served (one architect, one maintenance staffer, one engineer, and one non-profit representative).

Profession	Percent of attendees (n=35)
Rater/Engineer/Consultant (multiple sites)	26%
Contractor/engineer (multiple sites)	23%
Facilities manager (single site)	14%
Contractor/engineer (undetermined # sites)	14%
Other	11%
Architect	9%
No response	3%
Total	100%

* "Other" includes one logistics analyst, two physicians, and one retiree.

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Demonstration Showcase Evaluation Findings 9

80% of respondents viewed more than one technology during their visit; lighting was most frequent

Technology Viewed	Number of Respondents	% of Respondents (n=35)
Multiple Technologies	28	80%
One Technology Only	6	17%
Don't remember	1	3%
Total	35	100%

ETP Supported Technology Type (Multiple Response)	Percent of attendees looking at technology type (n=35)
Lighting	83%
Daylighting	66%
HVAC	66%
Thermal Storage	29%
Other technology*	23%

*Other technologies mentioned included solar, IDSM, refrigeration, building design, axial fans, the gardens, and the lending library.

Energy Innovation Center

Lighting Display

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Demonstration Showcase Evaluation Findings 10

Program Performance Metric

Self reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS.

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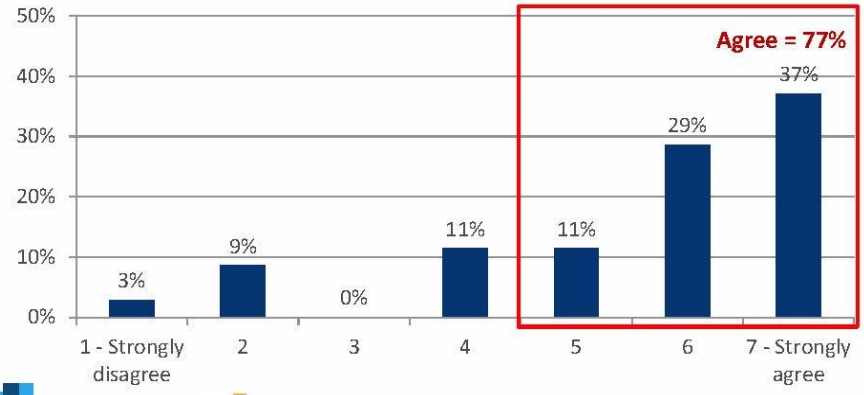
Demonstration Showcase Evaluation Findings 11

PPM: Three quarters of respondents report that they are more knowledgeable about the technologies demonstrated by ETP at the EIC

Notably, 80% of respondents said they knew about some or all of the technologies before viewing them.

Based on my experience learning about these energy efficiency technologies, I am now more knowledgeable about the technologies demonstrated than I was before. (n=35)



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Demonstration Showcase Evaluation Findings 12

Other Program Outcomes

- Customers Pass Word of Mouth Recommendations to Their Peers about Demonstrated Integrated Measures.
- Reduction in Market Barriers.
- Increased Adoption Rate of Technology by Customers.

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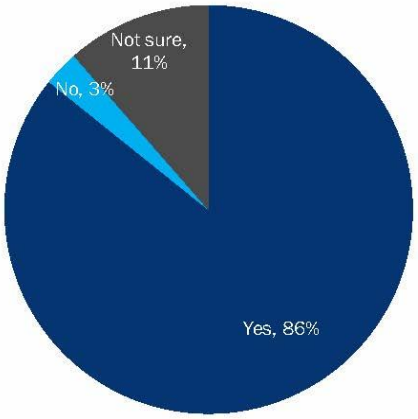
Demonstration Showcase Evaluation Findings 13

Outcome: The majority of respondents plan to recommend the technology to others

Based on your visit to the EIC, do you plan to recommend this technology to others? (n=35)



Who will recommend to	% of Respondents (Multiple response) (n=30)
Clients/Customers	37%
Owner/Employer	23%
Colleagues	13%
Everyone (general)	13%
Friends	10%
Other businesses	7%
Other	3%
Don't know	10%
Total	100%

Reason will not recommend based on EIC visit	% of Respondents (Multiple response) (n=1)
Was already familiar with technologies, did not need EIC information	n=1

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Demonstration Showcase Evaluation Findings 14

Survey used statements to test the reduction of market barriers for EIC respondents

Market Barrier	Questions
Performance uncertainty	▪ I am now better informed about the energy performance of this type of technology than I was before. ▪ It is easier to make purchasing decisions about this type of technology than it was before.
Information and search costs	▪ It will be easier to find information about this type of technology than it was before.
Hidden costs	▪ I understand more about the maintenance and operating costs for this type of technology than I did before.
Asymmetric information	▪ It is easier to evaluate claims made in the marketplace about this type of technology than it was before.

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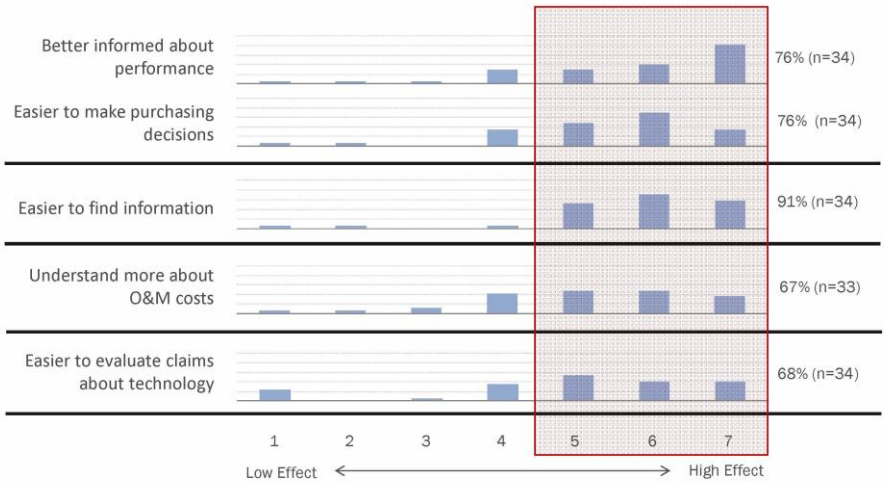
Demonstration Showcase Evaluation Findings 15

Outcome: The showcase resulted in medium to high reduction for respondent market barriers



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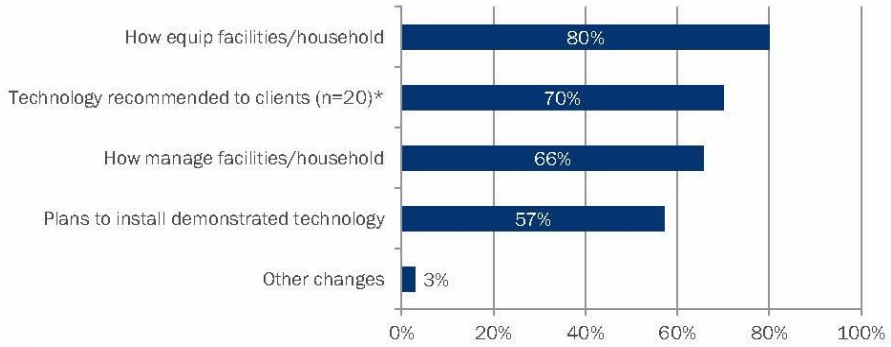
Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive measurement of market barriers

Demonstration Showcase Evaluation Findings 16

Outcome: Respondents indicate that learning about these technologies will influence a variety of changes

- All of the respondents indicated that they would make at least one change to either their equipment or practices
- The respondent who said "other" said they will make changes to their marketing

Generally speaking, will learning about these energy efficient technologies influence changes in any of the following ?(n=35) (Aided)



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*Base: Number of respondents who said they work with multiple facilities and indicated they are market actors.

Demonstration Showcase Evaluation Findings 17

Overall, the EIC project is affecting population of respondents as measured by PPM and intended outcomes

Responses to survey instrument provide measurement of program outcomes.

Type	Base	Metric	Result
PPM	All attendees (n=35)	More knowledgeable about the technologies demonstrated than before	77% indicate more knowledgeable
Outcome	All attendees (n=35)	Plan to recommend technology to others	86% plan to recommend technology
Outcome	All attendees (n=35)	Agreement with reduction in market barriers	67% to 91% indicate reduction in market barriers
Outcome	All attendees (n=35)	Attending EIC influenced changes in equipment or practices	100% indicate will influence changes in equipment /practices

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Demonstration Showcase Evaluation Findings 18

Food Service Technology Center (FSTC) Demo Kitchen Participant Survey

(ET12PGE2201)

Opinion Dynamics Itron

Demonstration Showcase Evaluation Findings 19

The FSTC project sought to provide customers with a better understanding of a suite of emerging technologies

Primary Performance Metric: Self reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS

Other Program Outcomes:

- Customers pass word of mouth recommendations to their peers about demonstrated integrated measures
- Customers / Influencers have better understanding of integrated solutions *(same as PPM)*
- Reduction in market barriers
- Increased adoption rate of technology by customers

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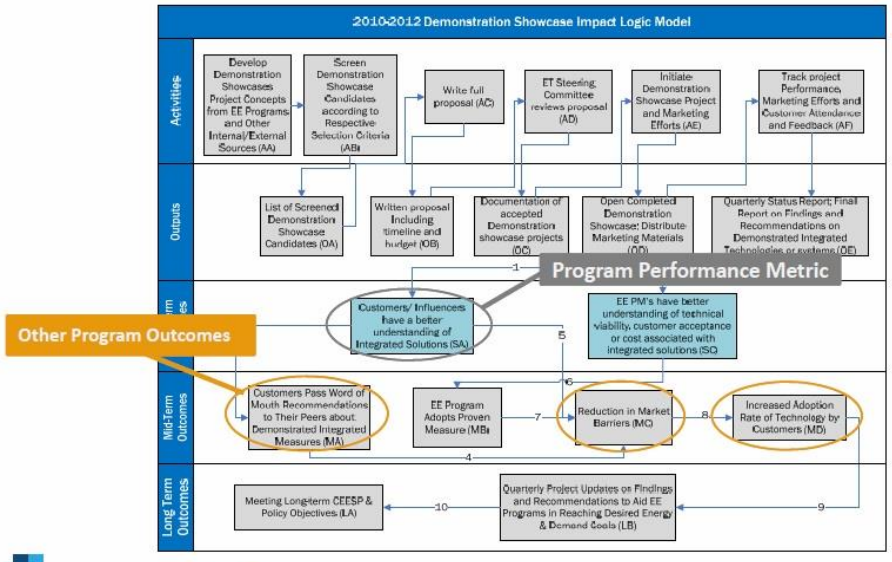
Demonstration Showcase Evaluation Findings 20

Effort reviewed outcomes based upon DS logic model



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Demonstration Showcase Evaluation Findings 21

Methodology

We fielded an Internet survey to 58 Food Service Technology Demo Kitchen attendees. We conducted a census of all attendees. We sent out 3 reminders, and offered incentives ranging from $25 to $50 to increase response rates. The survey was fielded in from June 1 to June 12, 2013.

Due to the small number of respondents, findings may not be generalizable to population.

Population	90
Records with no email address (removed from sample)	32
Total Emails Sent	58
Completes	11
AAPOR Response Rate	**19.6%**

Showcase Event	Number of Respondents	% of Respondents (n=11)	Number of Attendees (N=58) *	% of Population (N=58)*
Bridges	5	45%	30	52%
Comal	3	27%	25	43%
Vic's All Star Kitchen	3	27%	11	19%
Total	11	100%	58	100%

*Some participants attended multiple events.

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Demonstration Showcase Evaluation Findings 22

Participant Characterization

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Demonstration Showcase Evaluation Findings 23

Majority of respondents were restaurant owners and were aware of at least one of the demonstrated technologies before attending

Overall, the majority of respondents were restaurant owners (5 of 11).

9 of the 11 respondents were aware of at least one demonstrated technology before they attended the showcase.

Attendee Type	Number of Respondents
Restaurant Owner	5
Institution Manager	3
Other	2
Total	11

Aware of at least one technology before attending?	Number of Respondents
Yes	9
No	2
Total	11

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Demonstration Showcase Evaluation Findings 24

82% of respondents were aware of at least one technology prior to attending, but for most technologies awareness was increased

Site	ETP Supported Technology Type	Aware of technology before showcase	Saw demonstration or received information on at showcase	Result
Bringes (n=5)	High efficiency forced air convection ovens	2	5	Increased awareness
	High efficiency gas fryer	2	4	Increased awareness
	LED and fluorescent lamps	4	4	No change
	High efficiency walk-in freezer	2	3	Increased awareness
Comal (n=3)	High efficiency gas fryer	1	2	Increased awareness
	High efficiency walk-in cooler	N/A	0	
	High efficiency Accutemp steamer	N/A	0	
	high efficiency ice machine	0	1	Increased awareness
	High efficiency condensing water heaters	0	2	Increased awareness
	High efficiency true reach-in refrigerators	0	1	Increased awareness
	High efficiency low flow pre-rinse spray valve	2	2	No change
	LED lighting	1	3	Increased awareness
	A demand control ventilation EMS	N/A	0	
Vic's (n=3)	High efficiency forced air convection ovens	1	3	Increased awareness
	High efficiency gas fryer	0	3	Increased awareness
	High efficiency griddle	0	2	Increased awareness

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Demonstration Showcase Evaluation Findings 25

Program Performance Metric

Self reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS.

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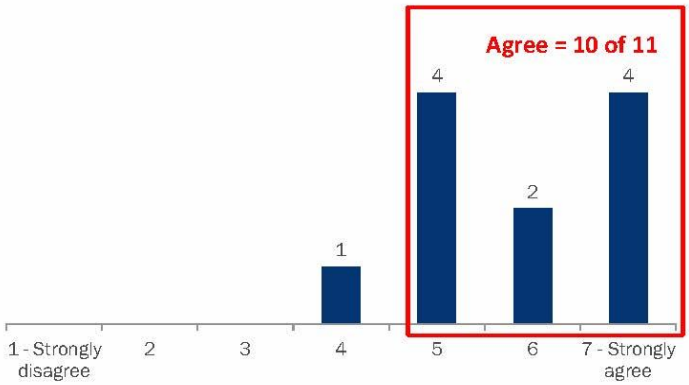
Demonstration Showcase Evaluation Findings 26

PPM: 10 of the 11 respondents report that they are more knowledgeable about the technologies demonstrated at showcases

Notably, 9 of the 11 respondents said they were aware of at least one of the technologies before viewing them.

Based on my experience learning about these energy efficiency technologies, I am now more knowledgeable about the technologies demonstrated than I was before. (n=11)



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Demonstration Showcase Evaluation Findings 27

Other Program Outcomes

- Customers pass word of mouth recommendations to their peers about demonstrated integrated measures.
- Customers experience a reduction in market barriers.
- Customers increase adoption rate of technology.

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Demonstration Showcase Evaluation Findings 28

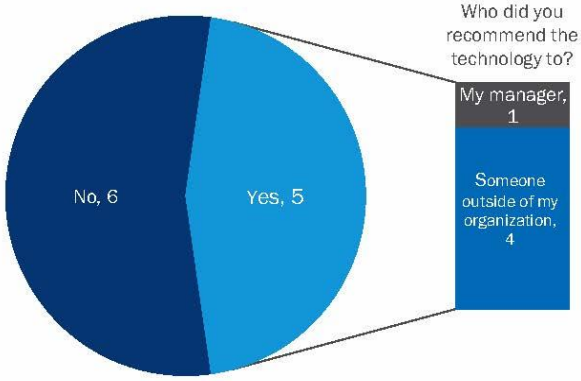
Nearly half of the respondents recommended the technology to others

10 of the 11 respondents said they would provide clients or colleagues positive information about the technologies and one respondent said they would provide neutral information.

Most of the 10 who would give positive information said they were impressed with the efficiency of the equipment or with the information provided by the demonstrations.

The one respondent who would provide neutral feedback thought the equipment was expensive and was not sure it was worth it.

Based on your visit to the showcase, have you recommended this technology to others? (n=11)



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Demonstration Showcase Evaluation Findings 29

Survey used statements to test the reduction of market barriers for FSTC respondents

Market Barrier	Agreement Statements
Organizational practices and customs	▪ My organization is more likely to consider installing energy-efficient technology than it was before. ▪ My organization is more likely to think about operations and maintenance costs when making decisions about purchasing this type of technology than it was before.
Performance uncertainty	▪ I am now better informed about the energy performance of this type of technology than I was before. ▪ It is easier to make purchasing decisions about this type of technology than it was before. ▪ I am now more certain about the effects on kitchen productivity that may result from this type of technology than I was before.
Information and search costs	▪ It will be easier to find information about this type of technology than it was before.
Hidden costs	▪ I understand more about the maintenance and operating costs for this type of technology than I did before.

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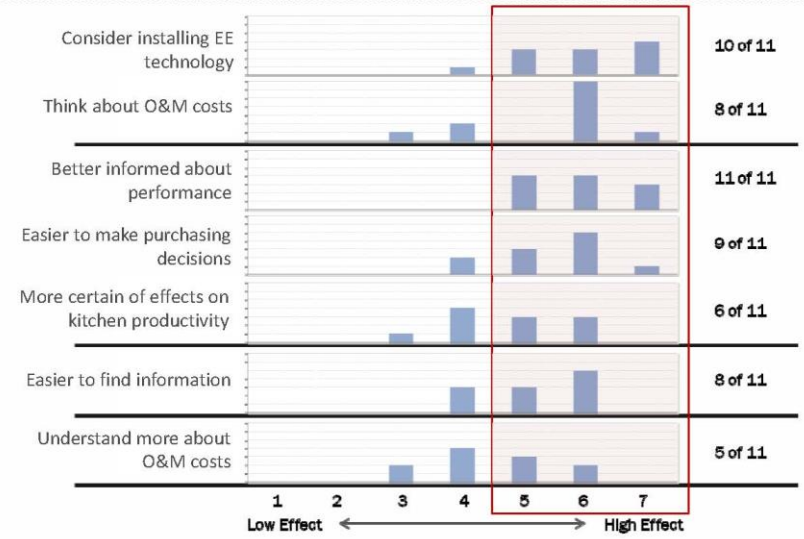
Demonstration Showcase Evaluation Findings 30

Outcome: ETP activities reduced existing market barriers for respondents



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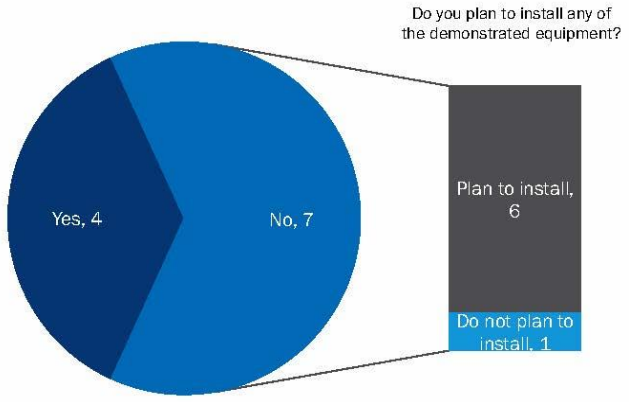
Demonstration Showcase Evaluation Findings 31

Outcome: Of the 11 respondents, 4 have installed one of the demonstrated technologies, 6 have plans to install

Of those who plan to install the demonstrated equipment, 2 plan to install in the next year and 4 don't know when they plan to install.

The one respondent who does not plan to install does not work in a commercial kitchen.

Since attending the event, have you installed any of the demonstrated energy efficient equipment in your kitchen(s)? (n=11)



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Demonstration Showcase Evaluation Findings 32

Overall, the FSTC demonstrations are affecting the population of respondents as measured by PPM and intended outcomes

Responses to survey instrument provide measurement of program outcomes.

Type	Base	Metric	Result
PPM	All attendees (n=11)	More knowledgeable about the technologies demonstrated than before	10 of 11 state are more knowledgeable
Outcome	All attendees (n=11)	Recommend technology to others	5 of 11 have recommended technology
Outcome	All attendees (n=11)	Agreement with reduction in market barriers	Between 5-11 of 11 indicate reduced barriers
Outcome	All attendees (n=11)	Increased adoption rate of technology	4 have installed technology, 6 have plans to install

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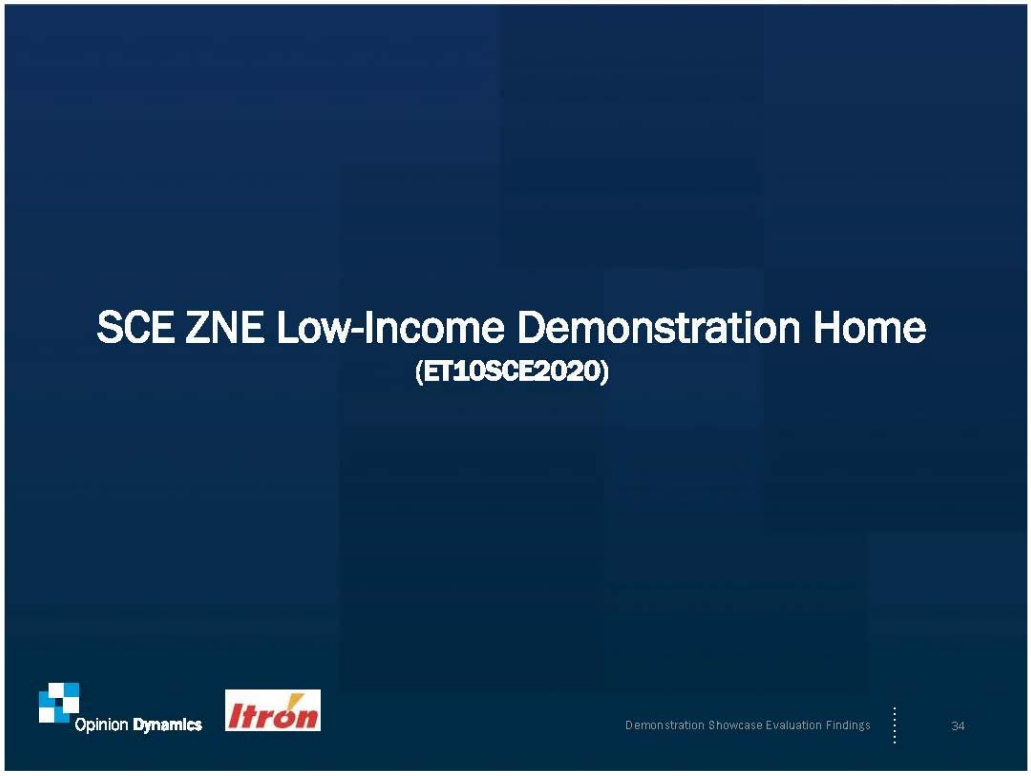
Demonstration Showcase Evaluation Findings 33


SCE ZNE Low-Income Demonstration Home
(ET10SCE2020)
Opinion Dynamics
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Demonstration Showcase Evaluation Findings
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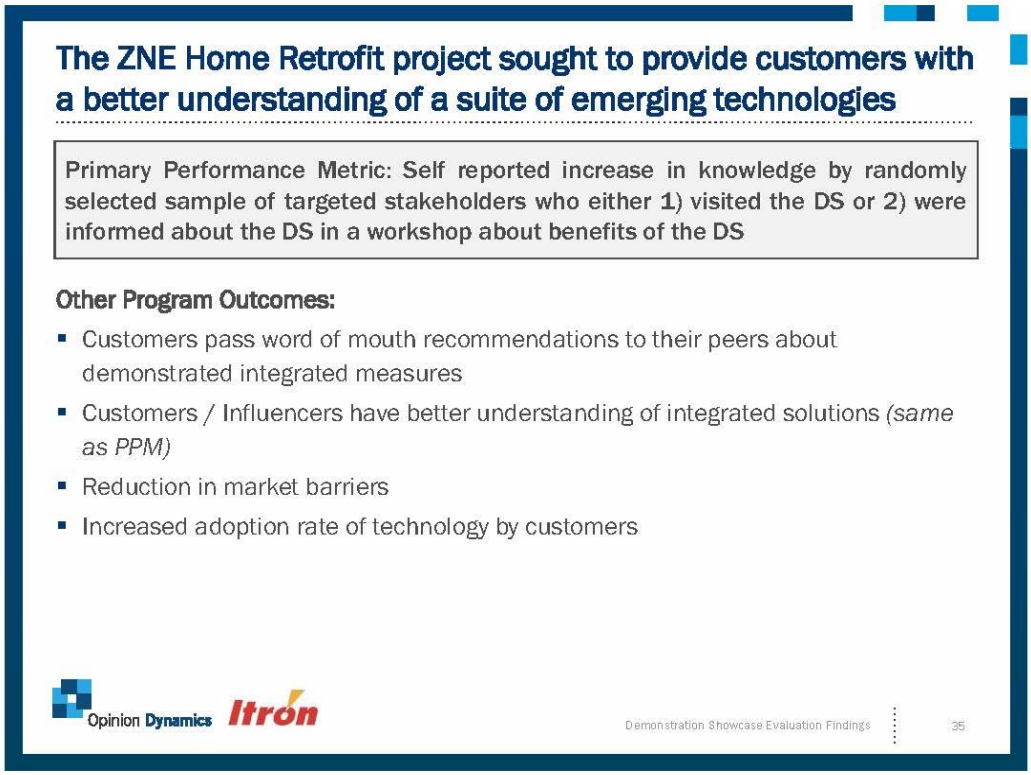
The ZNE Home Retrofit project sought to provide customers with a better understanding of a suite of emerging technologies
Primary Performance Metric: Self reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS
Other Program Outcomes:
Customers pass word of mouth recommendations to their peers about demonstrated integrated measures
Customers / Influencers have better understanding of integrated solutions (same as PPM)
Reduction in market barriers
Increased adoption rate of technology by customers
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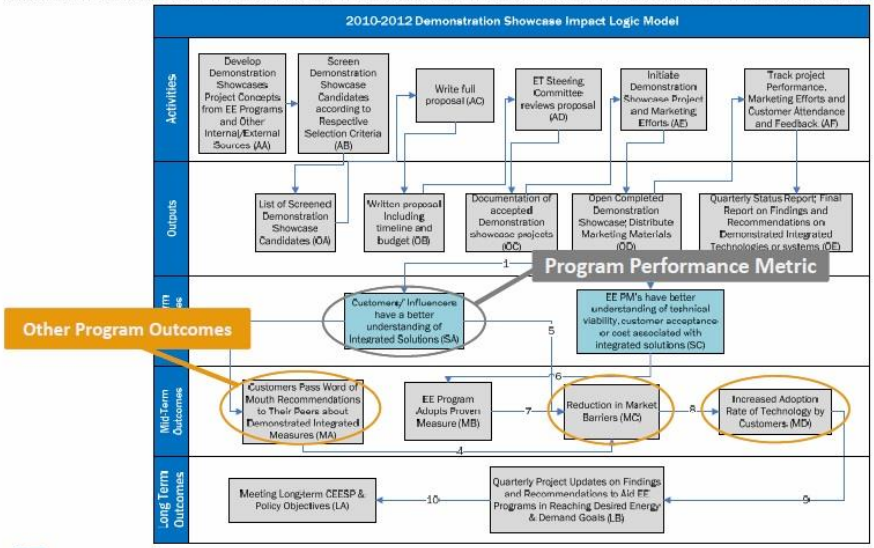
Demonstration Showcase Evaluation Findings
35

Effort reviewed outcomes based upon DS logic model



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Demonstration Showcase Evaluation Findings 36

Methodology

- We conducted in-depth interviews with the three local stakeholders/influencers that represent the low income community. Interviews were conducted by phone in June, 2013. Stakeholders include:
  - **Community Action Partnership of San Bernardino County** (CAPSBC)
  - **San Bernardino Green Alliance** (SBGA)
  - **Neighborhood Housing Services of the Inland Empire** (NHSIE)
- Utilized a structured stakeholder interview guide that asked about:
  - Organization type
  - Population served
  - Experience with the program
  - Awareness of the energy efficiency and renewable technologies demonstrated at the home
  - Market barriers
  - Program influence

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Demonstration Showcase Evaluation Findings 37

Project Overview

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Demonstration Showcase Evaluation Findings 38

ZNE Project Overview*

ZNE Low-Income Demonstration Showcase

- Completed December 2011 at one low-income residence in San Bernardino County
- Installed interior and exterior energy efficiency measures and solar PV

ZNE project objectives included:

- Achieve ZNE or near ZNE at a residential site
- Demonstrate opportunities in building performance and energy usage associated with a combined package of energy efficient measures, smart appliances, and on-site renewable energy

*Source: SCE report "ZNE Net Energy Home Retrofit," March 2012. ET10SCE2020.

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Demonstration Showcase Evaluation Findings 39

Project achieved 38% ZNE with improvements to the building performance, conditioned space and reduction in energy usage before renewables installed*

Residential measures installed include:

- Low-E windows
- Air sealed exterior shell
- Insulated cellulose walls and attic
- Renewed cool roof with ridge vent & foil radiant barrier
- Phase change material on the attic floor
- New energy efficiency exterior doors
- New interior & exterior lighting
- New Energy Star rated appliance
- Upgraded electrical service panel and load center
- Tankless domestic hot water system
- Photovoltaic renewable solar panel system
- VRF multi-split heat pump system

*Technology list and photos source: SCE report "ZNE Net Energy Home Retrofit," March 2012. ET10SCE2020.

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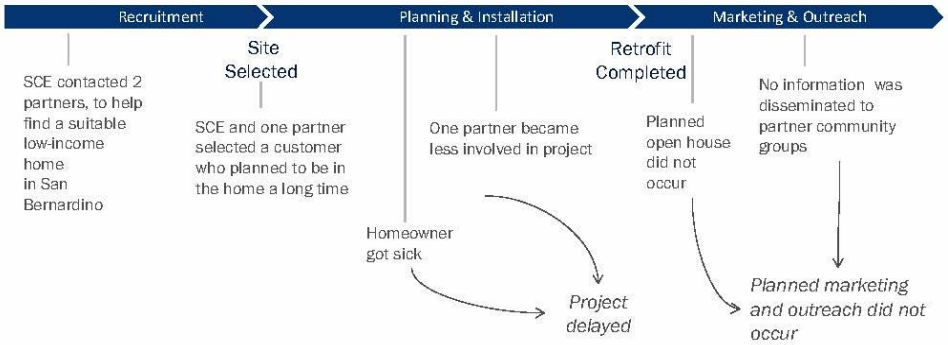
Demonstration Showcase Evaluation Findings 40

Project achieved 38% of ZNE with improvements (without renewables), but did not perform outreach to target audience

ZNE Low-Income Home Retrofit Timeline



Project Timeline:
Progress Point: Preliminary proposal created and decision made – 6/1/2010
Progress Point: Funding proposal created and decision made – 8/1/2010
Progress Point: Data / information collection starts – 5/1/2011
Progress Point: Data / information collection complete – 1/1/2012
Progress Point: Report / deliverable complete – 4/1/2012
Project Expected Duration – 22 months

Italicized text indicates diversion from planned program process

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Demonstration Showcase Evaluation Findings 41

Demonstration Showcase project engaged local stakeholders

SCE partnered with three local stakeholders. According to the report, the ZNE Home Retrofit project aligned with the stakeholders' efforts of developing housing and community awareness in energy efficiency, environmental quality, alternative materials and resources, and water conservation.*

Below we provide a description of local stakeholders sourced from interviews:

	Community Action Partnership of San Bernardino (CAPSBC)	San Bernardino Green Alliance (SBGA)	Neighborhood Housing Services of the Inland Empire (NHSIE)
Org type	Non profit community based organization serving low-income residents of San Bernardino county	A temporary, public/private partnership founded in 2010 to increase regional economic development through healthy communities and high quality green jobs	Non profit community based organization helping current and future homeowners
Population served	Low income families–largest non profit provider of low-income services in the county	Residents and business affected by the economic downturn	Current and future homeowners
Primary activities	Weatherization, energy rate assistance, food bank, social services, transitional housing	Member meetings. Demonstration home was 1st tangible product from SBGA	Real estate lending, homeowner/financial literacy, beautification and energy efficiency grants and loans, foreclosure assistance
Influencer of low-income energy use?	Yes, through weatherization programs and direct retrofits	Indirect, influences alliance members who influence their target populations	Yes, through grant awards and direct retrofits

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*Source: SCE report "ZNE Net Energy Home Retrofit," March 2012. ET10SCE2020.

Demonstration Showcase Evaluation Findings 42

Stakeholders interviewed had varied experiences with the project

We found that the local stakeholder's experiences with the project differed:

- **Stakeholder 1:** The organization no longer exists, during the project the organization began to dissolve. The organization was most involved in the project of all 3 stakeholders. A member of the organization took photos of the completed demonstration home and sent to SCE, but photos were not included in literature or other media.
- **Stakeholder 2:** This local stakeholder indicated that they were not involved in the project and did not know about it.
- **Stakeholder 3:** Interviewee indicated mixed experience with the project. According to the interview, the respondent expected to have their contractors do some of the interior retrofits but SCE only wanted exterior. Coordination issues and frustration with long process.

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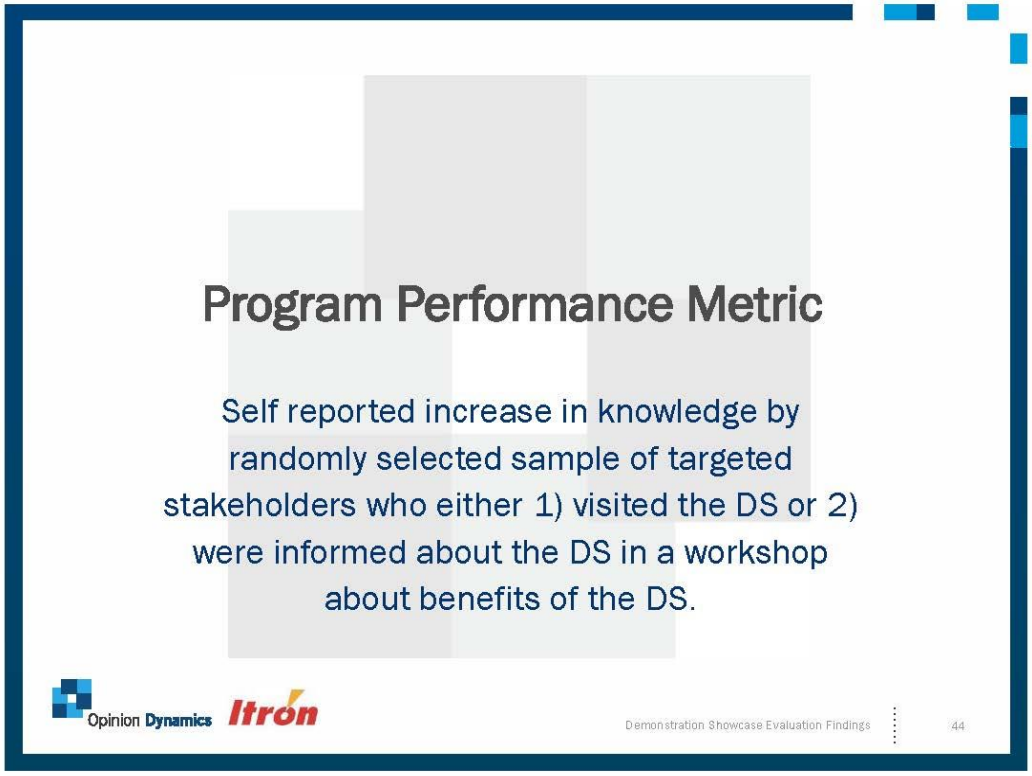
Demonstration Showcase Evaluation Findings 43


Program Performance Metric
Self reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS.
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Demonstration Showcase Evaluation Findings
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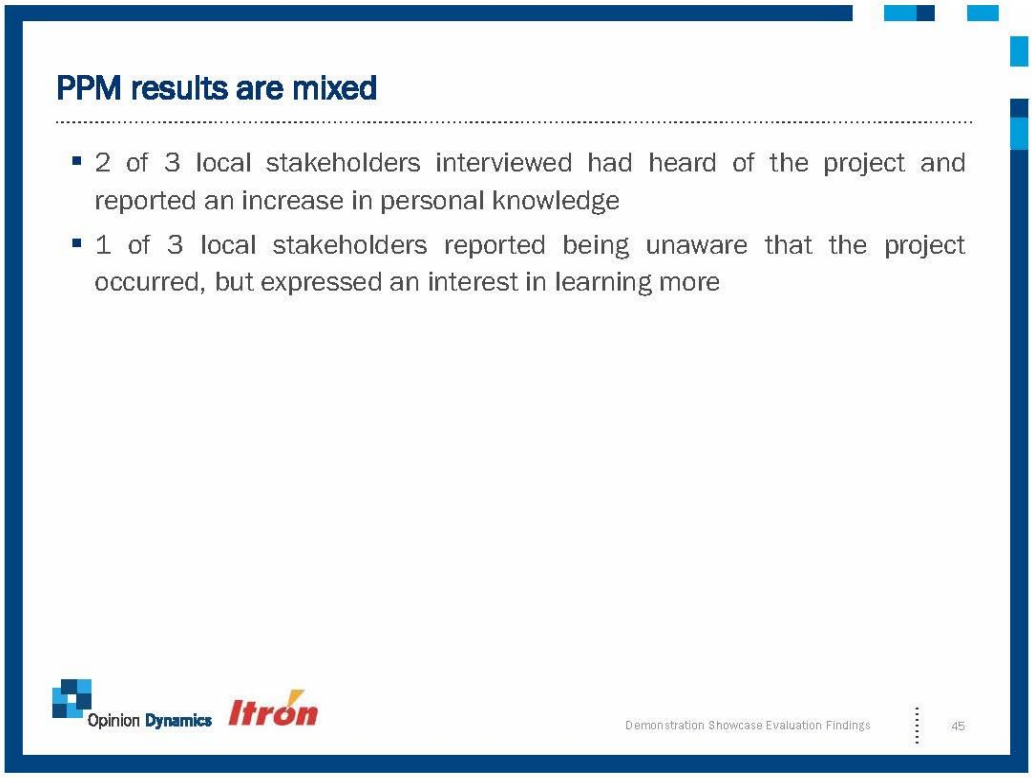
PPM results are mixed
2 of 3 local stakeholders interviewed had heard of the project and reported an increase in personal knowledge
1 of 3 local stakeholders reported being unaware that the project occurred, but expressed an interest in learning more
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Demonstration Showcase Evaluation Findings
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Other Program Outcomes
Customers pass word of mouth recommendations to their peers about demonstrated integrated measures.
Reduction in market barriers.
Increased adoption rate of technology by customers.
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Demonstration Showcase Evaluation Findings
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Outcomes were not met given no outreach
Customers pass word of mouth recommendations to their peers about demonstrated integrated measures
The two stakeholders who knew of the project did not share their new knowledge with their target populations or other staff.
The stakeholders made no changes of offerings to their targeted population.
Reduction in market barriers.
Increased adoption rate of technology by customers.
Given that information was not disseminated, we infer that no barriers could be reduced or adoption rates increased within the targeted populations of the three stakeholders based on this specific demonstration showcase.
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Demonstration Showcase Evaluation Findings
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Project did not have a strong alignment with the Demonstration Showcase parameters as defined in the PIP.

Demonstration Showcases Parameters as defined in PIP		Adherence of ZNE Low-Income Home with Parameters	Description
Purpose	Visibility	No	Low
Theme	Exposure	No	Low
Units Installed	One (or entire floor/building/facility)	Yes	Entire home
Number of Sites	One or more as strategically valuable	Yes	1
Unique Measures	More than one measure up to whole systems (exceptionally, just one)	Yes	Whole system
Customer Impact	Large number of viewers	No	Low
Visibility*	Public	No	Some visibility on home exterior, but generally low
Duration	Duration of public interest / impact	Unknown	Unclear
Data Collection	None to moderate	Yes	38% ZNE with improvements to the building performance, conditioned space and reduction in energy usage before renewable installed
Dissemination Mechanism*	Short-term exposure and word of mouth	No	Very low. Possibly some word of mouth, exposure for those involved only.

*Note that there is a Phase II planned for this projects which will include further information dissemination.

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Demonstration Showcase Evaluation Findings 48

Appendix: Secondary Data Review

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Demonstration Showcase Evaluation Findings 49

We reviewed secondary survey data collected by IOUs

- 4 projects had an identifiable target audience with existing survey data that was leveraged

Project #	Project	Sample Frame	# of Completes
ET11PGE2201	CLTC Lighting Demonstration	Unknown	112
ET12PGE2221	ZNE Demonstration Home	Unknown	27
ET12PGE2231	ETC Lighting Demonstration	Unknown	64
ET12PGE2291	PEC Lighting Demonstration	Unknown	116

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Demonstration Showcase Evaluation Findings 50

Program Performance Metric

Self reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS

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Demonstration Showcase Evaluation Findings 51

Overall results are inconclusive regarding achievement of PPM for survey respondents

We leveraged survey questions fielded to CLTC Lighting Demonstration and ZNE Demonstration Home projects that were similar to the PPM. Note that the questions fielded were not the PPM.

Other surveys did not ask questions that were similar in nature to the PPM.

Project #	Project	n	Question	PPM
ET11PGE2201	CLTC Lighting Demonstration	65	Based on percentage of respondents who said they learned about "LED longevity" or "LED heat output" from the demonstration.	58%
ET12PGE2221	ZNE Demonstration Home	18	Percent of respondents who said their understanding of ZNE benefits increased. Likert scale (5 point scale), where >3 is agree.	74%
ET12PGE2231	ETC Lighting Demonstration	n/a	n/a	n/a
ET12PGE2291	PEC Lighting Demonstration	n/a	n/a	n/a

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Demonstration Showcase Evaluation Findings 52

Other Program Outcomes

- Customers pass word of mouth recommendations to their peers about demonstrated integrated measures.
- Reduction in market barriers.
- Customers increase adoption rate of technology.

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Demonstration Showcase Evaluation Findings 53

Program outcome results are mixed

Found that respondents indicated that most showcases led to word of mouth recommendations

No survey questions addressed reductions in market barriers

As such, we provide no results for this program outcome.

Project	n	Question	Recommended
CLTC Lighting Demonstration	112	N/A	N/A
ZNE Demonstration Home	16	Based on percentage of respondents who said that their likelihood to develop a professional network of others interested in ZNE increased.	59%
ETC Lighting Demonstration	61	Based on percentage of respondents who said that they were "very likely" or "somewhat likely' to recommend the product to a colleague.	97%
PEC Lighting Demonstration	105	Based on percentage of respondents who said that they were "very likely" or "somewhat likely' to recommend the product to a colleague.	91%

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Demonstration Showcase Evaluation Findings 54

Respondents indicate that showcases increased their likelihood to install technologies, when asked

Project	n	Question	Adopt Technology
CLTC Lighting Demonstration	112	N/A	N/A
ZNE Demonstration Home	27	N/A	N/A
ETC Lighting Demonstration	64	What is the likelihood you would install a lighting product(s)? (% Answering Very likely or somewhat likely on Scale 1-7)	87%
PEC Lighting Demonstration	116	What is the likelihood you would install a lighting product(s)?	73%

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Demonstration Showcase Evaluation Findings 55

Description of showcase projects not evaluated

The evaluation team did not evaluate 3 completed DS projects as these projects built towards future showcases, but were not evaluable with current metrics:

- ZNE New Home RFQ (ET10SCE2040):

  Focused on applying research to find cost-effective (on a life cycle basis) solutions to achieve zero net energy (ZNE) performance for new residential construction. The scope of this project was directed towards identifying and implementing optimum solutions for creating a ZNE offering for homebuilders. To enable this, SCE sought homebuilders through a RFQ process who are interested in building ZNE homes that would serve as representative ZNE homes within SCE's service territory. (This project was the RFQ.)

- ZNE Residential Load Impact Forecast (ET11SCE2050)

  This DS was "an effort to identify technical and economic potentials of specific market segments." "This market study is intended to provide SCE with market forecasts that will aid their assessments of the changes in loads and distributed generation on their service grid related to new homes." (This was a paper study.)

- Impact of Smart Grid on Connected Homes (ET12SCE2010)

  This DS project was a study of the connected home market ('smart home') focusing on the current status of connected home solutions and technologies; suppliers; smart grid deployment, and business models. The findings were stated to be used for various end objectives such as to increase the awareness of and generate demand for connected homes; create appropriate business models; and standardize codes, communications standards and topologies. (This was a paper study.)

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Demonstration Showcase Evaluation Findings 57

Survey explored market barriers for EIC respondents

Overall, found that many of the PIP-identified market barriers ratings varied by barrier type. These market barriers include:

Agreement Statements
▪ When we select technology, the most important thing we look for is reliability of operation. ▪ The return on investment from energy efficient technology is difficult to estimate. ▪ Our company is unwilling to take the risks involved in the use of high efficiency technology.
▪ It's hard to figure out which technology to buy because of all the technical information you have to find. ▪ It's hard to get a handle on the benefits of energy efficient technology without a detailed written analysis.
▪ I believe that there may be additional operations and maintenance costs associated with energy efficient technologies, but we don't know what they are.
▪ Sales people usually just try to push the products of whatever manufacturer they're closest to. ▪ Equipment dealers and representatives use the desire for high-efficiency technologies by customers like us to charge more than it's really worth. ▪ I think much of what equipment sales people tell us about the performance of high efficiency technology is exaggerated.

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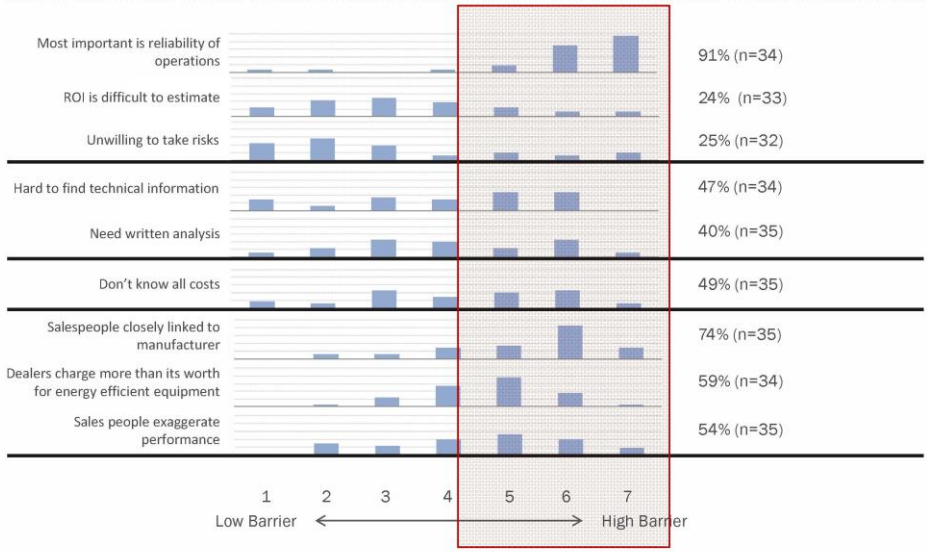
Demonstration Showcase Evaluation Findings 59

Results indicate varying market barriers for EIC respondents



Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive measurement of market barriers

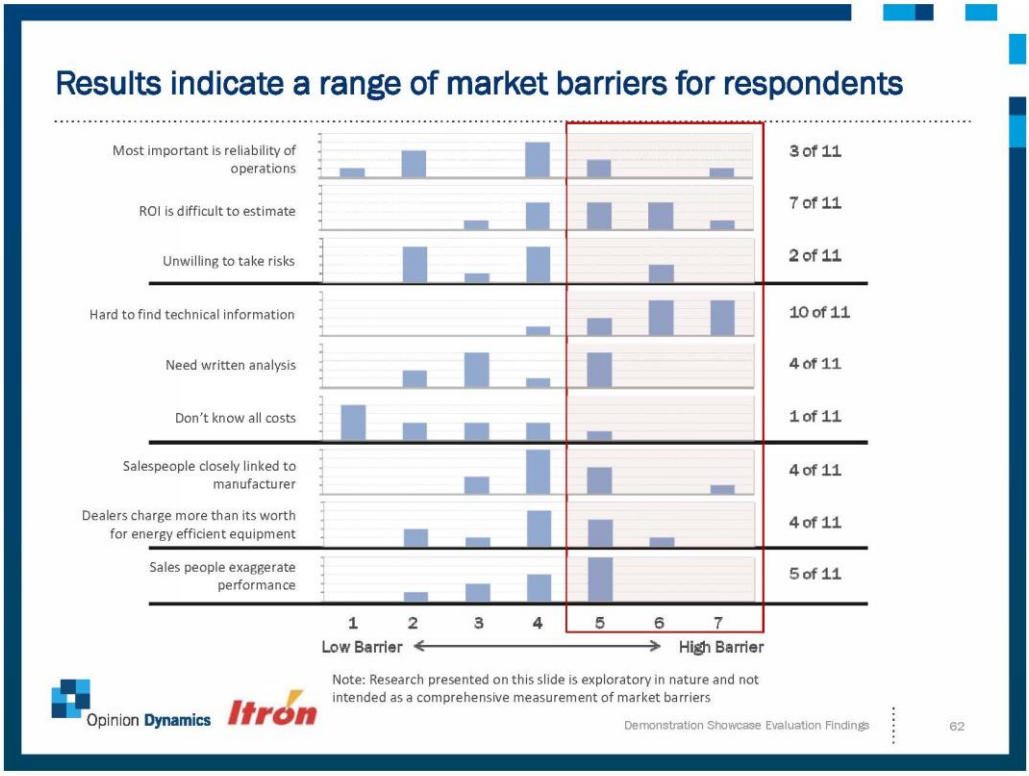
Demonstration Showcase Evaluation Findings 60

Survey explored market barriers for FSTC respondents

Overall, found that many of the PIP-identified market barriers were rated as "medium" barriers by FSTC respondents. These market barriers include:

Agreement statements
▪ Our practice is not to worry about our technology unless it breaks down ▪ Our company includes the long run operating and maintenance costs of technology in its initial calculations ▪ Investing extra money in energy efficient technology would reduce our ability to take advantage of other investment opportunities
▪ When we select technology, the most important thing we look for is reliability of operation. ▪ The return on investment from energy efficient technology is difficult to estimate. ▪ Our company is unwilling to take the risks involved in the use of high efficiency technology.
▪ It's hard to figure out which technology to buy because of all the technical information you have to find. ▪ It's hard to get a handle on the benefits of energy efficient technology without a detailed written analysis.
▪ I believe that there may be additional operations and maintenance costs associated with energy efficient technologies, but we don't know what they are.

Demonstration Showcase Evaluation Findings 61


Results indicate a range of market barriers for respondents
Most important is reliability of operations
3 of 11
ROI is difficult to estimate
7 of 11
Unwilling to take risks
2 of 11
Hard to find technical information
10 of 11
Need written analysis
4 of 11
Don't know all costs
1 of 11
Salespeople closely linked to manufacturer
4 of 11
Dealers charge more than its worth for energy efficient equipment
4 of 11
Sales people exaggerate performance
5 of 11
1 2 3 4 5 6 7
Low Barrier
High Barrier
Note: Research presented on this slide is exploratory in nature and not intended as a comprehensive measurement of market barriers
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Demonstration Showcase Evaluation Findings
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C.4. TRIO ATTENDEE SURVEY RESULTS

TRIO PARTICIPANT SURVEY

Findings

July 18, 2013

Opinion Dynamics

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TRIO seeks to increase knowledge regarding doing business with utilities, among other program outcomes

Primary Performance Metric: Percent of attendees who voluntarily respond and self-report increased understanding on how to do business with utilities

Other Program Outcomes:

Access to Investors: By providing access to investors, TRIO events reduce information and search costs for attendees.

Bringing technology to market: Technologies enter the market directly after participation in TRIO event.

Submitting technology to IOU programs: Entrepreneurs and third party implementers submit technologies and technology briefs to IOUs.

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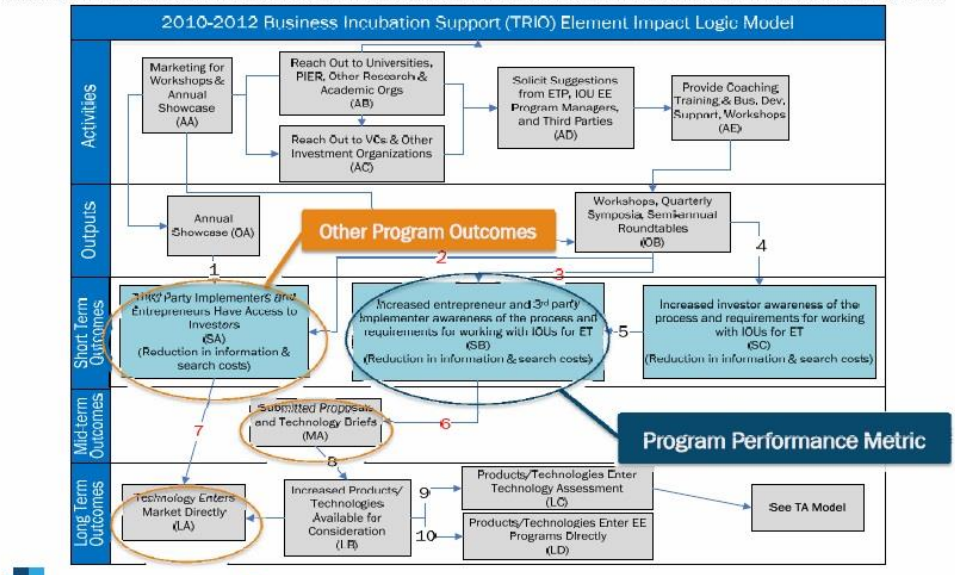
TRIO Attendee Survey Evaluation Findings 2

Effort reviewed outcomes based upon TRIO logic model



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TRIO Attendee Survey Evaluation Findings 3

Methodology

We fielded an internet survey to all 773 TRIO attendees who attended an event in the 2010-2012 program cycle. The survey was fielded from 4/25 to 5/13, and we sent up to three reminder emails. No investors responded to the emails, so we called the two investors for whom we had phone numbers to invite them to take the survey , but were unable to get a response.

Population	963
IOU employees/Speakers (removed from sample)	132
Missing email/duplicate email (removed from sample)	58
Sample Frame	773
Survey Respondents	69
Response Rate	**9.5%**

Note: the SCG population frame may include non-event attendees, who were likely screened out when taking the survey.

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TRIO Attendee Survey Evaluation Findings 4

Participant Characterization

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TRIO Attendee Survey Evaluation Findings 5

Respondents by Event Type and Host IOU

We explored for differences in responses between those who attended one event against those who attended multiple events. Despite having more respondents who had attended more than one event, we did not find statistically significant differences in response to the PPM (but did find some related to other outcomes). In the case of host IOU, we understand that the events are supposed to be implemented similarly across the state.

Note that we did not complete any surveys with investors, but estimate that there are likely 33 or more investors within the population frame.

Event Type	Number of Respondents	% of Respondents	% of sample frame
Single event	38	55%	70%*
More than one event	31	45%	30%*
Total	**69**	**100%**	**100%**

* Indicates statistically significantly different from respondents.

Host IOU (Multiple Response)	Number of Respondents	% of Respondents	% of sample frame
PG&E	42	61%	40%*
SCE	11	16%	33%*
SCG	24	35%	15%*
SDG&E	14	20%	12%

Note: Attendees may have attended multiple TRIO events hosted by different IOUs.
* Indicates statistically significantly different from respondents.

Attendee Type	Number of Respondents	% of Respondents	% of PG&E Attendees (N=475)*
Entrepreneur	50	72%	67%
Student/Academic	5	7%	17%
Third-party Implementer	14	20%	8%
Investor	0	0%	7%*
Total	**69**	**100%**	**100%**

*Based on PG&E events only as only PG&E tracked attendee categories.

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TRIO Attendee Survey Evaluation Findings 6

Nearly all of the responding entrepreneurs who attended TRIO (94%) are working on developing one or more technologies

When aided, one third to one half of respondents indicated that they were working on a CEESP Big Bold Goals specific technology category (as found in the R&T chapter).

Technology Category (Multiple Response)	Percent of Entrepreneurs with a Technology in Development (n=47)
Advanced HVAC	45%
Plug-loads and/or Smart Appliances	34%
Integrated Building Design and Operation	33%
Advanced Lighting	30%
Renewables	6%
Low-carbon emissions/carbon capture	6%
Electric vehicles	6%
Water-energy nexus	4%
Demand response	4%
Behavioral	4%
Energy Storage	4%

CEESP Big Bold Goals R&T Technology Category

Technology Phase of Development (Multiple Response)	Percent of Entrepreneurs with a Technology in Development (n=47)
Research and Development	40%
Product Development	40%
Assessment and Demonstration	51%
Commercialization	40%
Adoption	15%

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TRIO Attendee Survey Evaluation Findings 7

Most respondents (61%) attended TRIO in order to understand how to work with IOUs

When asked why they were interested in TRIO (n=69), respondents indicated (multiple response):

- **To learn how to work with IOUs on an emerging technology (61%)**
- To network (22%)
- To learn about what new technologies are being developed (12%)
- To learn about opportunities for 3rd party implementers (4%)

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 8

Program Performance Metric

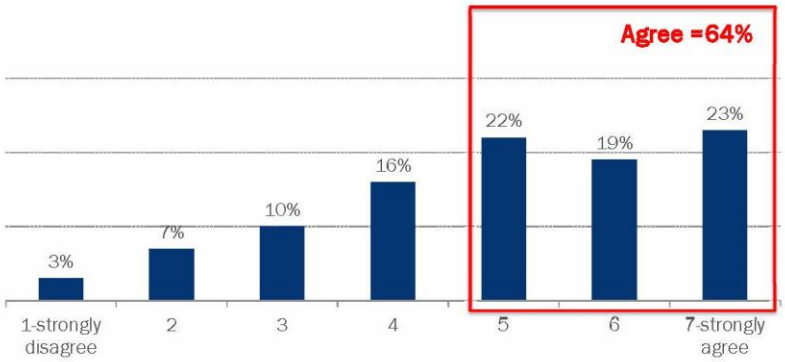
Percent of attendees who voluntarily respond and self-report increased understanding on how to do business with utilities

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 9

PPM: Two-thirds of respondents report that TRIO gave them a better understanding on the process and requirements for working with utilities

The information I received from TRIO allowed me to gain a better understanding of the process and requirements for working with utilities. (n=69)

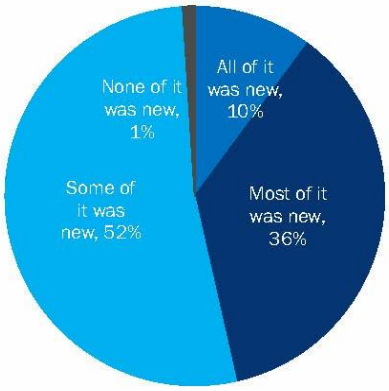


Opinion Dynamics Itron

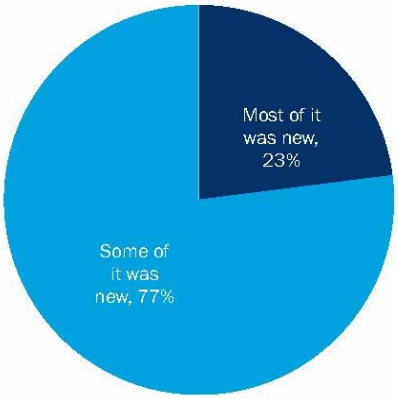
TRIO Attendee Survey Evaluation Findings 10

Nearly all of the respondents thought that the information presented at TRIO was new to them

How much of the information presented *at the first TRIO event you attended* was new to you... (n=69)



How much of the information presented *at subsequent TRIO events* was new to you? (n=31)



Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 11

General information about ETP was the most useful to respondents, followed by identifying IOU contacts

"What information in particular helped you gain a better understanding of how to work with utilities?" (n=44)

- Info about ETP in general (43%)
- Identifying contacts at IOU (23%)
- How technologies are evaluated by IOUs (16%)
- Too difficult/cumbersome to work with IOUs (14%)
- Specific IOU EE program offerings (11%)

"What information, if any, was not covered in the event that would have been helpful to you?" (n=67)

- Detailed information about the process of participating in ETP (24%)
- Areas of specific IOU technology interest (15%)
- Specific staff contact at IOUs (13%)
- Information on funding opportunities (12%)
- Case studies of technologies that have gone through the program (6%)

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 12

Other Program Outcomes

Facilitating networking.

Bringing technology to market.

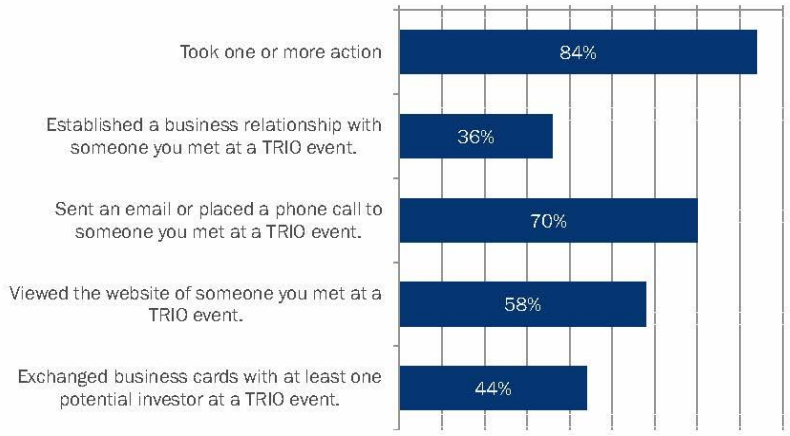
Submitting technologies for IOU consideration.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 13

Over 80% of responding entrepreneurs engaged in networking during or after the TRIO event, and 36% established a business relationship

Which of the following have you done since attending a TRIO event/while attending a TRIO event? (n=50) (Multiple Response) (Aided)

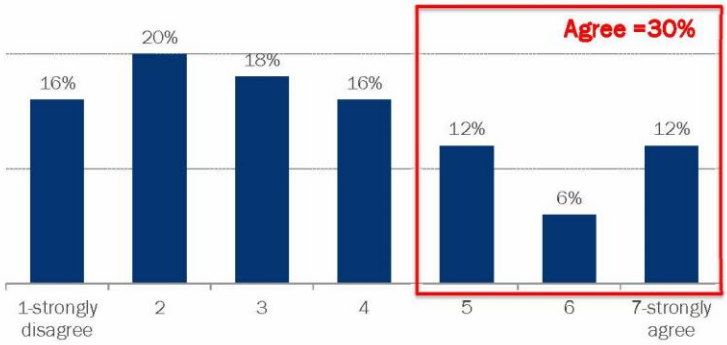


Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 14

Program Outcome: 30% of responding entrepreneurs indicated they were able to network with investors at TRIO events

I was able to network with potential investors during the event. (n=50)

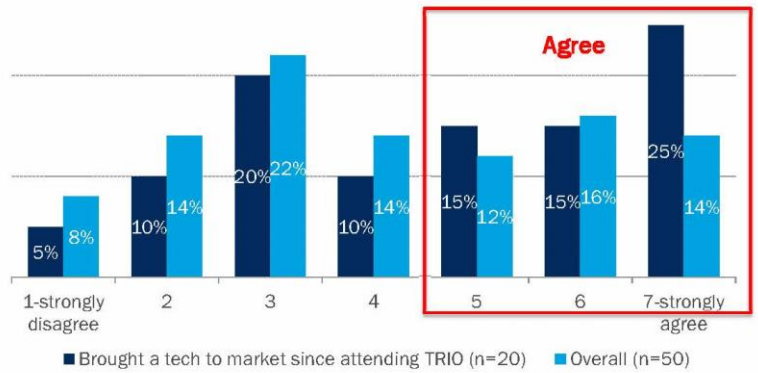


Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 15

Program Outcome: Since participating in TRIO, 40% of entrepreneurs have brought a technology to market

I received information from TRIO that (was/could be) helpful in bringing a new technology to market.*



=55% of those who have brought a technology to market since attending TRIO

=42% of responding entrepreneurs

* Those who have brought a technology to market received the wording "was", those who have not received the working "could be".

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 16

Program Outcome: Since participating in TRIO, 20 entrepreneurs have submitted a technology to a utility program

Where did they submit? (Multiple Response)

- 12 submitted to ETP
- 10 submitted to an IOU EE Program
- 5 submitted to a Third-Party Program

Results?

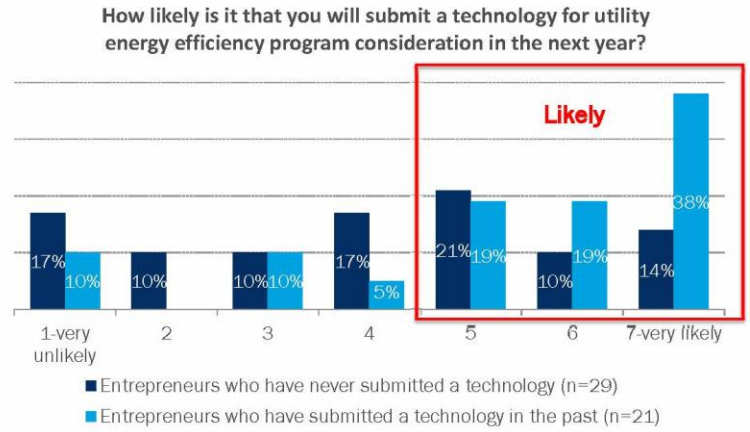
- 8 had a technology accepted (2 who had attended one event and 6 who had attended multiple events)
- 9 received feedback

Category of Technology Submitted to ETP or IOU EE Program or Third-Party EE Program (Multiple Response)	Percent of Entrepreneurs who Submitted Technologies (n=20)
Advanced HVAC	35%
Integrated Building Design and Operation	20%
Plug-loads and/or Smart Appliances	15%
Demand response	15%
Behavioral	15%
Advanced Lighting	10%
Water-energy nexus	5%
Energy Storage	5%
Other	10%

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 17

Over half of the responding entrepreneurs said that they are likely to submit technologies to IOU EE Programs in the next year



=45% of those who *have never* submitted a technology

=76% of those who *have* submitted a technology in the past

The most common reason why participants are unlikely to submit a technology is that the product is too early in the development stage (21%).

Opinion Dynamics Itron

In conclusion, TRIO is affecting the population of respondents as measured by PPM and intended outcomes

Primary Performance Metric: Percent of attendees who voluntarily respond and self-report increased understanding on how to do business with utilities

64% of respondents agree that they gained a better understanding of the process and requirements for working with utilities (based on a rating of 5 or higher on a 1-7 scale)

Other Program Outcomes:

Access to Investors: Less than a third of responding entrepreneurs (30%) agreed that they were able to network with investors at TRIO events. Additionally, 84% took some type of networking action such as calling someone they met at the event or exchanging business cards at the event.

Bringing technology to market: Since participating in TRIO, 40% of the 47 responding entrepreneurs have brought a technology to market. Over half (55%) of those who brought a technology to market agreed that TRIO was helpful in doing so.

Submitting technology to IOU programs: Of the 50 responding entrepreneurs, 42% submitted a technology to an IOU program. Of those who submitted, 38% (or 8 entrepreneurs) had their technology accepted.

Opinion Dynamics Itron

Overall, TRIO is affecting population of respondents as measured by PPM and intended outcomes

Responses to survey instrument provide measurement of program outcomes.

Result	Respondent	Type	Metric
64%	All attendees (n=69)	PPM	Better understanding of process and requirements for doing business with utilities
30%	Entrepreneurs (n=50)	Outcome	Access to investors (44% exchanged business cards with an investor)
40%	Entrepreneurs (n=50)	Outcome	Technology enters market
42%	Entrepreneurs (n=50)	Outcome	Technology submitted to IOUs

A technology can be brought to the market and submitted to the IOUs. Notably, 14 of the responding entrepreneurs brought a technology to market and submitted to the IOU.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 20

Appendix A

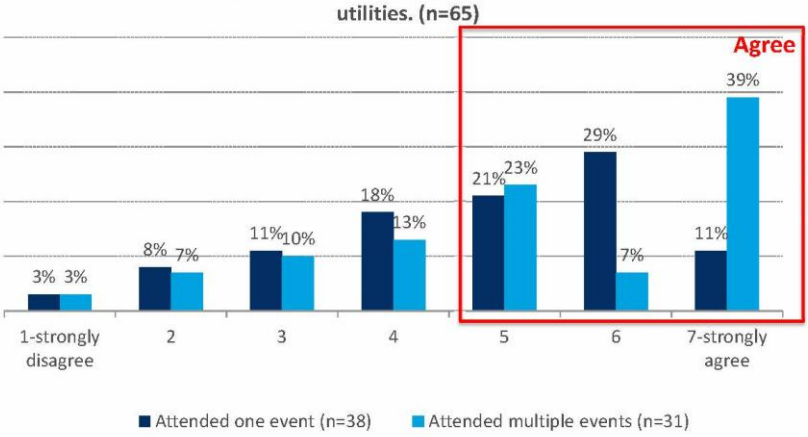
Comparison between Single and Multiple Event Attendees

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 21

We found no significant difference between those who attended one or more events in their responses to the PPM

The information I received from TRIO allowed me to gain a better understanding of the process and requirements for working with utilities. (n=65)



=61% of those who attended one event

=69% of those who attended multiple events

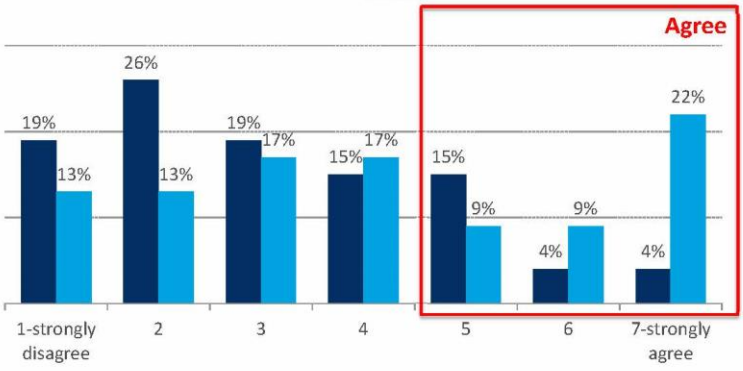
Note: There are no statistically significant differences at 90% two-tailed (t-test) and independent means test between the two groups.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 22

We found significant differences between those who attended one or more events for networking during events

I was able to network with potential investors during the event.



=23% of those who attended one event

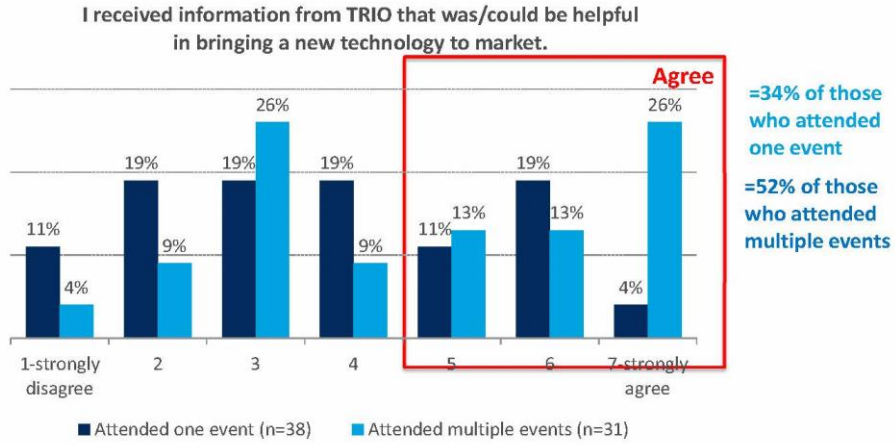
=40% of those who attended multiple events

Note: These results are statistically significant differences at 90% two-tailed (t-test), but not significant for an independent means test between the two groups.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 23

We found significant differences between those who attended one or more events for if information was/could be helpful in bringing a technology to market



=34% of those who attended one event

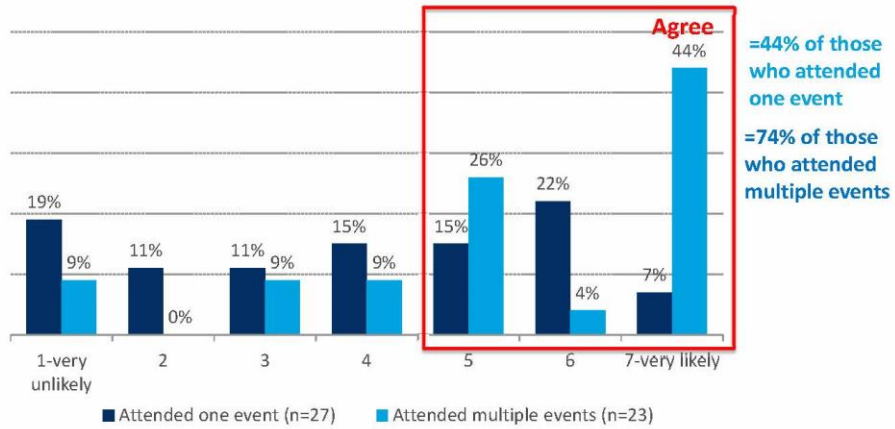
=52% of those who attended multiple events

Note: These results are statistically significant differences at 90% two-tailed (t-test), but not significant for an independent means test between the two groups.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 24

We found significant differences between those who attended one or more events for likelihood to submit technology to ETP



=44% of those who attended one event

=74% of those who attended multiple events

Note: These results are statistically significant differences at 90% two-tailed (t-test), but not significant for an independent means test between the two groups.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 25

Appendix B

Comparison between Symposium Only and Roundtable Attendees

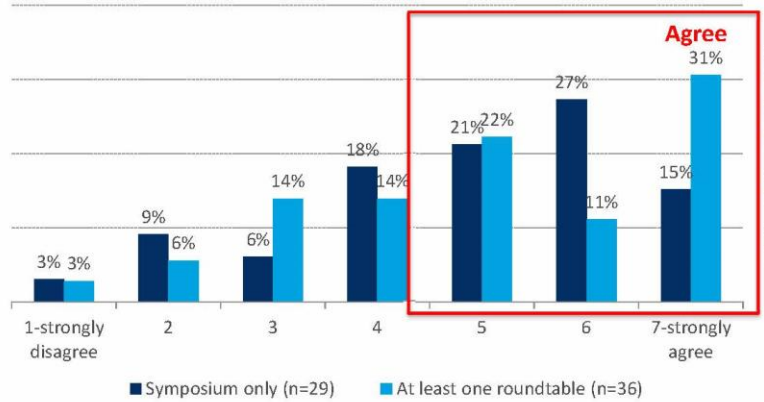
Note: In this Appendix any attendee who attended at least one roundtable is considered a roundtable attendee. We made this choice to determine if roundtables provided incrementally more information than symposiums. A symposium only attendee is someone who did not attend any roundtables.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 26

We found no significant differences between those who only attended the Symposium and those who attended at least one Roundtable for the PPM

The information I received from TRIO allowed me to gain a better understanding of the process and requirements for working with utilities.



=63% of those who attended the Symposium only

=64% of those who attended at least one roundtable

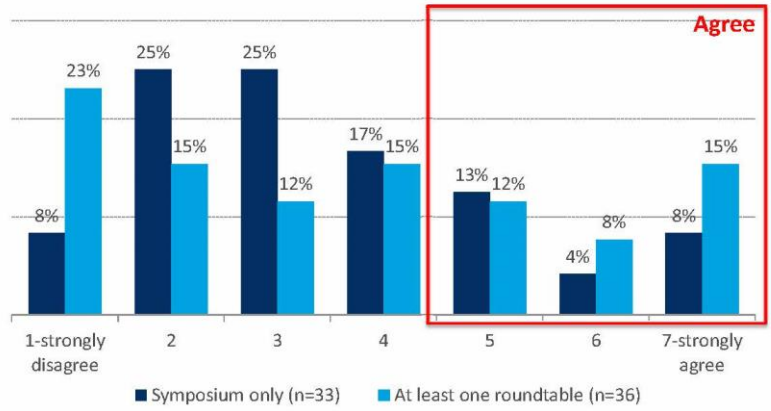
Note: There are no statistically significant differences at 90% two-tailed (t-test) and independent means test between the two groups.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 27

We found no significant differences between symposium-only attendees, and those who attended at least one roundtable for networking during events

I was able to network with potential investors during the event.



=25% of those who attended the symposium only
=35% of those who attended at least one roundtable

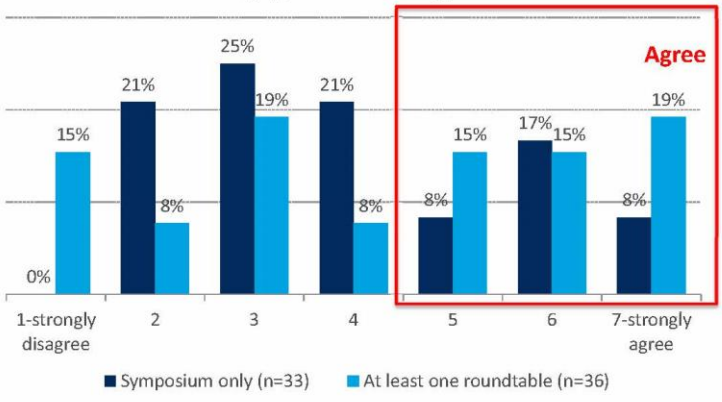
Note: There are no statistically significant differences at 90% two-tailed (t-test) and independent means test between the two groups.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 28

We found no significant differences between symposium-only attendees, and those who attended at least one roundtable for if the information was/could be helpful.

I received information from TRIO that was/could be helpful in bringing a new technology to market.

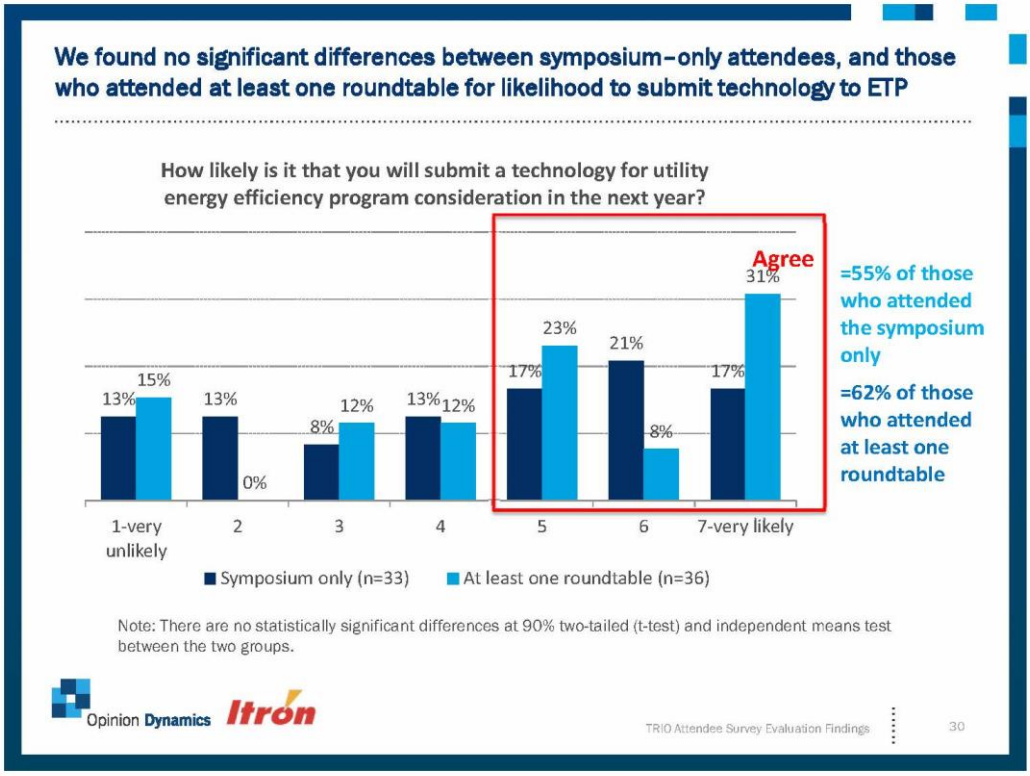


=33% of those who attended the symposium only
=49% of those who attended at least one roundtable

Note: There are no statistically significant differences at 90% two-tailed (t-test) and independent means test between the two groups.

Opinion Dynamics Itron

TRIO Attendee Survey Evaluation Findings 29


We found no significant differences between symposium-only attendees, and those who attended at least one roundtable for likelihood to submit technology to ETP
How likely is it that you will submit a technology for utility energy efficiency program consideration in the next year?
Agree
13%
15%
13%
0%
8%
12%
13%
12%
17%
23%
21%
8%
17%
31%
1-very unlikely
2
3
4
5
6
7-very likely
Symposium only (n=33)
At least one roundtable (n=36)
=55% of those who attended the symposium only
=62% of those who attended at least one roundtable
Note: There are no statistically significant differences at 90% two-tailed (t-test) and independent means test between the two groups.
Opinion Dynamics
Itron
TRIO Attendee Survey Evaluation Findings
30

Appendix D. Topline Survey Results

Below the topline survey results are provided.

D.1 TRIO Topline Results

ETP TRIO
Internet Survey
Fielding Dates: April 25 – May 10, 2013
Total Respondents: 69

This is a web-based survey that will go to a census of TRIO event attendees. We have requested contact information from the IOUs in the form of TRIO event attendee lists. We will send an email invitation to each email address provided through our sample request (DR#201301) that includes a unique URL link to an online survey. We will keep results anonymous.

In general, the survey seeks to assess achievement of the PPM, which is the "percent of attendees who voluntarily respond and self-report increased understanding on how to do business with utilities".[1] In addition, the survey assesses whether the identified performance indicators resulted from attendance at the TRIO events, as well as a reduction in information and search costs.

Email Invitation

The California Public Utilities Commission (CPUC) is directing an evaluation of the Statewide Emerging Technologies Program (ETP). The ETP is a publicly funded program that is implemented by the four investor-owned utilities. The CPUC is interested in learning about your opinions and feedback regarding information you received from the TRIO event(s) you attended. TRIO is a program offered through the ETP which focuses on providing training and networking for entrepreneurs and companies that provide energy saving technologies. We hope you will take a few minutes to let us know about your impressions.

To ensure that your responses are anonymous, a third-party research firm, Opinion Dynamics, is conducting this survey. To confirm Opinion Dynamics is one of CPUC's approved contractors go to www.cpuc.ca.gov/eevalidation.

Please click on the link below to take this short survey:

[INSERT UNIQUE URL TO SURVEY]

Your assistance is critical to this important study, and your participation will help the CPUC better understand the performance of this program. If you have any questions or concerns about this study, please feel free to contact me. Thank you in advance for your assistance.

Sincerely,

Paula Gruendling
Energy Division
California Public Utilities Commission
paula.gruendling@cpuc.ca.gov

Survey Introduction

S1. Did you attend any of the following events?

Response			Percent
PG&E Symposium	9/25/2012	San Francisco, CA	29%
SCE Symposium	6/7/2012	Los Angeles, CA	23%
PG&E Symposium	7/12/2011	San Francisco, CA	23%
PG&E Roundtable	11/7/2012	San Francisco, CA	23%
SCE Symposium	5/12/2011	Irvine, CA	14%
SDG&E Symposium	1/27/2011	La Jolla, CA	14%
SDG&E Roundtable	3/2/2011	La Jolla, CA	12%
PG&E Roundtable	8/30/2011	San Francisco, CA	9%
SCE Roundtable	8/2/2012	Pomona, CA	9%
SCG Roundtable	5/9/2012	Downey, CA	7%
PG&E Symposium	9/12/2010	Berkeley, CA	6%
SCG Symposium	2/28/2012	Downey, CA	4%
SCE Symposium	3/12/2010	Santa Barbara, CA	1%
SCE Roundtable	5/26/2010	Palo Alto, CA	1%
Total			**175%**

Participant Characterization

PC1. Which of the following categories best describes your position?

Response	Percent
Entrepreneur/product developer	72%
Third-party program implementer	20%
Student/Academic	1%
(Other)	6%
Total	**100%**

PC2. In two sentences or less, please describe your professional interest in the TRIO events. In other words, why you were interested in attending the event(s) and how you thought it might be relevant to your job.

Response	Percent
Working with the IOUs in general	61%
Networking	22%
Learning about new technology	12%
Third Party Program	4%
(Other)	16%
Total	**115%**

Entrepreneur/Student Follow-Up

[ASK IF ENTREPRENEUR/PRODUCT DEVELOPER OR STUDENT/ACADEMIC OR OTHER, ELSE SKIP TO PC4, n=59]
PC3a. Are you currently working on developing one or more emerging technologies? Emerging technologies are new energy efficiency technologies, systems, or practices that have significant energy savings potential but have not yet achieved sufficient market share (for a variety of reasons) to be considered self-sustaining or commercially viable.

Response	Percent
Yes	80%
No	20%
Total	**100%**

[ASK IF PC3A IS YES, ELSE SKIP TO PC4, n=47]
PC3b. Which of the following categories do/does the product(s) you are developing fit into?

Response	Percent
Advanced HVAC (CA climate appropriate)	45%
Plug-loads and/or smart appliances	34%
Integrated building design and operations	32%
Advanced lighting	30%
Renewables	6%
Low-carbon emissions/Carbon capture	6%
Electric vehicles	6%
Water industry	4%
Demand Response	4%
Behavior	4%
Energy Storage	4%
Combined heat and power	2%
(Other)	4%
Total	**224%**

PC3c. Which of the following phases of development is/are your product(s) in?

Response	Percent
Assessment and Demonstration – Initial lab demonstration to field demonstration/assessment and validation of performance/usability	51%
Product Development –Fully-functional prototype to initial lab demonstration	40%
Commercialization – Final configuration of the product for volume manufacturing and scale-up for sustainable market penetration. Initial acceptance by early adopters	40%
Research & Development –Applied research and development to proof of concept	38%
Adoption – Commercial product broadly accepted by early adopters and early majority users	15%
(Other)	2%
Total	**186%**

Investor Follow-Up

[ASK IF INVESTOR, ELSE SKIP TO PC7, n=0]
PC4. Are you (or your company) looking to invest in a particular type of emerging technology?

Response	Percent
Yes	-
No	-
Total	-

[ASK IF PC4 IS YES, n=0]
PC4a. What type of emerging technology are you (or your company) looking to invest in?

Response	Percent
Advanced HVAC (CA climate appropriate)	-
Plug-loads and/or smart appliances	-
Advanced lighting	-
Integrated building design and operations	-
(Other)	-
Total	-

PC5. Are you (or your company) looking to invest in an emerging technology that is at a particular phase of development?

Response	Percent
Yes	-
No	-
Total	-

[ASK IF PC5 IS YES, n=0]
PC5a. Which phase(s) of development?

Response	Percent
Research & Development –Applied research and development to proof of concept	-
Product Development –Fully-functional prototype to initial lab demonstration	-
Assessment and Demonstration – Initial lab demonstration to field demonstration/assessment and validation of performance/usability	-
Commercialization – Final configuration of the product for volume manufacturing and scale-up for sustainable market penetration. Initial acceptance by early adopters	-
Adoption – Commercial product broadly accepted by early adopters and early majority users	-
(Other)	-
Total	-

PC6. Since attending TRIO have you (or your company) invested in an emerging technology being developed by someone who you met at a TRIO event?

Response	Percent
Yes	-
No-	-
Total	-

Third Party Implementer Follow-Up

[ASK IF THIRD PARTY PROGRAM IMPLEMENTER, ELSE SKIP TO PC9, n=10]
PC7. Are you currently managing or working on a program that supports bringing emerging technologies to market?

Response	Percent
Yes	80%
No	20%
Total	**100%**

[ASK IF PC7 IS YES, ELSE SKIP TO PC9, n=8]
PC7b. Please briefly describe the program:

Response	Percent
(Other)	100%
Total	**100%**

PC8. Which of the following product categories does your program support?

Response	Percent
Advanced HVAC (CA climate appropriate)	62%
Advanced lighting	62%
Integrated building design and operations	62%
Plug-loads and/or smart appliances	25%
Demand Response	25%
Energy Storage	25%
Behavior	12%
(Other)	12%
Total	**285%**

All Attendees Follow-Up

[SKIP IF STUDENT/ACADEMIC, n=60]
PC9. At the time you attended TRIO were you (developing/invested in/managing a program that supports) an emerging technology?

Response	Percent
Yes	90%
No	10%
Total	**100%**

[ASK IF ENTREPRENEUR/PRODUCT DEVELOPER OR INVESTOR, n=50]
PC10. Since participating in TRIO have you brought a technology to market (i.e. technology is sold and distributed to the target market)?

Response	Percent
Yes	40%
No	60%
Total	**100%**

Marketing

M1. How did you hear about TRIO?

Response	Percent
From a colleague/word of mouth	41%
Emerging Technologies Coordinating Council (ETCC) website	28%
Email from the ETCC	25%
Utility website	19%
At an event, such as the California Cleantech Open or a university competition	12%
Through an IOU contact	7%
Third Party Implementer	3%
(Don't know)	4%
Total	**139%**

Effects

E1a. How much of the information presented at the (first) TRIO event was new to you?

Response	Percent
All of it was new	10%
Most of it was new	36%
Some of it was new	52%
None of it was new	1%
Total	**100%**

[ASK IF ATTENDED MORE THAN ONE EVENT, n=31]
E1b. How much of the information presented at subsequent TRIO events that you attended was new to you?

Response	Percent
All of it was new	-
Most of it was new	23%
Some of it was new	77%
None of it was new	-
Total	**100%**

E2. Please rate the following statements on a scale from 1 to 7, where 1 means 'strongly disagree' and 7 means 'strongly agree'.

a. The information I received from TRIO allowed me to gain a better understanding of the process and requirements for working with utilities.

Response	Percent
1	3%
2	7%
3	10%
4	16%
5	22%
6	19%
7	23%
Total	**100%**
Mean	**5.0**

[ASK IF ENTREPRENEUR/PRODUCT DEVELOPER OR INVESTOR, n=50]
b. I was able to network (with potential investors/with entrepreneurs) during the event.

Response	Percent
1	16%
2	20%
3	18%
4	16%
5	12%
6	6%
7	12%
Total	**100%**
Mean	**3.5**

[ASK IF ENTREPRENEUR/PRODUCT DEVELOPER OR INVESTOR, n=50]
c. I received information from TRIO that (could be/was) helpful in bringing a new technology to market (i.e. technology is sold and distributed to the target market).

Response	Percent
1	8%
2	14%
3	22%
4	14%
5	12%
6	16%
7	14%
Total	**100%**
Mean	**4.1**

[ASK IF E2a IS GREATER THAN 4, n=44]
E2aa. What information in particular helped you gain a better understanding of how to work with utilities?

Response	Percent
Process of working with IOUs in general	43%
Networking	23%
How savings are evaluated	16%
Too difficult/cumbersome to work with IOUs	14%
Program offerings	11%
(Other)	23%
Total	**130%**

E2ab. What information, if any, was not covered in the event that would have been helpful to you?

Response	Percent
Process of participating	24%
Specific to IOU technology interests	15%
Contacts at IOU	13%
Funding opportunities	12%
Case studies	6%
(None)	19%
(Other)	10%
(Don't know)	10%
Total	**109%**

[IF NOT AN ENTREPRENEUR/PRODUCT DEVELOPER OR INVESTOR, SKIP TO CLOSING, n=50]

[ASK IF ENTREPRENEUR/PRODUCT DEVELOPER, n=50]
E3b. Which of the following have you done since attending a TRIO event?

Response	Percent
Sent an email to someone I met at a TRIO event.	62%
Viewed the website of someone I met at a TRIO event.	58%
Placed a phone call to someone I met at a TRIO event.	54%
Exchanged business cards with at least one potential investor at a TRIO event.	44%
Established a business relationship with someone I met at a TRIO event.	36%
(None of the above)	16%
Total	**270%**

E4a. Since attending the TRIO event, have you submitted a technology for consideration in a utility energy efficiency program?

Response	Percent
Yes	42%
No	58%
Total	**100%**

[ASK IF E4a IS YES, n=21]
E4b.Where did you submit a technology for consideration?

Response	Percent
Emerging Technology Programs	62%
Utility Energy Efficiency Programs	52%
Third-Party Programs	24%
(Other)	10%
Total	**148%**

[ASK IF E4a IS YES, n=21]
E4c. What technology did you submit?

Response	Percent
Advanced HVAC (CA climate appropriate)	33%
Integrated building design and operations	19%
Plug loads and/or smart appliances	19%
Behavior	19%
Demand Response	14%
Advanced lighting	10%
Water Industry	5%
Energy Storage	5%
(Other)	10%
Total	**134%**

[ASK IF E4a IS YES, n=21]
E4d. Was the technology accepted?

Response	Percent
Yes	38%
No	14%
(Don't know)	48%
Total	**100%**

[ASK IF E4a IS YES, n=21]
E4e. Did the utility provide feedback on the technology, such as an explanation of why it did or did not meet the utility's needs and objectives?

Response	Percent
Yes	43%
No	57%
Total	**100%**

E5a. On a scale of 1-7, where 1 is 'very unlikely' and 7 is 'very likely', how likely is it that you will submit (a/another) technology for utility energy efficiency program consideration in the next year?

Response	Percent
1	14%
2	6%
3	10%
4	12%
5	20%
6	14%
7	24%
Mean	**4.6**
Total	**100%**

E5b. Why do you say that?

Response	Percent
Technology is in the development/testing stage	22%
It will help my product get in with utilities/to market	20%
Technology is ready/we are ready	12%
Utility processes take too long/cumbersome	12%
Don't have a technology	10%
Issue with TRIO/IOU	10%
No follow-up from TRIO/IOU staff after event	4%
(Other)	10%
(Don't know)	4%
(Refused)	2%
Total	**106%**

D.2 Investor-owned utility Energy Efficiency and ETP Staff Topline

ETP Phase II Energy Efficiency Program Manager Internet Survey
Fielding Dates:
Total Respondents:

This is a web-based survey that will go to 48[1] internal IOU staff that received information regarding ETP projects completed within the 2010-2012 program cycle. The goal of the survey is to understand EE Program Manager awareness of ETP program information that is disseminated to them, as well as the effectiveness of the information in helping them to understand new technologies and allowing them to adopt or reject a new technology for their program. We will send an email invitation to each email address in the sample that includes a unique URL link to an online survey. We will keep results anonymous.

Email Invitation

The California Public Utilities Commission (CPUC) is directing an evaluation of the Statewide Emerging Technologies Program (ETP). The ETP is a publicly funded program that is implemented by the four investor-owned utilities (PG&E, SCE, SCG and SDG&E). You may have received reports or information from the ETP about new technologies, practices, or solutions that could apply to your energy efficiency program. You also may have received reports from the ETP about market potential or customer behaviors around specific technologies. The CPUC is interested in learning about your opinions and feedback regarding the reports you received. We hope you will take a few minutes to let us know about your impressions.

To ensure that your responses are anonymous, a third-party research firm, Opinion Dynamics, is conducting this survey. To confirm Opinion Dynamics is one of CPUC's approved contractors go to www.cpuc.ca.gov/eevalidation.

Please click on the link below to take this short survey:

[INSERT UNIQUE URL TO SURVEY]

Your assistance is critical to this important study, and your participation will help the CPUC better understand the performance of this program. If you have any questions or concerns about this study, please feel free to contact me. Thank you in advance for your assistance.

Sincerely,

Paula Gruendling
Energy Division
California Public Utilities Commission
paula.gruendling@cpuc.ca.gov

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[1] We received contact information from the IOUs for this survey effort. We have a total population of 48 survey recipients, 28 from PG&E, 11 from SCE, 7 from SCG and 2 from SDG&E. Of the 48 recipients, 27 were also contacted in our Phase I study.

Background Information

BI1. What it your job title?

Response	Percent
Program/product manager or supervisor	60%
Engineer/engineering manager	20%
Program/product advisor or team member	10%
(Other)	10%
Total	**100%**

BI2. What energy efficiency programs are you working on?

Response	Percent
Commercial (general/unspecified)	30%
Codes and standards/state-wide implementations	30%
Residential (general/unspecified)	20%
Industrial (general/unspecified)	20%
New/emerging technologies	20%
Agricultural (general/unspecified)	15%
Home audits/energy advisor	15%
New construction	10%
Workforce, education & training	10%
Food service	10%
Whole house	10%
(Other)	15%
Total	**205%**

BI3. What sector(s) do you typically work with?

Response	Percent
Commercial	75%
Residential	65%
Industrial	50%
Agricultural	30%
Other	5%
Total	**225%**

BI4. What technology end use areas do you typically work with?

Response	Percent
HVAC	65%
Lighting	55%
Thermostats	55%
Energy Management System and Diagnostics	45%
Refrigeration	45%
Zero Net Energy (ZNE)	45%
Building Envelope	40%
Domestic Hot Water	40%
Software for Rating Building or Managing Energy	40%
Variable Speed / Frequency Drives	30%
Cooking Equipment	25%
Combustion	15%
Heat Recovery	15%
Consumer appliance/electronics (general)	10%
Steam Trap	5%
Other	5%
Total	**535%**

ETP Awareness

[SKIP TO R1 IF ETPSTAFF = 1, n=18]
EA1. On a scale from 1 to 7, where 1 is very unfamiliar and 7 is very familiar, how familiar are you with the Emerging Technologies Program?

Response	Percent
1 – Not at all familiar	-
2	-
3	6%
4	6%
5	11%
6	33%
7 – Very familiar	44%
Mean	**6.06**
Total	**100%**

EA2. Have you ever had any direct contact with Emerging Technologies Program staff from within your utility about the Emerging Technologies Program projects?

Response	Percent
Yes	100%
No	-
Total	**100%**

Information Received

R1. Within the past three years, the ETP has completed projects in the following technology areas. Which of the following technology areas have you received information about?

Response	Percent
HVAC	55%
Lighting	45%
Energy Management System and Diagnostics	40%
Market Study	30%
Cooking Equipment	25%
Domestic Hot Water	25%
Zero Net Energy (ZNE)	25%
Building Envelope	20%
Refrigeration	15%
Software for Rating Building or Managing Energy	15%
Thermostats	15%
Variable Speed / Frequency Drives	10%
Combustion	5%
Heat Recovery	5%
Other	5%
Total	**335%**

[ASK IF R1 DOES NOT EQUAL "Other", n=19]
R2. You mentioned that you received information about (READ IN R1). Which of the following project information did you receive?

[IF UTILITY = PG&E & TECHNOLOGY TYPE = BUILDING ENVELOPE (R1 = 1) n=2]

Project #	Element	Project Name	Percent Yes	Percent No
ET11PGE1041	TA	Advanced Window Films TA 1	100%	-

[IF UTILITY = PG&E & TECHNOLOGY TYPE = COOKING EQUIPMENT (R1 = 3) n=2]

ET12PGE2201	DS	Food Service Technology Demo Kitchen	50%	50%

[IF UTILITY = PG&E & TECHNOLOGY TYPE = DOMESTIC HOT WATER (R1 = 4) n=1]

Project #	Element	Project Name	Percent Yes	Percent No
ET10PGE1001	TA	Heat Pump Water Heaters (HPWH) Field Study	100%	-
ET12PGE3191	SFP	Water Heaters Alt. Technologies (Phase A)	100%	-

[IF UTILITY = PG&E & TECHNOLOGY TYPE = ENERGY MANAGEMENT SYSTEMS AND DIAGNOSTICS (R1 = 5) n=5]

ET12PGE1311	TA	EMIS Baselining Performance Criteria (Phase A)	80%	20%
ET11PGE4221	MBS	M&BS Building Stock Study	80%	20%
ET11PGE1141	MBS	EMS Data Translation (Pneumatic to Wireless)	40%	60%
ET11PGE4211	MBS	M&BS EMS Systems	60%	40%

[IF UTILITY = PG&E & TECHNOLOGY TYPE = HVAC (R1 = 7) n=3]

ET12PGE1111	TA	Packaged HVAC Advanced Controls and Sensors Technical Assessment	67%	33%
ET12PGE3181	SFP	Comprehensive HVAC RTU for SMB	67%	33%
ET11PGE1109	MBS	HVAC Quality Maintenance Standards Implementation Behavioral Study	67%	33%
ET11PGE1082	TA	Advance Radiant HVAC System Field Test	33%	67%
ET11PGE1081	TA	Advance Radiant HVAC System Lab Test	33%	67%

[IF UTILITY = PG&E & TECHNOLOGY TYPE = LIGHTING (R1 = 8) n=5]

ET12PGE3301	SFP	PAR/MR LED Pilot	40%	60%
ET12PGE3351	SFP	Safeway - Advanced LED Track Fixtures	60%	40%
ET12PGE1011	TA	Assessment of Directional LEDs	60%	40%
ET12PGE3171	SFP	Plasma Exterior (Phase A)	40%	60%
ET11PGE3181	SFP	Follow Up Linear Panel and Controls Study (GSA)	20%	80%
ET12PGE1261	TA	Xenon Technical Assessment Phase 1	40%	60%
ET11PGE2201	DS	CLTC Lighting Demonstration Project	80%	20%
ET12PGE2231	DS	ETC Lighting Demo Showcase	40%	60%
ET12PGE2291	DS	PEC Lighting Demo Showcase	40%	60%
ET11PGE1101	MBS	Lighting MSB Conjoint Study	20%	80%
ET11PGE4081	MBS	Home Energy Management Insight Behavioral Research Smart Homes	20%	80%

[IF UTILITY = PG&E & TECHNOLOGY TYPE = REFRIGERATION (R1 = 9) n=2]

ET12PGE3151	SFP	Food Service Tech Load Shifting Ice Machines (Phase A)	-	100%
ET12PGE3152	SFP	Food Service Tech Load Shifting Ice Machines (Phase B)	-	100%

[IF UTILITY = PG&E & TECHNOLOGY TYPE = SOFTWARE FOR RATING BUILDINGS AND ENERGY MANAGEMENT (R1 = 10) n=3]

Project #	Element	Project Name	Percent Yes	Percent No
ET12PGE1021	TA	CEC Building Rating Tools Assessment	33%	67%
ET11PGE1051	TA	Data Center Infrastructure Management	33%	67%
ET11PGE3161	SFP	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase A)	67%	33%
ET10PGE1031	TA	Carbon and Energy Management Systems	33%	67%
ET11PGE3131	SFP	EMS Fault Detection Diagnostics	33%	67%
ET11PGE3191	MBS	Continental Automatic Building Association (CABA) Research Project	-	100%
ET12PGE3341	SFP	First Fuel SFP	67%	33%
ET11PGE3162	SFP	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase B)	67%	33%

[IF UTILITY = PG&E & TECHNOLOGY TYPE = THERMOSTAT (R1 = 12) n=3]

ET12PGE1141	TA	Optimization/Learning Thermostat Assessment Phase 1	67%	33%
ET11PGE3073	SFP	Home Energy Management Scaled Field Placement (Phase A) Smart Thermostats	67%	33%
ET11PGE3171	SFP	EMS Wireless Pneumatic Thermostat (Phase A)	67%	33%
ET11PGE1071	TA	ET Home Energy Management Lab Tech Assessment Smart Thermostats	67%	33%
ET11PGE1072	TA	ET Home Energy Management Field Tech Assessment Smart Thermostats	67%	33%

[IF UTILITY = PG&E & TECHNOLOGY TYPE = ZNE (R1 = 14) n=3]

ET12PGE2221	DS	ZNE Demonstration Home	67%	33%
ET12PGE2211	DS	ZNE Modular Classroom	67%	33%

[IF UTILITY = PG&E & TECHNOLOGY TYPE = MARKET STUDY (R1 = 15) n=6]

ET11PGE3241	MBS	EPRI Early Deployment Efficiency End User Technologies	33%	67%

[IF UTILITY = SCE & TECHNOLOGY TYPE = COOKING EQUIPMENT (R1 = 3) n=2]

Project #	Element	Project Name	Percent Yes	Percent No
ET10SCE1310	TA	Hot Food Holding Cabinets for Foodservice	50%	50%
ET10SCE1410	TA	High Density Holding Cabinets for Food Service	50%	50%
ET10SCE1430	TA	Dry Well for Food Service	50%	50%
ET10SCE1330	TA	Combination Ovens for Food Service	100%	-
ET10SCE1340	TA	Pizza Conveyor Ovens for Foodservice Applications	100%	-
ET10SCE1390	TA	Steamers for Food Service Applications	50%	50%
ET10SCE1400	TA	Taco Tower for Food Service Applications	100%	-
ET10SCE1440	TA	Steamer/Kettle for Food Service Applications	50%	50%
ET10SCE1320	TA	Pressure Fryers for Foodservice Applications	50%	50%
ET11SCE1140	TA	Hot Food Induction Holding Well	50%	50%
ET12SCE1040	TA	Cheese Melter For Food Service	-	100%
ET12SCE1080	TA	Conveyor Broilers for Foodservice Applications	-	100%

[IF UTILITY = SCE & TECHNOLOGY TYPE = ENERGY MANAGEMENT SYSTEMS AND DIAGNOSTICS (R1 = 5) n=1]

ET12SCE2010	DS	Impact of Smart Grid on Connected Homes	100%	-
ET11SCE4070	MBS	Future Outlook for Residential Energy Management	-	100%

[IF UTILITY = SCE & TECHNOLOGY TYPE = HVAC (R1 = 7) n=3]

ET10SCE1240	TA	Frontier Project	-	100%
ET11SCE1130	TA	Evaporator Fan Delay Control	67%	33%
ET10SCE1110	TA	VRF for Lodging Application	33%	67%
ET11SCE1190	TA	HVAC Electrostatic Filter	-	100%
ET11SCE4040	MBS	HVAC Technology Roadmap	67%	33%
ET10SCE1030	TA	Liquid Desiccant AC for Grocery Stores	-	100%
ET11SCE1030	TA	Hospitality VRF Evaluation	33%	67%

[IF UTILITY = SCE & TECHNOLOGY TYPE = LIGHTING (R1 = 8) n=3]

Project #	Element	Project Name	Percent Yes	Percent No
ET10SCE1250	TA	Smart Corridor Bi-Level Lighting for Office Applications	67%	33%
ET10SCE1220	TA	L Prize A-Lamp for Hospitality Applications	33%	67%
ET10SCE1230	TA	L Prize A-Lamp Laboratory Assessment	100%	-
ET10SCE1130	TA	LED Light for Commercial Pools	33%	67%
ET10SCE1290	TA	LED A-Lamp Laboratory Assessment	33%	67%
ET11SCE3020	SFP	LED Down Light	33%	67%
ET11SCE4050	MBS	Pool Light Residential Usage Survey	-	100%
ET10SCE1160	TA	Blower for Industrial Applications	33%	67%
ET11SCE1010	TA	Backlit Signs and Menu Boards Lab Evaluation	33%	67%
ET11SCE1011	TA	Backlit Signs and Menu Boards Field Evaluation	67%	33%
ET11SCE1050	TA	Commercial Tubular Daylighting System	67%	33%
ET11SCE1240	TA	Small Commercial LED Lighting and Controls	33%	67%
ET12SCE4020	MBS	Advanced Lighting Controls Training Program - Needs Assessment	-	100%
ET10SCE1190	TA	LED Recessed Luminaire	-	100%
ET10SCE1300	TA	LED Menu Board Lighting Laboratory Assessment	33%	67%
ET11SCE1180	TA	Microwave Controlled Advanced Street Lighting Evaluation	-	100%
ET11SCE1220	TA	LED Lighting for Cold Cases	67%	33%
ET11SCE1221	TA	Exterior LED Lights with Occupancy Sensors	33%	67%
ET12SCE1940	TA	Cutting Edge Auto Showroom & Exterior Lighting	33%	67%
ET12SCE1950	TA	Applied Advanced 220/110kV Substation Lighting	33%	67%
ET12SCE1970	TA	Quick Assessment: Golf Club Clubhouse and Parking Advanced Lighting	33%	67%
ET12SCE1980	TA	Quick Assessment: Relight Himast Port of LA & LB with Advanced Lighting	33%	67%

[IF UTILITY = SCE & TECHNOLOGY TYPE = VARIABLE SPEED / FREQUENCY DRIVES (R1 = 13) n=2]

Project #	Element	Project Name	Percent Yes	Percent No
ET10SCE1070	TA	VSD for Die Casters	-	100%
ET10SCE1050	TA	VSD Evaporative Fan Control for Walk-in Coolers	50%	50%

[IF UTILITY = SCE & TECHNOLOGY TYPE = ZNE (R1 = 14) n=1]

ET10SCE2020	DS	ZNE Home Retrofit	100%	-
ET10SCE2040	DS	ZNE New Home RFQ	-	100%
ET11SCE2020	DS	ZNE Big-box Retail	-	100%
ET11SCE2050	DS	ZNE Residential Load Impact Forecast	-	100%
ET10SCE4020	MBS	ZNE Technical Potential	100%	-

[IF UTILITY = SCE & TECHNOLOGY TYPE = MARKET STUDY (R1 = 15) n=2]

ET10SCE4010	MBS	Air Blower Market Assessment	50%	50%
ET11SCE4010	MBS	Market Intelligence Gathering Process Evaluation	-	100%
ET11SCE4030	MBS	Consumer Behavior Change via Online Integrated Demand-Side Management Leveraging Casual Social Games	50%	50%
ET12SCE4010	MBS	West Coast Medium Commercial Market Assessment	-	100%
ET11SCE1260	TA	Phase Change Material Paper Study	100%	-

[IF UTILITY = SCG & TECHNOLOGY TYPE = COMBUSTION (R1 = 2) n=1]

ET10SCG0011	TA	ECO System Fuel Enhancer Evaluation	-	100%

[IF UTILITY = SCG & TECHNOLOGY TYPE = DOMESTIC HOT WATER (R1 = 4) n=4]

ET10SCG0003	TA	Field Study of Masco Study / Res Recirc Pump	25%	75%
ET12SCG0004	TA	Raypak DHW Boiler Reset Controller	50%	50%
ET10SCG0021	TA	Solar Water Heating Systems	25%	75%
ET10SCG0015	MBS	Test LoNox Water Heater (MBS)	-	100%
ET10SCG0019	TA	Viability of Combo System - GTI - SCG	75%	25%

[IF UTILITY = SCG & TECHNOLOGY TYPE = HEAT RECOVERY (R1 = 6) n=1]

ET11SCG0001	TA	Thermal Recycler	100%	-

[IF UTILITY = SCG & TECHNOLOGY TYPE = HVAC (R1 = 7) n=4]

ET10SCG0013	TA	Thermodynamic Process Control (TA)	25%	75%

[IF UTILITY = SDGE & TECHNOLOGY TYPE = HVAC (R1 = 7) n=1]

ET11SDGE0018	TA	Lab Fume Hood ASPS	-	100%

[IF UTILITY = SDGE & TECHNOLOGY TYPE = LIGHTING (R1 = 8) n=1]

Project #	Element	Project Name	Percent Yes	Percent No
ET11SDGE0001	DS	Energy Innovation Center	100%	-
ET11SDGE0003	DS	San Diego Zoo Gift Shop LED Lighting	100%	-
ET11SDGE0004	DS	Restaurant Ambient Lighting Demo Showcase	100%	-
ET11SDGE0005	DS	LED Theater Stage Lighting	100%	-
ET11SDGE0006	DS	Bi-Level LED Parking Structure	100%	-
ET11SDGE0008	TA	LED Pathway Bollard	-	100%
ET11SDGE0009	TA	SDSU Central Plant Electronic HID Lighting	-	100%
ET11SDGE0010	TA	Sports Arena Electronic HID Lighting	-	100%
ET11SDGE0011	TA	Bi-Level LED Elevator Cab Lighting	-	100%
ET11SDGE0012	DS	PUSD Electronic HID Lighting	-	100%
ET10SDGE0002	DS	High Ceiling Lighting Options	-	100%
ET10SDGE0007	TA	LED Task Light	100%	-

[IF UTILITY = SDGE & TECHNOLOGY TYPE = REFRIGERATION (R1 = 9) n=1]

ET11SDGE0013	TA	Adap. Fridge and Freezer Cntrl for Comm. App	-	100%

Project Specifics

[ASK IF R1=OTHER]

R2aa. You said that you received reports on another type of technology. Do you recall what type of information you received from the Emerging Technologies Program?

Response	First N=0	Second N=1	Third N=2
Other	-	100%	100%
Total	-	**100%**	**100%**

R2a. Although you did not select any specific reports from the list above, do you recall receiving information from the Emerging Technologies Program?

Response	First N=2
Yes	50%
No	50%
Total	**100%**

[SKIP TO END IF EA2 IS NO, SKIP TO R9 IF EA2 IS YES or ETPSTAFF]
[ASK IF R2a=1]
R2b. What type of information did you receive?

Response	First N=1
Information related to industrial and agricultural technologies	100%
Total	**100%**

R3. How did you receive the information? Was it ... [MULTIPLE RESPONSE]

Response	First N=18	Second N=16	Third N=13
As a report	61%	56%	85%
Via discussion with ETP staff	50%	50%	46%
In an email	33%	25%	31%
As a memo	11%	6%	-
Meeting/discussion (general – not ETP specific)	11%	6%	8%
Other	-	12%	8%
Total	**166%**	**155%**	**178%**

R4. Did you share information regarding the technology with anyone on your staff or within your company?

Response	First N=18	Second N=16	Third N=13
Yes	78%	75%	77%
No	22%	25%	23%
Total	**100%**	**100%**	**100%**

[ASK IF R4 IS NO]
R4a. Why not?

Response	First N=4	Second N=4	Third N=3
Staff was already informed/informed at the same time	50%	50%	67%
Not applicable to my staff/company	25%	-	-
Do not have a staff	25%	25%	33%
(Other)	-	25%	-
Total	**100%**	**100%**	**100%**

R5. Please think about the information you received regarding the **[PROJECT NAME FROM R2]** project while you answer the following questions. Please rate the following statements on a scale from 1 to 7, with 1 meaning strongly disagree and 7 meaning strongly agree.

For the **[PROJECT NAME FROM R2]** project,
As a result of the information I received from the Emerging Technologies Program or discussions with program staff:

a. I am more certain of the performance (or lack of performance) of the technology for this project.

Response	First N=18	Second N=16	Third N=13
1 – Strongly disagree	-	6%	-
2	-	-	-
3	11	-	-
4	28	25%	15%
5	22	25%	23%
6	17	12%	23%
7 – Strongly agree	22	31%	38%
Mean	**5.11**	**5.25**	**5.85**
Total	**100%**	**100%**	**100%**

[ASK IF SFP/DS PROJECT]
b. My knowledge of this type of technology has increased

Response	First N=6	Second N=7	Third N=4
1 – Strongly disagree	-	-	-
2	-	-	-
3	-	-	-
4	-	14%	-
5	33%	43%	50%
6	17%	-	25%
7 – Strongly agree	50%	43%	25%
Mean	**6.17**	**5.71**	**5.75**
Total	**100%**	**100%**	**100%**

c. It is easier to find information about this type of technology for this project than it was before.

Response	First N=18	Second N=16	Third N=13
1 – Strongly disagree	-	6%	-
2	-	-	-
3	11%	-	-
4	22%	31%	23%
5	28%	31%	15%
6	17%	6%	23%
7 – Strongly agree	22%	25%	38%
Mean	**5.17**	**5.00**	**5.77**
Total	**100%**	**100%**	**100%**

d. It is easier to evaluate claims made in the marketplace about this technology than it was before.

Response	First N=18	Second N=16	Third N=13
1 – Strongly disagree	-	6%	-
2	-	-	-
3	17%	-	-
4	22%	25%	15%
5	17%	31%	23%
6	22%	12%	23%
7 – Strongly agree	22%	25%	38%
Mean	**5.11**	**5.12**	**5.85**
Total	**100%**	**100%**	**100%**

For the **[PROJECT NAME FROM R2]** project,
As a result of the information I received from the Emerging Technologies Program or discussions with program staff:

e. I can more easily make the case for including or not including this technology in my program.

Response	First N=18	Second N=16	Third N=13
1 – Strongly disagree	-	6%	-
2	-	-	-
3	11%	-	-
4	17%	38%	8%
5	28%	25%	31%
6	28%	12%	31%
7 – Strongly agree	17%	19%	31%
Mean	**5.22**	**4.88**	**5.85**
Total	**100%**	**100%**	**100%**

f. My understanding of the SHORT-term costs associated with this technology has increased.

Response	First N=18	Second N=16	Third N=13
1 – Strongly disagree	-	6%	-
2	-	-	-
3	6%	-	-
4	22%	31%	23%
5	44%	31%	23%
6	17%	19%	31%
7 – Strongly agree	11%	12%	23%
Mean	**5.06**	**4.88**	**5.54**
Total	**100%**	**100%**	**100%**

g. My understanding of the LONG-term costs associated with this technology has increased.

Response	First N=18	Second N=16	Third N=13
1 – Strongly disagree	-	6%	-
2	-	-	-
3	6%	-	-
4	39%	44%	31%
5	33%	25%	31%
6	11%	12%	23%
7 – Strongly agree	11%	12%	15%
Mean	**4.83**	**4.69**	**5.23**
Total	**100%**	**100%**	**100%**

[ASK IF DS PROJECT]

L. My understanding of customer acceptance of the specific energy efficient technologies described in the report has increased.

Response	First N=4	Second N=3	Third N=1
1 – Strongly disagree	-	-	-
2	-	-	-
3	-	-	-
4	25%	33%	100%
5	25%	33%	-
6	-	-	-
7 – Strongly agree	50%	33%	-
Mean	**5.75**	**5.33**	**4.00**
Total	**100%**	**100%**	**100%**

Now please review the following statements about the information you received about **[PROJECT NAME FROM R2]** project and rate your level of agreement on a scale of 1 to 7 where 1 means strongly disagree and 7 means strongly agree.

j. The information I received is relevant to my target market.

Response	First N=18	Second N=16	Third N=13
1 – Strongly disagree	-	6%	-
2	6%	-	-
3	-	-	-
4	11%	6%	8%
5	39%	38%	31%
6	11%	19%	23%
7 – Strongly agree	33%	31%	38%
Mean	**5.50**	**5.50**	**5.92**
Total	**100%**	**100%**	**100%**

k. The information I received is relevant to the end-use areas in my program.

Response	First N=18	Second N=16	Third N=13
1 – Strongly disagree	-	6%	-
2	6%	-	-
3	-	-	-
4	6%	6%	8%
5	33%	38%	31%
6	17%	12%	15%
7 – Strongly agree	39%	38%	46%
Mean	**5.72**	**5.56**	**6.00**
Total	**100%**	**100%**	**100%**

[ASK IF SFP PROJECT]

h. The information I received would be helpful in the development of marketing campaigns if the technology were to be adopted into the portfolio.

Response	First N=2	Second N=4	Third N=3
1 – Strongly disagree	-	-	-
2	-	-	-
3	-	-	-
4	-	25%	33%
5	50%	50%	33%
6	-	-	-
7 – Strongly agree	50%	25%	33%
Mean	**6.00**	**5.25**	**5.33**
Total	**100%**	**100%**	**100%**

[ASK IF MBS PROJECT]

m. The information I received increased my understanding of the target market for the energy efficient technology described in the report.

Response	First N=7	Second N=0	Third N=1
1 – Strongly disagree	-	-	-
2	-	-	-
3	-	-	-
4	14%	-	100%
5	43%	-	-
6	14%	-	-
7 – Strongly agree	29%	-	-
Mean	**5.57**	**-**	**4.00**
Total	**100%**	**-**	**100%**

[ASK IF MBS PROJECT]
n. The information I received increased my understanding of the level of customer acceptance of the energy efficient technology described in the report.

Response	First N=7	Second N=	Third N=1
1 – Strongly disagree	-	-	-
2	-	-	-
3	-	-	-
4	14%	-	100%
5	57%	-	-
6	14%	-	-
7 – Strongly agree	14%	-	-
Mean	**5.29**	**-**	**4.00**
Total	**100%**	**-**	**100%**

For the **[PROJECT NAME FROM R2]** project,
R6. Have you made a decision about whether to adopt or reject this technology in your energy efficiency portfolio?

Response	First N=18	Second N=16	Third N=13
Yes, I have made a decision	50%	38%	46%
No, I have not made a decision yet	39%	44%	46%
Not my job responsibility/other person or team makes decision	11%	12%	8%
Other	-	6%	-
Total	**100%**	**100%**	**100%**

[ASK IF R6 IS NO, ELSE SKIP TO R7]
R6a. Do you plan to use the information you received on the **[PROJECT NAME FROM R2]** project in your decision-making process?

Response	First N=8	Second N=7	Third N=6
Yes	75%	86%	100%
No	-	-	-
Don't know	25%	14%	-
Total	**100%**	**100%**	**100%**

[ASK IF R6 IS YES]
For the **[PROJECT NAME FROM R2]** project,
R7. Did you receive information from the ETP about the technology for this project:

Response	First N=7	Second N=7	Third N=6
Before you made a decision to adopt or reject the technology	71%	57%	50%
After you made a decision to adopt or reject the technology	29%	43%	50%
Total	**100%**	**100%**	**100%**

[ASK IF R7 IS BEFORE DECISION]
For the **[PROJECT NAME FROM R2]** project,
R8. On a scale from 1 to 7, with 1 meaning "not at all influential" and 7 meaning "very influential," how influential was the information you received from the report in your decision to adopt or reject the new energy efficient technology?

Response	First N=5	Second N=4	Third N=3
1 – Not at all influential	-	-	-
2	-	-	-
3	-	-	-
4	20%	-	-
5	40%	50%	33%
6	20%	25%	33%
7 – Very influential	20%	25%	33%
Mean	**5.40**	**5.75**	**6.00**
Total	**100%**	**100%**	**100%**

For the **[PROJECT NAME FROM R2]** project,
R9. What did you learn about the technology from the ETP information you received?

Response	First N=20	Second N=16	Third N=13
Overview of the technology/benefits/what's available	40%	25%	23%
Customer insights/opinions or case studies	30%	19%	23%
Efficiency information/how much can be saved	25%	25%	8%
Feasibility/areas of potential issue or risk	20%	25%	31%
Market insights/opinions	20%	6%	23%
Overcoming barriers	10%	19%	15%
(Other)	5%	6%	8%
(Nothing)	-	12%	-
(Don't know/no comment)	15%	19%	15%
Total	**165%**	**156%**	**146%**

D.3 DEMONSTRATION SHOWCASE: FSTC TOPLINE

ETP Demonstration Showcase
Food Service Technology Demo Kitchen
Internet Survey
Fielding Dates: June 3 – June 12, 2013
Total Respondents: 11

Opinion Dynamics will field this internet survey to attendees of the ET12PGE2201- Food Service Technology Demo Kitchen Showcase project. We will attempt a census of the 60 attendees who attended showcases at Vic's All Star Kitchen, Comal, or Bridges restaurants and for whom we have email addresses.[1] *The objective of these surveys are to support the Phase II evaluation by assessing the program performance metric of* "a self-reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS." *In addition, the survey will assess any changes in awareness and knowledge of technology, reduction in market barriers and project influence on peers and practices. We will send an email invitation to each email address that includes a unique URL link to an online survey. The survey will be conducted in May. All data will remain in confidence with Opinion Dynamics and Itron although anonymous quotes may be used in reporting.*

Email Invitation

The California Public Utilities Commission (CPUC) is interested in learning about your opinions and feedback regarding information you received from the Restaurant Showcase Event(s) you attended at [INSERT RESTAURANT AND DATE OF EVENT], which demonstrated various energy-saving kitchen features. The California Public Utilities Commission (CPUC) is directing an evaluation of the Statewide Emerging Technologies Program (ETP), which tests and demonstrates new energy efficient technologies in California. The ETP is a statewide, publicly funded program, and the restaurant showcase events were developed by Pacific Gas & Electric. We hope you will take a few minutes to provide us your feedback.

To ensure that your responses are anonymous, a third-party research firm, Opinion Dynamics, is conducting this survey. To confirm Opinion Dynamics is one of CPUC's approved contractors go to www.cpuc.ca.gov/eevalidation.

Please click on the link below to take this short survey:

[INSERT UNIQUE URL TO SURVEY]

Your assistance is critical to this important study, and your participation will help the CPUC better understand the performance of this program. If you have any questions or concerns about this study, please feel free to contact me. Thank you in advance for your assistance.

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[1] There were 99 guests across the three kitchen demos held at restaurants. Of these there were 68 email addresses but 60 unique attendees with 58 unique email addresses. 2 attendees had the same email address.

Sincerely,

Paula Gruendling
Energy Division
California Public Utilities Commission
paula.gruendling@cpuc.ca.gov

Survey Introduction

S1. Our records show that you visited the Restaurant Showcase Event(s) at (RESTAURANT) on (DATE). Is that correct?

Response	Percent
Yes	100%
No	-
Total	**100%**

Participant Characterization

PC1. What was your role at your restaurant when you attended the Restaurant Showcase Event(s)?

Response	Percent
Restaurant Owner	55%
Institution Manager (school, hospital, etc)	27%
(Other)	18%
Total	**100%**

PC2. Why did you attend the Restaurant Showcase Event(s)?

Response	Percent
To learn about new efficient technologies	45%
To learn about rebates/other efficiency programs or initiatives	27%
To help save energy/money	18%
Networking	9%
Total	**100%**

Awareness and Knowledge of DS Technology

During the showcase event you attended at (RESTAURANT), the following energy efficient technologies were demonstrated. Please think about your experience with these technologies at the Restaurant Showcase Event when responding to the following questions:

AK1a. Did you see the following energy efficient technologies demonstrated at the event?
AK1b. Did you receive any information about these energy efficient technologies, even if you did not see them demonstrated?

[IF RESTAURANT IS BRIDGES, n=5]

Previously used equipment	New Efficient Equipment	AK1a. % Yes	AK1c. %Yes
Standard efficiency forced air convection ovens with direct-fired burners	High efficiency forced air convection ovens with efficient heat exchangers and restrictive exhaust flues	60%	100%
Standard efficiency gas fryer with a side heat exchanger	High efficiency gas fryer with multi-pass heat exchanger	80%	80%
Incandescent lighting	LED and fluorescent lamps	60%	80%
Standard efficiency walk-in freezer	High efficiency walk-in freezer that included dual speed electronically commutated motors with controllers and strip curtains	40%	60%

[IF RESTAURANT IS COMAL, n=3]

Previously used equipment	New Efficient Equipment	AK1a. % Yes	AK1c. %Yes
Standard efficiency gas fryer with an open tube heat exchanger	High efficiency gas fryer with tube heat exchanger and internal baffle)	67%	67%
Standard efficiency regular walk-in cooler	High efficiency walk-in cooler that included dual speed electronically commutated motors with controllers and strip curtains	-	-
Standard efficiency steamer	High efficiency Accutemp steamer	-	-
Standard efficiency ice machine	Time clock enabled high efficiency ice machine	33%	33%
Standard efficiency water heaters	High efficiency condensing water heaters	33%	67%
Standard efficiency refrigerators	High efficiency true reach-in refrigerators	33%	-
Standard efficiency pre-rinse spray valve	High efficiency low flow pre-rinse spray valve	67%	33%
Incandescent lighting	LED lighting in exhaust hood fixtures and in recessed modular fixtures	100%	100%
No demand controlled ventilation system	A Captive Air demand control ventilation energy management system	-	-

[IF RESTAURANT IS VIC'S ALL-STAR KITCHEN, n=3]

Previously used equipment	New Efficient Equipment	AK1a. % Yes	AK1c. %Yes
Standard efficiency natural convection ovens	High efficiency forced air convection ovens	67%	33%
Standard efficiency submerged electric fryer	High efficiency gas fryer with tube heat exchangers	33%	67%
Standard efficiency manually controlled griddle	High efficiency thermostatically controlled griddle	67%	67%

[ASK AK1B FOR EACH AK1A OR AK1C=YES]

AK1b. Were you aware of the demonstrated efficient technologies BEFORE you visited the Restaurant Showcase Event?

[IF RESTAURANT IS BRIDGES, n=5]

Previously used equipment	New Efficient Equipment	% Yes
Standard efficiency forced air convection ovens with direct-fired burners	High efficiency forced air convection ovens with efficient heat exchangers and restrictive exhaust flues	40%
Standard efficiency gas fryer with a side heat exchanger	High efficiency gas fryer with multi-pass heat exchanger	*(n=4)* 50%
Incandescent lighting	LED and fluorescent lamps	*(n=4)* 100%
Standard efficiency walk-in freezer	High efficiency walk-in freezer that included dual speed electronically commutated motors with controllers and strip curtains	*(n=3)* 67%

[IF RESTAURANT IS COMAL, n=3]

Previously used equipment	New Efficient Equipment	% Yes
Standard efficiency gas fryer with an open tube heat exchanger	High efficiency gas fryer with tube heat exchanger and internal baffle	*(n=2)* 50%
Standard efficiency regular walk-in cooler	High efficiency walk-in cooler that included dual speed electronically commutated motors with controllers and strip curtains	*(n=0)* -
Standard efficiency steamer	High efficiency Accutemp steamer	*(n=0)* -
Standard efficiency ice machine	Time clock enabled high efficiency ice machine	*(n=1)* -
Standard efficiency water heaters	High efficiency condensing water heaters	*(n=2)* –
Standard efficiency refrigerators	High efficiency true reach-in refrigerators	*(n=1)* -
Standard efficiency pre-rinse spray valve	High efficiency low flow pre-rinse spray valve	*(n=2)* 100%
Incandescent lighting	LED lighting in exhaust hood fixtures and in recessed modular fixtures	*(n=3)* 33%
No demand controlled ventilation system	A Captive Air demand control ventilation energy management system	*(n=0)* -

[IF RESTAURANT IS VIC'S ALL-STAR KITCHEN, n=3]

Previously used equipment	New Efficient Equipment	% Yes
Standard efficiency natural convection ovens	High efficiency forced air convection ovens	33%
Standard efficiency submerged electric fryer	High efficiency gas fryer with tube heat exchangers	-
Standard efficiency manually controlled griddle	High efficiency thermostatically controlled griddle	-

For the next questions, please think about ALL the technologies that were featured at the Restaurant Showcase Event(s) you attended.

AK2. Please rate your level of agreement with the following statement, where 1 means 'strongly disagree' and 7 means 'strongly agree'

I am now more knowledgeable about the technologies demonstrated than I was before.

Response	Percent
1	-
2	-
3	-
4	9%
5	36%
6	18%
7	36%
Total	**100%**
Mean	**5.82**

Exploration of Market Barriers

Please rate your level of agreement with the following questions, where 1 means 'strongly disagree' and 7 means 'strongly agree'

[ASK IF UTILITY IS PG&E OR SCE, n=11]
OP1. Our practice is not to worry about our technology unless it breaks down.

Response	Percent
1	9%
2	27%
3	-
4	36%
5	18%
6	-
7	9%
Total	**100%**
Mean	**3.64**

[ASK IF UTILITY IS PG&E OR SCE, n=11]
OP2. Our company includes the long run operating and maintenance costs of technology in its initial calculations.

Response	Percent
1	-
2	-
3	9%
4	27%
5	27%
6	27%
7	9%
Total	**100**
Mean	**5.00**

[ASK IF UTILITY IS PG&E OR SCE, n=11]
OP3. Investing extra money in energy efficient technology would reduce our ability to take advantage of other investment opportunities.

Response	Percent
1	-
2	36%
3	9%
4	36%
5	-
6	18%
7	-
Total	**100%**
Mean	**3.55**

PU1. When we select technology, the most important thing we look for is reliability of operation.

Response	Percent
1	-
2	-
3	-
4	9%
5	18%
6	36%
7	36%
Total	**100%**
Mean	**6.00**

PU2. The return on investment from energy efficient technology is difficult to estimate.

Response	Percent
1	-
2	18%
3	36%
4	9%
5	36%
6	-
7	-
Total	**100%**
Mean	**3.64**

PU3. Our company is unwilling to take the risks involved in the use of high efficiency technology.

Response	Percent
1	36%
2	18%
3	18%
4	18%
5	9%
6	-
7	-
Total	**100%**
Mean	**2.45**

IS1. It's hard to figure out which technology to buy because of all the technical information you have to find.

Response	Percent
1	-
2	-
3	18%
4	45%
5	27%
6	-
7	9%
Total	**100%**
Mean	**4.36**

IS2. It's hard to get a handle on the benefits of energy efficient technology without a detailed written analysis.

Response	Percent
1	-
2	18%
3	9%
4	36%
5	27%
6	9%
7	-
Total	**100%**
Mean	**4.00**

HC1. I believe that there may be additional operations and maintenance costs associated with energy efficient technology, but I don't know what they are.

Response	Percent
1	-
2	9%
3	18%
4	27%
5	45%
6	-
7	-
Total	**100%**
Mean	**4.09**

[ASK IF UTILITY IS SEPRA OR SCE, n=0]
AI1. Equipment sales people usually just try to push the products of whatever manufacturer they're closest to.

Response	Percent
1	-
2	-
3	-
4	-
5	-
6	-
7	-
Total	-
Mean	-

[ASK IF UTILITY IS SEPRA OR SCE, n=0]
AI2. Equipment dealers and representatives use the desire for high-efficiency technologies by customers like us to charge more than it's really worth.

Response	Percent
1	-
2	-
3	-
4	-
5	-
6	-
7	-
Total	-
Mean	-

[ASK IF UTILITY IS SEPRA OR SCE, n=0]
AI3. I think much of what equipment sales people tell us about the performance of high efficiency technology is exaggerated.

Response	Percent
1	-
2	-
3	-
4	-
5	-
6	-
7	-
Total	-
Mean	-

Market Barriers

For the next questions, please think about ALL the technologies that were featured at the Restaurant Showcase Event(s) you attended.

[ASK IF UTILITY IS PG&E OR SCE, n=11]
MB1. My organization is more likely to consider installing energy-efficient technology than it was before.

Response	Percent
1	-
2	-
3	-
4	9%
5	27%
6	27%
7	36%
Total	**100%**
Mean	**5.91**

[ASK IF UTILITY IS PG&E OR SCE, n=11]
MB2. My organization is more likely to think about operations and maintenance costs when making decisions about purchasing this type of technology than it was before.

Response	Percent
1	-
2	-
3	9%
4	18%
5	-
6	64%
7	9%
Total	**100%**
Mean	**5.45**

MB3. I am now better informed about the energy performance of this type of technology than I was before.

Response	Percent
1	-
2	-
3	-
4	-
5	36%
6	36%
7	27%
Total	**100%**
Mean	**5.91**

MB4. It is easier to make purchasing decisions about this type of technology than it was before.

Response	Percent
1	-
2	-
3	-
4	18%
5	27%
6	45%
7	9%
Total	**100%**
Mean	**5.45**

MB5a. I am now more certain about the effects on kitchen productivity that may result from this type of technology than I was before.

Response	Percent
1	-
2	-
3	9%
4	36%
5	27%
6	27%
7	-
Total	**4.73**
Mean	**100%**

MB5b. It will be easier to find information about this type of technology than it was before.

Response	Percent
1	-
2	-
3	-
4	27%
5	27%
6	45%
7	-
Total	**100%**
Mean	**5.18**

MB6. I understand more about the maintenance and operating costs for this type of technology than I did before.

Response	Percent
1	-
2	-
3	18%
4	36%
5	27%
6	18%
7	-
Total	**100%**
Mean	**4.45**

MB7. It is easier to evaluate claims made in the marketplace about this type of technology than it was before.

Response	Percent
1	-
2	-
3	9%
4	27%
5	45%
6	18%
7	-
Total	**100%**
Mean	**4.73**

Influence on Participant Practices

IN1. Since attending the Restaurant Showcase Event(s), have you installed any of the demonstrated energy efficient equipment in your kitchen(s)?

Response	Percent
Yes	36%
No	64%
Don't know	-
Total	**100%**

[ASK IF IN1 IS NO, n=7]
IN1. Since attending the Restaurant Showcase Event(s), have you installed any of the demonstrated energy efficient equipment in your kitchen(s)?

Response	Percent
Yes	86%
No	14%
Don't know	-
Total	**100%**

[ASK IF IN2 IS 1, n=6]
IN3. Do you plan to install the demonstrated energy efficient equipment within the next year?

Response	Percent
Yes	33%
No	-
Don't know	67%
Total	**100%**

[ASK IF IN3 IS NO, n=0]
IN4. When do you plan to install the demonstrated energy efficient equipment?

Response	Percent
Open End	-
Total	-

[ASK IF IN2 IS NO, n=1]
IN5. Why don't you plan to install any of the demonstrated equipment?

Response	Percent
Do not work in a commercial kitchen	100%
Total	**100%**

Influence on Participant Practices

REC0. Based on your experience with the Restaurant Showcase Event(s), do you think you would provide clients or colleagues positive, neutral, or negative information about thus (EQUIPMENT)?

Response	Percent
Positive	91%
Neutral	9%
Negative	-
Total	**100%**

REC0a. Why would you give (READ IN RESPONSE TO REC0) information about this equipment?

Response	Percent
Impressed with efficiency/savings	27%
Impressed with information/demonstration/programs	27%
Expensive/not sure it's worth it	18%
Impressed with technology/equipment	18%
(Other)	9%
Total	**100%**

REC1. Based on your experience with the Restaurant Showcase Event(s) have you recommended any of the demonstrated energy efficient technologies to others?

Response	Percent
Yes	45%
No	55%
Don't know	-
Total	**100%**

[ASK IF REC1 IS YES, ELSE SKIP TO REC5, n=5]
REC2. Who did you recommend the technology to?

Response	Percent
Someone outside my organization	80%
My restaurant's chef	-
My supervisor or manager	20%
My institution's chef	-
My restaurant's owner	-
Total	**100%**

[ASK FOR ANY RESPONSE TO REC2, n=5]
REC4. What did you say about the technology that you recommended?

Response	Percent
That I recently purchased it for my kitchen	40%
Good return on investment	40%
Informative demo/program	20%
Total	**100%**

[ASK IF REC1 IS NO, ELSE SKIP TO CL1, n=6]
REC5. Why haven't you recommended any of the technologies?

Response	Percent
Opportunity/time hasn't come up	67%
Do not know anyone else in the industry	33%
Total	**100%**

Closing

CL1. Based on your experience with the Restaurant Showcase Event(s), is there anything else you think we should know about your experience learning about these energy efficient technologies?

Response	Percent
Positive experience/good job	18%
Should offer in other languages	9%
PGE should follow up with those that have expressed interested	9%
(No)	64%
Total	**100%**

Appendix E. Data Collection Instruments

The data collection instruments used for the evaluation are provided below.

E.1 TRIO

ETP TRIO
Internet Survey
DRAFT April 10, 2013

This is a web-based survey that will go to a census of TRIO event attendees. We have requested contact information from the IOUs in the form of TRIO event attendee lists. We will send an email invitation to each email address provided through our sample request (DR#201301) that includes a unique URL link to an online survey. We will keep results anonymous.

In general, the survey seeks to assess achievement of the PPM, which is the "percent of attendees who voluntarily respond and self-report increased understanding on how to do business with utilities".[1] In addition, the survey assesses whether the identified performance indicators resulted from attendance at the TRIO events, as well as a reduction in information and search costs.

Email Invitation

From: Opinion Dynamics on behalf of the California Public Utilities Commission

Subject: Emerging Technologies Program TRIO Event Feedback

Dear [NAME],

The California Public Utilities Commission (CPUC) is directing an evaluation of the Statewide Emerging Technologies Program (ETP). The ETP is a publicly funded program that is implemented by the four investor-owned utilities. The CPUC is interested in learning about your opinions and feedback regarding information you received from the TRIO event(s) you attended. TRIO is a program offered through the ETP which focuses on providing training and networking for entrepreneurs and companies that provide energy saving technologies. We hope you will take a few minutes to let us know about your impressions.

To ensure that your responses are anonymous, a third-party research firm, Opinion Dynamics, is conducting this survey. To confirm Opinion Dynamics is one of CPUC's approved contractors go to www.cpuc.ca.gov/eevalidation.

Please click on the link below to take this short survey:

[INSERT UNIQUE URL TO SURVEY]

Your assistance is critical to this important study, and your participation will help the CPUC better understand the performance of this program. If you have any questions or concerns about this study, please feel free to contact me. Thank you in advance for your assistance.

Sincerely,

[1] The Program Performance Metrics can be found in: Resolution E-4385, Appendix A, pp. 39-40.

Paula Gruendling
Energy Division
California Public Utilities Commission
paula.gruendling@cpuc.ca.gov

Survey Introduction

Thank you for your willingness to provide the Emerging Technologies Program (ETP) with feedback on the TRIO program.

S1. Did you attend any of the following events? (1=Attended, 2=Did not attend)

a.	SCE Symposium	3/12/2010	Santa Barbara, CA
b.	SCE Roundtable	5/26/2010	Palo Alto, CA
c.	PG&E Symposium	9/12/2010	Berkeley, CA
d.	SDG&E Symposium	1/27/2011	La Jolla, CA
e.	SDG&E Roundtable	3/2/2011	La Jolla, CA
f.	SCE Symposium	5/12/2011	Irvine, CA
g.	PG&E Symposium	7/12/2011	San Francisco, CA
h.	PG&E Roundtable	8/30/2011	San Francisco, CA
i.	SCG Symposium	2/28/2012	Downey, CA
j.	SCG Roundtable	5/9/2012	Downey, CA
k.	SCE Symposium	6/7/2012	Los Angeles, CA
l.	SCE Roundtable	8/2/2012	Pomona, CA
m.	PG&E Symposium	9/25/2012	San Francisco, CA
n.	PG&E Roundtable	11/7/2012	San Francisco, CA

[IF ALL S1a-n=2 THANK AND TERMINATE]

[CREATE VARIABLE TO INDICATE NUMBER OF EVENTS ATTENDED]

Participant Characterization

PC1. Which of the following categories best describes your position?[2]

1. Entrepreneur/product developer
2. Investor
3. Student/Academic
4. Third-party program implementer (This category includes ESCOs and consultants involved in program implementation)
5. Utility Employee
0. Other (Specify)

PC2. In two sentences or less, please briefly describe your professional interest in the TRIO events. In other words, why you were interested in attending the event(s) and how you thought it might be relevant to your job. [OPEN END]

[THANK AND TERMINATE IF PC1=5]

[2] Position categories derived from PG&E's TRIO attendance records.

Entrepreneur/Student Follow-up

[ASK IF PC1=1,3, 0, ELSE SKIP TO PC4]
PC3a. Are you currently working on developing one or more emerging technologies? Emerging technologies are new energy efficiency technologies, systems, or practices that have significant energy savings potential but have not yet achieved sufficient market share (for a variety of reasons) to be considered self-sustaining or commercially viable.

1. Yes [IF STUDENT OR OTHER RECLASSIFY AS PC1_REV=1]
2. No [[IF STUDENT OR OTHER RECLASSIFY AS PC1_REV=3 AND SKIP TO PC4]

PC3b. Which of the following categories do/does the product(s) you are developing fit into? (mult. resp.) [ROTATE]

1. Advanced HVAC (CA climate appropriate)
2. Plug-loads and/or smart appliances
3. Advanced lighting
4. Integrated building design and operations
00. Other [SPECIFY]

PC3c. Which of the following phases of development is/are your product(s) in?[3] (mult. resp.)

1. Research & Development –Applied research and development to proof of concept
2. Product Development –Fully-functional prototype to initial lab demonstration
3. Assessment and Demonstration – Initial lab demonstration to field demonstration/assessment and validation of performance/usability
4. Commercialization – Final configuration of the product for volume manufacturing and scale-up for sustainable market penetration. Initial acceptance by early adopters
5. Adoption – Commercial product broadly accepted by early adopters and early majority users
0. Other [SPECIFY]

Investor Follow-up

[ASK IF PC1_REV=2, ELSE SKIP TO PC7]

PC4. Are you (or your company) looking to invest in a particular type of emerging technology?

1. Yes
2. No [SKIP TO PC5]

[ASK IF PC4=1]

PC4a. What type of emerging technology are you (or your company) looking to invest in? (mult. resp.) [ROTATE]

[3] *Adapted from " California Statewide Emerging Technologies Program Technology Development Actors Study" Livingston Energy Innovation, December 14, 2012*

1. Advanced HVAC (CA climate appropriate)
2. Plug-loads and/or smart appliances
3. Advanced lighting
4. Integrated building design and operations
00. Other [SPECIFY]

PC5. Are you (or your company) looking to invest in an emerging technology that is at a particular phase of development?

1. Yes
2. No [SKIP TO PC6]

[ASK IF PC5=1]

PC5a. Which phase(s) of development?[4] [MULTIPLE RESPONSE]

1. Research & Development –Applied research and development to proof of concept
2. Product Development –Fully-functional prototype to initial lab demonstration
3. Assessment and Demonstration – Initial lab demonstration to field demonstration/assessment and validation of performance/usability
4. Commercialization – Final configuration of the product for volume manufacturing and scale-up for sustainable market penetration. Initial acceptance by early adopters
5. Adoption – Commercial product broadly accepted by early adopters and early majority users.
0. Other [SPECIFY]

PC6. Since attending TRIO have you (or your company) invested in an emerging technology being developed by someone who you met at a TRIO event?

1. Yes
2. No

Third Party Implementer Follow-up

[ASK IF PC1_REV=4, ELSE SKIP TO PC9]

PC7. Are you currently managing or working on a program that supports bringing emerging technologies to market?

1. Yes
2. No

[ASK IF PC7=1, ELSE SKIP TO PC9]

PC7b. Please briefly describe the program: [OPEN END]

[4] Adapted from " California Statewide Emerging Technologies Program Technology Development Actors Study" Livingston Energy Innovation, December 14, 2012

PC8. Which of the following product categories does your program support? [MULTIPLE RESPONSE] [ROTATE]

1. Advanced HVAC (CA climate appropriate)
2. Plug-loads and/or smart appliances
3. Advanced lighting
4. Integrated building design and operations
00. Other [SPECIFY]

All Attendees Follow-up

[SKIP IF PC1_REV=3]

PC9. At the time you attended TRIO were you [IF PC1_REV =1 "developing"; IF PC1_REV =2 "invested in"; IF PC1_REV =4 "managing a program that supports"] an emerging technology?

1. Yes
2. No

[ASK IF PC1_REV=1,2]
PC10. Since participating in TRIO have you brought a technology to market (i.e. technology is sold and distributed to target market)?

1. Yes
2. No

Marketing

M1. How did you hear about TRIO? [MULTIPLE RESPONSE]

01. Emerging Technologies Coordinating Council (ETCC) website
02. Utility website
03. Other website [SPECIFY]
04. Email from the ETCC
05. Email from source other than the ETCC [SPECIFY SOURCE]
06. From a colleague
07. At an event, such as the California Cleantech Open or a university competition
00. Other [SPECIFY]
98. Don't know

Effects

E1a. How much of the information presented at the [IF A1>1 "first"] TRIO event was new to you?

1. All of it was new
2. Most of it was new
3. Some of it was new
4. None of it was new

[ASK IF ATTENDED MORE THAN ONE EVENT]

E1b. How much of the information presented at subsequent TRIO events that you attended was new to you?

1. All of it was new
2. Most of it was new
3. Some of it was new
4. None of it was new

E2. Please rate the following statements on a scale from 1 to 7, where 1 means 'strongly disagree' and 7 means 'strongly agree'.

a. The information I received from TRIO allowed me to gain a better understanding of the process and requirements for working with utilities.
[ASK IF PC1_REV =1,2] b. I was able to network (IF PC1_REV =1: "with potential investors", IF PC1_REV =2 "with entrepreneurs") during the event.
[ASK IF PC1_REV =1,2] c. I received information from TRIO that (IF PC10=2 "could be", IF PC10=1 "was") helpful in bringing a new technology to market (i.e. technology is sold and distributed to target market).

[ASK IF E2a>4]
E2aa. What information in particular helped you gain a better understanding of how to work with utilities?[OPEN END]

E2ab. What information, if any, was not covered in the event that would have been helpful to you? [OPEN END]

[IF PC1_REV>2 SKIP TO CLOSING]
[ASK IF PC1_REV=1]
E3b. Which of the following have you done since attending a TRIO event? [MULTIPLE RESPONSE]

1.Placed a phone call to someone I met at a TRIO event.
2. Viewed the website of someone I met at a TRIO event.
3. Sent an email to someone I met at a TRIO event.
4. Established a business relationship with someone I met at a TRIO event.
5. Exchanged business cards with at least one potential investor at a TRIO event.
6. None of the above

E4a. Since attending the TRIO event, have you submitted a technology for consideration in a utility energy efficiency program?

1. Yes
2. No

[IF E4a=1]E4b.Where did you submit a technology for consideration?

1. Utility Energy Efficiency Programs
2. Emerging Technology Programs

3. Third-party Programs
00. Other [SPECIFY]

[IF E4a=1]
E4c. What technology did you submit? [OPEN END]

[IF E4a=1]
E4d. Was the technology accepted?

1. Yes
2. No
8. Don't Know

[IF E4a=1]

E4e. Did the utility provide feedback on the technology, such as an explanation of why it did or did not meet the utility's needs and objectives?

1. Yes
2. No

E5a. On a scale of 1-7, where 1 is 'very unlikely' and 7 is 'very likely', how likely is it that you will submit a technology for utility energy efficiency program consideration in the next year?

E5b. Why do you say that? [OPEN END]

Closing
Thank you for your time.

E.2 SCALED FIELD PLACEMENT

ETP Scaled Field Placement

In-Depth Interview Guide

Draft: 05-10-13

Opinion Dynamics analytical staff will conduct telephone interviews with customers who participated in Scaled Field Placement projects. The objective of these interviews is to support the Phase II evaluation by assessing changes in awareness and knowledge of technology, reduction in market barriers and project influence on the participant and market. We plan to conduct these interviews in May. Discussions will be taped and transcribed for purposes of evaluation. All transcripts will remain in confidence with Opinion Dynamics and Itron although anonymous quotes may be used in reporting.

Introduction

Hello, my name is [INSERT NAME] from Opinion Dynamics. The California Public Utilities Commission (CPUC) is directing an evaluation of the Statewide Emerging Technologies Program (ETP). The ETP is a publicly funded program that is implemented by the [INSERT IOU NAME FOR PROJECT]. The CPUC is interested in learning about your opinions and feedback regarding information you received as part of your participation in [IOU'S] [PROJECT]. This project installed [TECHNOLOGY] at [SITE]. We hope you will take a few minutes to let us know about your impressions. The interview will last no longer than 15 minutes.

Participant Characterization

1. Our records show that you have some experience with [PROJECT NAME] at [PROJECT SITE].Is that correct? Could you give me an overview of how you were involved in this project?
   [PROBE WITH:]
   a. How were you involved in this project? In what role or capacity? (i.e., Installer, specifier, engineer, city planner, trade associate, contractor, etc.)?
   b. IF NEEDED: Do you work for the company that owns the host-site? Were you/are you contracted to the company that owns the host-site? What is your job capacity?

2. In your own words, what was the objective of this project?

3. What did you learn from this project?

4. Could you tell me a little more about your role within your organization?
   [CLASSIFY AS MARKET ACTOR / NON-MARKET ACTOR][1]
   a. [ASK IF NOT MARKET ACTOR] Does your organization have other sites (e.g., other branches, franchises, etc.)?

[1] For the purposes of this interview, a market actor is a professional who interacts with sites owned by many entities and is in a position to influence the equipment installed on those sites, such as a contractor. A non-market actor is a customer who is in a position to influence the equipment installed at one or more sites all owned by the same entity, such as a property manager.

[IF YES, ASK]

i. Within your organization, do you communicate with colleagues at other sites?
ii. How often do you communicate with colleagues at other sites?
iii. Are you responsible for purchasing across multiple sites?

[IF MARKET ACTOR]

iv. Do you install technologies at multiple sites?
v. Do you recommend technologies for clients?
vi. How often?

Awareness and Knowledge of Technology

5. Were you aware of this technology before your experience with this project?

6. In general, what did you know about this technology prior to your experience with this project?

7. On a scale where 1 means 'strongly disagree' and 7 means 'strongly agree', please rate your level of agreement with this statement:

   Based on my experience with the [PROJECT NAME], I am now more knowledgeable about this type of technology than I was before.

[NON-MARKET ACTORS ONLY]

8. Since your experience with the [PROJECT NAME], have you purchased the technology or any of the technologies tested for this project? [PROBE: If so, how many?]
   a. [If no] Why not?
   b. Do you have any plans to purchase this type of technology in the future? [PROBE: If so, how many? When do you plan to purchase?]

Exploration of Market Barriers

Please rate your level of agreement with the following questions, where 1 means 'strongly disagree' and 7 means 'strongly agree'.

Barrier	Question	Read the question and circle your answer						
		Strongly Disagree						Strongly Agree
Organizational Practices / Customs	[ASK IF PG&E] OP1. Our practice is not to worry about our technology unless it breaks down.	1	2	3	4	5	6	7
	[ASK IF PG&E] OP2. Our company includes the long run operating and maintenance costs of technology in its initial calculations.	1	2	3	4	5	6	7
	[ASK IF PG&E] OP3. Investing extra money in energy efficient technology would reduce our ability to take advantage of other investment opportunities.	1	2	3	4	5	6	7
Performance Uncertainty	PU1. When we select technology, the most important thing we look for is reliability of operation.	1	2	3	4	5	6	7
	PU2. The return on investment from energy efficient technology is difficult to estimate.	1	2	3	4	5	6	7
	PU3. Our company is unwilling to take the risks involved in the use of high efficiency technology.	1	2	3	4	5	6	7
Info and Search Costs	IS1. It's hard to figure out which technology to buy because of all the technical information you have to find.	1	2	3	4	5	6	7
	IS2. It's hard to get a handle on the benefits of energy efficient technology without a detailed written analysis.	1	2	3	4	5	6	7
Hidden Information	HC1. I believe that there may be additional operations and maintenance costs associated with energy efficient technologies, but we don't know what they are.	1	2	3	4	5	6	7
Assymetric Information	AI1. Sales people usually just try to push the products of whatever manufacturer they're closest to.	1	2	3	4	5	6	7
	AI2. Equipment dealers and representatives use the desire for high-efficiency technologies by customers like us to charge more than it's really worth.	1	2	3	4	5	6	7
	AI3. I think much of what equipment sales people tell us about the performance of high efficiency technology is exaggerated.	1	2	3	4	5	6	7

Market Barriers

Please think about your experience with the project while you answer the following questions.

Barrier	Question: *Based on my experience with the [PROJECT NAME],*	Read the question and circle your answer						
		Strongly Disagree						Strongly Agree
Organizational Practices / Customs	[ASK IF PG&E] MB1. My organization is more likely to consider installing energy-efficient technology than it was before.	1	2	3	4	5	6	7
	[ASK IF PG&E] MB2. My organization is more likely to think about operations and maintenance costs when making decisions about purchasing this type of technology than it was before.	1	2	3	4	5	6	7
Performance Uncertaint	MB3. I am now better informed about the energy performance of this type of technology than I was before.	1	2	3	4	5	6	7
	[ASK IF NON-MARKET ACTORS ONLY] MB4. It is easier to make purchasing decisions about this type of technology than it was before.	1	2	3	4	5	6	7
Info and Search Costs	MB5. It will be easier to find information about this type of technology than it was before.	1	2	3	4	5	6	7
Hidden Costs	MB6. I understand more about the maintenance and operating costs for this type of technology than I did before.	1	2	3	4	5	6	7
Assymetric Information	MB7. It is easier to evaluate claims made in the marketplace about this type of technology than it was before.	1	2	3	4	5	6	7

Recommendations to Peers

9. Generally, do you think you would provide [ASK ABOUT ALL THAT APPLY (clients/colleagues, etc.)] positive, neutral, or negative information about [this technology/ these technologies]?

10. Based on your experience with the [PROJECT NAME], have you recommended [this technology/ these technologies] to others [like you/ in your industry/ in your trade]?
    a. Yes
    b. No
    c. Not sure

[ASK IF 10=YES]

11. To whom did you recommend [this technology/ these technologies]?
    a. What did you say about [this technology/ these technologies]?
    b. How many people did you recommend [this technology/ these technologies] to?
    c. How likely do you think your [ASK ABOUT ALL THAT APPLY (clients/colleagues, etc.)] are to install [this technology/ these technologies] at other sites?

[ASK IF 10=NO]

12. Why have you not recommended [this technology/ these technologies] to others [like you/ in your industry/ in your trade]?

[ASK IF 10= NOT SURE OR NO]

13. If you were to talk to others outside your organization about [this technology/ these technologies], who are you likely to talk to?
    a. [IF MARKET ACTOR AND NOT ANSWERED ABOVE] What clients, if any, would you talk to about [this technology/ these technologies]?

Closing

14. Based on the discussion we've had today is there anything else you think we should know about your experience with this project?

Those are all the questions I have for you today. Thank you for participating in this study.

E.3 DEMONSTRATION SHOWCASES

ETP Demonstration Showcase

ET12PGE2201- Food Service Technology Demo Kitchen Internet Survey

Draft: 5-29-13

Opinion Dynamics will field this internet survey to attendees of the ET12PGE2201- Food Service Technology Demo Kitchen Showcase project. We will attempt a census of the 60 attendees who attended showcases at Vic's All Star Kitchen, Comal, or Bridges restaurants and for whom we have email addresses.[1] *The objective of these surveys are to support the Phase II evaluation by assessing the program performance metric of* "a self-reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS." *In addition, the survey will assess any changes in awareness and knowledge of technology, reduction in market barriers and project influence on peers and practices. We will send an email invitation to each email address that includes a unique URL link to an online survey. The survey will be conducted in May. All data will remain in confidence with Opinion Dynamics and Itron although anonymous quotes may be used in reporting.*

Email Invitation

From: Opinion Dynamics on behalf of the California Public Utilities Commission

Subject: Restaurant Showcase Event Feedback Survey

Dear [NAME],

The California Public Utilities Commission (CPUC) is interested in learning about your opinions and feedback regarding information you received from the Restaurant Showcase Event(s) you attended at [INSERT RESTAURANT AND DATE OF EVENT], which demonstrated various energy-saving kitchen features. The California Public Utilities Commission (CPUC) is directing an evaluation of the Statewide Emerging Technologies Program (ETP), which tests and demonstrates new energy efficient technologies in California. The ETP is a statewide, publicly funded program, and the restaurant showcase events were developed by Pacific Gas & Electric. We hope you will take a few minutes to provide us your feedback.

To ensure that your responses are anonymous, a third-party research firm, Opinion Dynamics, is conducting this survey. To confirm Opinion Dynamics is one of CPUC's approved contractors go to www.cpuc.ca.gov/eevalidation.

Please click on the link below to take this short survey:

[INSERT UNIQUE URL TO SURVEY]

---

[1] There were 99 guests across the three kitchen demos held at restaurants. Of these there were 68 email addresses but 60 unique attendees with 58 unique email addresses. 2 attendees had the same email address.

Awareness and Knowledge of DS Technology

AK1. During the showcase event(s) at [RESTAURANT] the following energy efficient technologies were demonstrated:

[INSERT RESTAURANT-SPECIFIC MEASURES]

Restaurant	Previously Used Equipment	New Efficient Equipment	AK1a. Did you see the following energy efficient technologies demonstrated at the event?	AK1c. Did you receive any information about the energy efficient technologies, even if you did not see them demonstrated?
Bridges	Standard efficiency forced air convection ovens with direct-fired burners	High efficiency forced air convection ovens with efficient heat exchangers and restrictive exhaust flues	O Yes O No	O Yes O No
	Standard efficiency gas fryer with a side heat exchanger	High efficiency gas fryer with multi-pass heat exchanger	O Yes O No	O Yes O No
	Incandescent lighting	LED and fluorescent lamps	O Yes O No	O Yes O No
	Standard efficiency walk-in freezer	High efficiency walk-in freezer that included dual speed electronically commutated motors with controllers and strip curtains	O Yes O No	O Yes O No
Comal	Standard efficiency gas fryer with an open tube heat exchanger	High efficiency gas fryer with tube heat exchanger and internal baffle	O Yes O No	O Yes O No
	Standard efficiency regular walk-in cooler	High efficiency walk-in cooler that included dual speed electronically commutated motors with controllers and strip curtains	O Yes O No	O Yes O No

[READ EACH IN AK1B WHERE AK1A = 1 OR AK1C = 1]

AK1b. Were you aware of the demonstrated efficient technologies BEFORE you visited the Restaurant Showcase Event(s)?

Restaurant	Previously Used Equipment	New Efficient Equipment	AK1b. Were you aware of the demonstrated efficient technologies BEFORE you visited the Restaurant Showcase Event(s)?
Bridges	Standard efficiency forced air convection ovens with direct-fired burners	High efficiency forced air convection ovens with efficient heat exchangers and restrictive exhaust flues	O Yes O No
	Standard efficiency gas fryer with a side heat exchanger	High efficiency gas fryer with multi-pass heat exchanger	O Yes O No
	Incandescent lighting	LED and fluorescent lamps	O Yes O No
	Regular standard efficiency regular walk-in freezer	High efficiency walk-in freezer that included dual speed electronically commutated motors with controllers and strip curtains	O Yes O No
Comal	Standard efficiency gas fryer with an open tube heat exchanger	High efficiency gas fryer with tube heat exchanger and internal baffle	O Yes O No
	Standard efficiency walk-in cooler	High efficiency walk-in cooler that included dual speed electronically commutated motors with controllers and strip curtains	O Yes O No
	Standard efficiency steamer	High efficiency Accutemp steamer	O Yes O No
	Standard efficiency ice machine	Time clock enabled Manitowoc high efficiency ice machine	O Yes O No
	Standard efficiency water heaters	High efficiency condensing water heaters	O Yes O No

Restaurant	Previously Used Equipment	New Efficient Equipment	AK1a. Did you see the following energy efficient technologies demonstrated at the event?	AK1c. Did you receive any information about the energy efficient technologies, even if you did not see them demonstrated?
	Standard efficiency steamer	High efficiency Accutemp steamer	O Yes O No	O Yes O No
	Standard efficiency ice machine	Time clock enabled Manitowoc high efficiency ice machine	O Yes O No	O Yes O No
	Standard efficiency water heaters	High efficiency condensing water heaters	O Yes O No	O Yes O No
	Standard efficiency refrigerators	High efficiency true reach-in refrigerators	O Yes O No	O Yes O No
	Standard efficiency pre-rinse spray valve	High efficiency low flow pre-rinse spray valve	O Yes O No	O Yes O No
	Incandescent lighting	LED lighting in exhaust hood fixtures and in recessed modular fixtures	O Yes O No	O Yes O No
	No demand controlled ventilation system	A Captive Air demand control ventilation energy management system	O Yes O No	O Yes O No
Vic's All Star Kitchen	Standard efficiency natural convection ovens	High efficiency forced air convection ovens	O Yes O No	O Yes O No
	Standard efficiency submerged electric fryer	High efficiency gas fryer with tube heat exchangers	O Yes O No	O Yes O No
	Standard efficiency manually controlled griddle	High efficiency thermostatically controlled griddle	O Yes O No	O Yes O No

Restaurant	Previously Used Equipment	New Efficient Equipment	AK1b. Were you aware of the demonstrated efficient technologies BEFORE you visited the Restaurant Showcase Event(s)?
	Standard efficiency refrigerators	High Efficiency true reach-in refrigerators	O Yes O No
	Standard efficiency pre-rinse spray valve	High efficiency low flow pre-rinse spray valve	O Yes O No
	Incandescent lighting	LED lighting in exhaust hood fixtures and in recessed modular fixtures	O Yes O No
	No demand controlled ventilation system	A Captive Air demand control ventilation energy management system	O Yes O No
Vic's All Star Kitchen	Standard efficiency natural convection ovens	High efficiency forced air convection ovens	O Yes O No
	Standard efficiency submerged electric fryer	High efficiency gas fryer with tube heat exchangers	O Yes O No
	Standard efficiency manually controlled griddle	High efficiency thermostatically controlled griddle	O Yes O No

For the next questions, please think about **ALL** the technologies that were featured at the Restaurant Showcase Event(s) you attended.

Question: **Based on my experience with the Restaurant Showcase Event(s),**	**Read the question and circle your answer** Strongly Disagree						Strongly Agree
AK2. I am now more knowledgeable about the technologies demonstrated than I was before.	1	2	3	4	5	6	7

Exploration of Market Barriers

Please rate your level of agreement with the following questions, where 1 means 'strongly disagree' and 7 means 'strongly agree'.

Barrier	**Question**	**Read the question and circle your answer** Strongly Disagree						Strongly Agree
Organizational Practices / Customs	[ASK IF PG&E OR SCE] OP1. Our practice is not to worry about our technology unless it breaks down.	1	2	3	4	5	6	7
	[ASK IF PG&E OR SCE] OP2. Our company includes the long run operating and maintenance costs of technology in its initial calculations.	1	2	3	4	5	6	7
	[ASK IF PG&E OR SCE] OP3. Investing extra money in energy efficient technology would reduce our ability to take advantage of other investment opportunities.	1	2	3	4	5	6	7
Performance Uncertainty	PU1. When we select technology, the most important thing we look for is reliability of operation.	1	2	3	4	5	6	7
	PU2. The return on investment from energy efficient technology is difficult to estimate.	1	2	3	4	5	6	7
	PU3. Our company is unwilling to take the risks involved in the use of high efficiency technology.	1	2	3	4	5	6	7
Info and Search Costs	IS1. It's hard to figure out which technology to buy because of all the technical information you have to find.	1	2	3	4	5	6	7
	IS2. It's hard to get a handle on the benefits of energy efficient technology without a detailed written analysis.	1	2	3	4	5	6	7
Hidden Information	HC1. I believe that there may be additional operations and maintenance costs associated with energy efficient technology, but I don't know what they are.	1	2	3	4	5	6	7
Asymetric Information	[ASK IF SEMPRA OR SCE] AI1. Equipment sales people usually just try to push the products of whatever manufacturer they're closest to.	1	2	3	4	5	6	7
	[ASK IF SEMPRA OR SCE] AI2. Equipment dealers and representatives use the desire for high-efficiency technologies by customers like us to charge more than it's really worth.	1	2	3	4	5	6	7
	[ASK IF SEMPRA OR SCE] AI3. I think much of what equipment sales people tell us about the performance of high efficiency technology is exaggerated.	1	2	3	4	5	6	7

Market Barriers

For the next questions, please think about ALL the technologies that were featured at the Restaurant Showcase Event(s) you attended.

Barrier	Question: *Based on my experience with the* Restaurant Showcase Event(s)	Read the question and circle your answer						
		Strongly Disagree						Strongly Agree
Organizational Practices / Customs	[ASK IF PG&E] MB1. My organization is more likely to consider installing energy-efficient technology than it was before.	1	2	3	4	5	6	7
	[ASK IF PG&E] MB2. My organization is more likely to think about operations and maintenance costs when making decisions about purchasing this type of technology than it was before.	1	2	3	4	5	6	7
Performance Uncertainty	MB3. I am now better informed about the energy performance of this type of technology than I was before.	1	2	3	4	5	6	7
	MB4. It is easier to make purchasing decisions about this type of technology than it was before.	1	2	3	4	5	6	7
	MB5a. I am now more certain about the effects on kitchen productivity that may result from this type of technology than I was before.	1	2	3	4	5	6	7
Info and Search Costs	MB5b. It will be easier to find information about this type of technology than it was before.	1	2	3	4	5	6	7
Identification of Hidden Costs	MB6. I understand more about the maintenance and operating costs for this type of technology than I did before.	1	2	3	4	5	6	7
Asymetric information	MB7. It is easier to evaluate claims made in the marketplace about this type of technology than it was before.	1	2	3	4	5	6	7

Influence on Participant Practices

IN1. Since attending the Restaurant Showcase Event(s), have you installed any of the demonstrated energy efficient equipment in your kitchen(s)?

1. Yes
2. No

[ASK IF IN1=2]
IN2. Since attending the Restaurant Showcase Event(s), do you plan to install any of the demonstrated energy efficient equipment in your kitchen(s)?

1. Yes
2. No

[ASK IF IN2=1]
IN3. Do you plan to install the demonstrated energy efficient equipment within the next year?

1. Yes
2. No
8. Don't know

[ASK IF IN3=2]
IN4. When do you plan to install the demonstrated energy efficient equipment? [OPEN END]

[ASK IF IN2 = 2]
IN5. Why don't you plan to install any of the demonstrated equipment? [OPEN ENED]

Recommendations to Peers

REC0. Based on your experience with the Restaurant Showcase Event(s), do you think you would provide clients or colleagues positive, neutral, or negative information about [this equipment]?

1. Positive
2. Neutral
3. Negative

REC0a. Why would you give [READ IN RESPONSE TO REC0] information about this equipment? [OPEN END]

REC1. Based on your experience with the Restaurant Showcase Event(s) have you recommended any of the demonstrated energy efficient technologies to others?

1. Yes
2. No
8. Don't know

[ASK IF REC1=1; ELSE SKIP TO REC5]
REC2. Who did you recommend the technology to? Please select all that apply. [MULTIPLE RESPONSE]

- O 1. My restaurant's owner
- O 2. My restaurant's chef
- O 3. My supervisor or manager
- O 4. My institution's chef
- O 5. Someone outside my organization

O 0. Someone else: please specify

[ASK IF ANY 1-6 ARE SELECTED IN REC2; ELSE SKIP TO REC5]
REC4. What did you say about the technology you recommended? [OPEN END, 200 WORD MAX]

[ASK IF REC1 1=2, ELSE SKIP TO CL1]
REC5. Why haven't you recommended any of the technologies? [OPEN END, 100 WORD MAX]

Closing

CL1. Based on your experience with the Restaurant Showcase Event(s), is there anything else you think we should know about your experience learning about these energy efficient technologies? [OPEN END, 200 WORD MAX]

Those are all the questions I have for you today. On behalf of the CPUC, we thank you for participating in this study.

START

When answering the following questions, please exclude your experience with any class you may have taken at the EIC. Instead, when you answer, please only include your non-class experience, such as looking at the kiosks, interacting with information displays, or taking a tour.

1. Please select the category that best describes you:
   - ☐ A residential customer interested in energy efficiency
   - ☐ A professional who works across many sites (i.e. contractor, property manager)
   - ☐ A professional who works at one site (i.e. facilities manager)
   - ☐ Other: _____

2. Did you look at any of the following technologies during this visit or during any past visits? [PLEASE CHECK EACH RELEVANT BOX]
   - ☐ Lighting throughout center
   - ☐ Incorporation of daylighting
   - ☐ HVAC systems
   - ☐ Thermal storage
   - ☐ OTHER: _____

3. Were you aware of this/these technology/ies BEFORE your visit?
   - ☐ Yes, all of them
   - ☐ Yes, some of them
   - ☐ No

4. Please rate your level of agreement with the following questions, where 1 means 'strongly disagree' and 7 means 'strongly agree'.

	Read the question and circle your answer							
	Strongly Disagree						Strongly Agree	n/a
a. When I select technologies, the most important thing I look for is reliability of operation.	1	2	3	4	5	6	7	n/a
b. The return on investment from energy efficient technologies is difficult to estimate.	1	2	3	4	5	6	7	n/a
c. My [company/household] is unwilling to take the risks involved in the use of high efficiency technology.	1	2	3	4	5	6	7	n/a
d. It's hard to figure out which technology to buy because of all the technical information you have to find.	1	2	3	4	5	6	7	n/a
e. It's hard to get a handle on the benefits of energy efficient technology without a detailed written analysis.	1	2	3	4	5	6	7	n/a
f. I believe that there may be additional operations and maintenance costs associated with energy efficient technology, but I don't know what they are.	1	2	3	4	5	6	7	n/a
g. Sales people usually just try to push the products of whatever manufacturer they're closest to.	1	2	3	4	5	6	7	n/a
h. Equipment dealers and representatives use the desire for high-efficiency technologies by customers like us to charge more than it's really worth.	1	2	3	4	5	6	7	n/a
i. I think much of what equipment sales people tell us about the performance of high efficiency technology is exaggerated.	1	2	3	4	5	6	7	n/a

You may have seen more than one technology at the EIC, but please think about them all as a set of one technology for the remaining questions.

Question: Based on my experience learning about these energy efficient technologies:	Read the question and circle your answer							
	Strongly Disagree						Strongly Agree	n/a
j. I am now more knowledgeable about the technologies demonstrated than I was before.	1	2	3	4	5	6	7	n/a
k. I am now better informed about the energy performance of this type of technology than I was before.	1	2	3	4	5	6	7	n/a
l. It is/will be easier to find information about this type of technology than it was before.	1	2	3	4	5	6	7	n/a
m. I understand more about the maintenance and operating costs associated with this type of technology than I did before.	1	2	3	4	5	6	7	n/a
n. It is easier to evaluate claims made in the marketplace about this type of technology than it was before.	1	2	3	4	5	6	7	n/a
o. It is easier to make purchasing decisions about this type of technology than it was before.	1	2	3	4	5	6	7	n/a

5. Generally speaking, will learning about these energy efficient technologies influence changes in any of the following (Please select all that apply):
   - ☐ How you equip your facilities/household
   - ☐ How you manage your facilities/household
   - ☐ Plans to install the demonstrated energy efficient technology
   - ☐ [IF YOU SERVE CLIENTS] the technology you recommend your clients
   - ☐ Other: _____

   Jump to Questions 7, 8 and 9

   - ☐ No, it will not influence any changes.

6. Why do you think that learning about these energy efficient technologies will not influence any changes?

   _____

   Continue to Questions 7, 8, and 9

7. Based on your visit to the EIC, do you plan to recommend this technology to others?
   - ☐ Yes: To whom? _____
   - ☐ No: Why not? _____
   - ☐ Not sure

8. What is your profession?

   _____

9. Is there anything else you think we should know about your experience with these technologies?

   _____

   _____

Those are all my questions. On behalf of the CPUC thank you for your time.

ETP Demonstration Showcase

ET10SCE2020- ZNE Home Retrofit

In-Depth Interview Guide

Draft: 6-7-13

Opinion Dynamics analytical staff will conduct telephone interviews with the three stakeholder groups who participated in the DS project #ET10SCE2020- ZNE Home Retrofit showcase. These stakeholders are: Community Action Partnership of San Bernardino County (CAPSBC), San Bernardino Green Alliance (SBGA), and Neighborhood Housing Services of the Inland Empire (NHSIE). The objective of these interviews is to support the Phase II evaluation by assessing the program performance metric of "a self-reported increase in knowledge by randomly selected sample of targeted stakeholders who either 1) visited the DS or 2) were informed about the DS in a workshop about benefits of the DS." *Interviews with representatives of these three groups will be scheduled for May and June 2013. Discussions will be taped and transcribed for purposes of evaluation. All transcripts will remain in confidence with Opinion Dynamics and Itron although anonymous quotes may be used in reporting.*

Stakeholder Description (from Report):

- Community Action Partnership of San Bernardino County (CAPSBC) offers services, resources, and programs where low-income families can get help with paying energy bills, rent, food, and even help to improve job skills. The main objective of CAPSBC's Energy, Education and Environmental Services Program's is to help conserve energy by reducing the consumption of our natural resources. It also aims to make homes more comfortable and more healthful; lower the cost of utility bills; provide energy education; and process applications for the Home Energy Assistance Program (HEAP).
- San Bernardino Green Alliance (SBGA) is a public/private collaboration of businesses, government, community and faith-based organizations, environmental justice organizations, educational institutions, and community leaders dedicated to improving the health of the residents of the City of San Bernardino through jobs and entrepreneurial opportunities created by an emerging green economy. The collaborative intends to develop a multifaceted policy advocacy approach that engages residents, mobilizes community leadership, and secures public/private investment in high quality green jobs.
- Neighborhood Housing Services of the Inland Empire (NHSIE) provides access to homeownership opportunities by helping homeowners maintain their homes and property values, partnering with businesses and other organizations to expand human and financial resources, and by delivering grassroots community leadership that transforms neighborhoods.

Introduction

Hello, my name is [INSERT NAME] from Opinion Dynamics. The California Public Utilities Commission (CPUC) is directing an evaluation of the Statewide Emerging Technologies Program (ETP). The ETP is

a statewide publicly funded program. SCE, as part of ETP, implements the zero net energy (ZNE) Home Retrofit project. The CPUC is interested in learning about your opinions and feedback regarding information you received as part of your participation in SCE's Zero Net Energy or "ZNE" Home Retrofit. This project demonstrated various energy-saving technologies at a home in San Bernardino in 2011-2012 (on Grand St. in San Bernardino). We hope you will take a few minutes to let us know about your impressions. The interview will last no longer than 15 minutes.

Participant Characterization

1. Please tell me a little bit about your organization: [*Community Action Partnership of San Bernardino County (CAPSBC), San Bernardino Green Alliance (SBGA), Neighborhood Housing Services of the Inland Empire (NHSIE)].*

2. What is your role at the organization?

3. How were you involved with the ZNE Home Retrofit project conducted by SCE in San Bernardino? What roles or responsibilities did you have for the project?

Stakeholder Objectives/Identification of Market Barriers

4. What objectives did you (or your organization) intend to achieve by participating in this program or with this project? How does the project relate to your organization's mission?

5. Did you achieve the intended objectives? Why / why not?

6. Prior to this project, what was your organization's involvement with ZNE homes or products, if any?

7. What factors, if any, prevented your organization from promoting energy efficiency equipment that could contribute to zero net energy homes to your target population? [PROBE FOR BARRIERS]

8. Did your participation as a stakeholder lead to any changes in the services provided or information that your organization delivers to your target population?

9. If so, what changes were made?

Awareness and Knowledge of DS Technology

As part of the project, the ZNE home demonstrated the following energy efficient technologies:

Doors & Windows, Airsealing, Insulation, Cool Roofs, Lighting, Appliances, Electrical Systems, Hot Water Heaters, Solar Panels and Heat Pumps

AK2. Do you recall learning about any of these energy efficient technologies?

1. Yes
2. No
8. Don't know/Not sure

AK3. Were you aware of the demonstrated efficient technologies BEFORE your involvement in this project?

1. Yes
2. No
8. Don't know/Not sure

For the next questions, please think about **ALL** the technologies that were featured at the ZNE Home Retrofit project you visited.

AK4. On a scale where 1 means 'strongly disagree' and 7 means 'strongly agree', how much do you agree or disagree with each statement.

a. Based on my experience with the ZNE Home Retrofit project, I am now more knowledgeable about the technologies demonstrated than I was before.						
O	O	O	O	O	O	O
1	2	3	4	5	6	7
Strongly disagree						Strongly agree
b. Based on my experience with the ZNE Home Retrofit project, I am now more knowledgeable about how the demonstrated technologies can benefit my target population than I was before.						
O	O	O	O	O	O	O
1	2	3	4	5	6	7
Strongly disagree						Strongly agree

Market Barriers

For the next questions, please think about ALL the technologies that were featured at the ZNE Home Retrofit project. Some of these questions may not pertain to your experience. If so, just choose "not applicable".

MB1. On a scale where 1 means 'strongly disagree' and 7 means 'strongly agree', please rate your level of agreement with this statement:

Barrier	Question: *Based on my experience with the [PROJECT NAME],*	Read the question and circle your answer						
		Strongly Disagree						Strongly Agree
Organizational Practices/ Customs	MB1a.My organization is more likely to promote energy-efficient technologies within my target population than it was before.	1	2	3	4	5	6	7
Info and Search Costs	MB1b. It will be easier to provide information about the demonstrated energy efficiency measures or ZNE applications to my target population.	1	2	3	4	5	6	7
Hidden Costs	MB1c. I am better informed about the tradeoffs to achieving near ZNE for my target population.	1	2	3	4	5	6	7
Assymetric information	MB1d. It is easier to evaluate claims made in the marketplace about this type of technology than it was before.	1	2	3	4	5	6	7
Performance Uncertainty	MB1e. I am now better informed about the performance of this type of technology than I was before.	1	2	3	4	5	6	7

Influence on Participant Practices

IN2. Has your organization disseminated information about ZNE Home Retrofits or measures/practices to your target population?

[ASK IF IN2=YES]

IN2a. How has your organization disseminated knowledge about ZNE Home Retrofits or measures/practices to your target population? [PROBE FOR: media channels, information provided, number of touches, etc.]

[ASK IF IN2=YES]

IN2b. How influential was the ZNE Home Retrofit project in terms of supporting the development of information disseminated to your target population?

[ASK ALL]

IN1. Based on your experience with the ZNE Home Retrofit project, do you think the project led to an increase in awareness in your target population for the steps required to reach a Zero Net Energy Home Retrofit?

IN3. Do you think your target population has adopted energy efficiency or renewable energy technologies as a result of the information your organization disseminated?

[ASK IF IN3=YES]

IN3A. How did the information your organization disseminated regarding the project support your target populations' adoption of energy efficiency /renewable energy technologies/practices?

[ASK IF IN3=NO]

IN3B. Do you think that the information your organization disseminated regarding the project will lead to increased adoption of the energy efficiency or renewable energy technologies/practices *in the future*?

Closing

CL1. Based on your experience with the ZNE Home Retrofit project, is there anything else you think we should know about your experience learning about these energy efficient technologies? [OPEN END, 200 WORD MAX]

Those are all the questions I have for you today. On behalf of the CPUC, we thank you for participating in this study.

E.4 INVESTOR-OWNED UTILITY STAFF (EE AND ETP PROGRAM MANAGERS)

This is a web-based survey that will go to 48[1] internal IOU staff that received information regarding ETP projects completed within the 2010-2012 program cycle. The goal of the survey is to understand EE Program Manager awareness of ETP program information that is disseminated to them, as well as the effectiveness of the information in helping them to understand new technologies and allowing them to adopt or reject a new technology for their program. We will send an email invitation to each email address in the sample that includes a unique URL link to an online survey. We will keep results anonymous.

From: Opinion Dynamics on behalf of the California Public Utilities Commission

Subject: Emerging Technologies Program Technology Reports Feedback

Dear [NAME],

The California Public Utilities Commission (CPUC) is directing an evaluation of the Statewide Emerging Technologies Program (ETP). The ETP is a publicly funded program that is implemented by the four investor-owned utilities (PG&E, SCE, SCG and SDG&E). You may have received reports or information from the ETP about new technologies, practices, or solutions that could apply to your energy efficiency program. You also may have received reports from the ETP about market potential or customer behaviors around specific technologies. The CPUC is interested in learning about your opinions and feedback regarding the reports you received. We hope you will take a few minutes to let us know about your impressions.

To ensure that your responses are anonymous, a third-party research firm, Opinion Dynamics, is conducting this survey. To confirm Opinion Dynamics is one of CPUC's approved contractors go to www.cpuc.ca.gov/eevalidation.

Please click on the link below to take this short survey:

[INSERT UNIQUE URL TO SURVEY]

Your assistance is critical to this important study, and your participation will help the CPUC better understand the performance of this program. If you have any questions or concerns about this study, please feel free to contact me. Thank you in advance for your assistance.

Sincerely,

Paula Gruendling

[1] We received contact information from the IOUs for this survey effort. We have a total population of 48 survey recipients, 28 from PG&E, 11 from SCE, 7 from SCG and 2 from SDG&E. Of the 48 recipients, 27 were also contacted in our Phase I study.

Energy Division
California Public Utilities Commission
paula.gruendling@cpuc.ca.gov

Thank you for your willingness to provide the CPUC your feedback about the information you received from the Emerging Technologies Program (ETP). If you have any technical issues with the survey, please contact ETPStudy@opiniondynamics.com

Background Information

[ASK ALL]

BI1. What is your job title? [OPEN END]

BI2. What energy efficiency program(s) are you working on? [OPEN END]

[ASK ALL]
BI3. What sector(s) do you typically work with? [MULTIPLE RESPONSE, UP TO 5]
1. Commercial
2. Industrial
3. Residential
4. Agricultural
00. Other: please specify

[ASK ALL]
BI4. What technology end use areas do you typically work with? [MULTIPLE RESPONSE, UP TO 9]
1. Building Envelope
2. Combustion
3. Cooking Equipment
4. Domestic Hot Water
5. Energy Management System and Diagnostics
6. Heat Recovery
7. HVAC
8. Lighting
9. Refrigeration
10. Software for Rating Building or Managing Energy
11. Steam Trap
12. Thermostats
13. Variable Speed / Frequency Drives
14. Zero Net Energy (ZNE)
00. Other: specify

ETP Awareness

[SKIP TO R1 IF ETPSTAFF = 1]
EA1. On a scale from 1 to 7, where 1 is very unfamiliar and 7 is very familiar, how familiar are you with the Emerging Technologies Program?

Not at all familiar						Very familiar
1	2	3	4	5	6	7

EA2. Have you ever had any direct contact with Emerging Technologies Program staff from within your utility about the Emerging Technologies Program projects?

1. Yes
2. No

Information Received

R1. Within the past three years, the ETP has completed projects in the following technology areas. Which of the following technology areas have you received information about?

1. (SHOW IF IOU = PGE, SCG) Building Envelope
2. (SHOW IF IOU = SCG ONLY) Combustion
3. (SHOW IF IOU = PGE, SCE) Cooking Equipment
4. (SHOW IF IOU = PGE, SCG) Domestic Hot Water
5. (SHOW IF IOU = PGE, SCE) Energy Management System and Diagnostics
6. (SHOW IF IOU = SCG ONLY) Heat Recovery
7. (SHOW FOR ALL) HVAC
8. (SHOW IF IOU = PGE, SCE, SDGE) Lighting
9. (SHOW IF IOU = PGE, SDGE) Refrigeration
10. (SHOW IF IOU = PGE, SCE, SCG) Software for Rating Building or Managing Energy
11. (SHOW IF IOU = SCE ONLY) Application of Direct Current, Audits, Battery Charging, Blowers, or Food Processing
12. (SHOW IF IOU = PGE ONLY) Thermostats
13. (SHOW IF IOU = SCE, SDGE) Variable Speed / Frequency Drives
14. (SHOW IF IOU = PGE, SCE) Zero Net Energy (ZNE)
15. (SHOW IF IOU = PGE, SCE) Market Study

00. (SHOW FOR ALL) Other, describe: _____ [SKIP TO R2A]

96. None [SKIP TO R2A]

[READ IF R1 <> 0, ELSE SKIP TO R2A]

R2. You mentioned that you received information about [READ IN FROM R1]. Which of the following project information did you receive?

[IF UTILITY = PG&E & TECHNOLOGY TYPE = BUILDING ENVELOPE (R1 = 1)]

#	Project #	Element	Project Name	Subject	Received?
1	ET11PGE1041	TA	Advanced Window Films TA 1	Assessment of advanced window film products	[CHECK BOX]

[IF UTILITY = PG&E & TECHNOLOGY TYPE = COOKING EQUIPMENT (R1 = 3)]

#	Project #	Element	Project Name	Subject	Received?
2	ET12PGE2201	DS	Food Service Technology Demo Kitchen	Report on demonstration of efficient ventilation hoods, broilers, ovens, fryers, etc. in test kitchen.	[CHECK BOX]

[IF UTILITY = PG&E & TECHNOLOGY TYPE = DOMESTIC HOT WATER (R1 = 4)]

#	Project #	Element	Project Name	Subject	Received?
3	ET10PGE1001	TA	Heat Pump Water Heaters (HPWH) Field Study	Comparison of Heat Pump Water Heaters features	[CHECK BOX]
4	ET12PGE3191	SFP	Water Heaters Alt. Technologies (Phase A)	Assessment on Storage Tank, Tankless, Heat Pump Water Heaters for possible mobile app projects	

[IF UTILITY = PG&E & TECHNOLOGY TYPE = ENERGY MANAGEMENT SYSTEMS AND DIAGNOSTICS (R1 = 5)]

#	Project #	Element	Project Name	Subject	Received?
5	ET12PGE1311	TA	EMIS Baselining Performance Criteria (Phase A)	Assessment of technology readiness of building analytics to enable whole building approaches	
84	ET11PGE4221	MBS	M&BS Building Stock Study	Quantitative analysis researching the potential and applicability of energy management systems (EMS) for existing commercial buildings in PG&E territory.	

#	Project #	Element	Project Name	Subject	Received?
85	ET11PGE1141	MBS	EMS Data Translation (Pneumatic to Wireless)	Market study to understand the technical landscape and vendor offering of the Energy Management and Information Systems space.	
86	ET11PGE4211	MBS	M&BS EMS Systems	Study to identify qualitative barriers to accelerating adoption of energy management systems for commercial and industrial customers	

[IF UTILITY = PG&E & TECHNOLOGY TYPE = HVAC (R1 = 7)]

#	Project #	Element	Project Name	Subject	Received?
7	ET12PGE1111	TA	Packaged HVAC Advanced Controls and Sensors Technical Assessment	Assessment of HVAC controls and sensors for small and medium business owners	
8	ET12PGE3181	SFP	Comprehensive HVAC RTU for SMB	Market study of statewide initiative to deploy climate appropriate evaporative precoolers, motors and fans.	
87	ET11PGE1109	MBS	HVAC Quality Maintenance Standards Implementation Behavioral Study	Report on HVAC Quality Maintenance (QM). Report included information on how to best engage customers.	
6	ET11PGE1082	TA	Advance Radiant HVAC System Field Test	Field assessment of integration of radiant cooling, heating, and related envelope systems and installation methods in California homes.	
100	ET11PGE1081	TA	Advance Radiant HVAC System Lab Test	Lab assessment of integration of radiant cooling, heating, and related envelope systems and installation methods in California homes.	

[IF UTILITY = PG&E & TECHNOLOGY TYPE = LIGHTING (R1 = 8)]

#	Project #	Element	Project Name	Subject	Received?
9	ET12PGE3301	SFP	PAR/MR LED Pilot	Assessment of PAR/MR LED lighting product launch	
10	ET12PGE3351	SFP	Safeway - Advanced LED Track Fixtures	Evaluation of advanced LED lighting technologies	

#	Project #	Element	Project Name	Subject	Received?
11	ET12PGE1011	TA	Assessment of Directional LEDs	Assessment of off-the-shelf directional LED conducted by Top 10 USA and Ecova	
12	ET12PGE3171	SFP	Plasma Exterior (Phase A)	Baseline monitoring and light quality testing of exterior plasma technology at Port Authority of Oakland.	
13	ET11PGE3181	SFP	Follow Up Linear Panel and Controls Study (GSA)	Assessment of LEDs and lighting control scalability	
14	ET12PGE1261	TA	Xenon Technical Assessment Phase 1	Report on interim product testing and ongoing lifecycle testing of xenon exterior lighting.	
15	ET11PGE2201	DS	CLTC Lighting Demonstration Project	Report on demonstration of LED lamps in mock retail and hospitality environments.	
16	ET12PGE2231	DS	ETC Lighting Demo Showcase	Report on demonstration of lighting upgrades at Stockton ETC training courses.	
17	ET12PGE2291	DS	PEC Lighting Demo Showcase	Report on demonstration of lighting upgrades at the Pacific Energy Center (PEC) training courses.	
88	ET11PGE1101	MBS	Lighting MSB Conjoint Study	Conjoint and customer study of new lighting options in the residential market.	
89	ET11PGE4081	MBS	Home Energy Management Insight Behavioral Research Smart Homes	Evaluation of consumer preferences and attitudes towards home energy management and "Smart Homes."	

[IF UTILITY = PG&E & TECHNOLOGY TYPE = REFRIGERATION (R1 = 9)]

#	Project #	Element	Project Name	Subject	Received?
18	ET12PGE3151	SFP	Food Service Tech Load Shifting Ice Machines (Phase A)	Report on deployment of DR-enabled controls for constant load Ice Machines	
101	ET12PGE3152	SFP	Food Service Tech Load Shifting Ice Machines (Phase B)	Deployment of DR enable controls for constant load Ice Machines to additional locations beyond Phase A.	

[IF UTILITY = PG&E & TECHNOLOGY TYPE = SOFTWARE FOR RATING BUILDINGS AND ENERGY MANAGEMENT (R1 = 10)]

#	Project #	Element	Project Name	Subject	Received?

#	Project #	Element	Project Name	Subject	Received?
19	ET12PGE1021	TA	CEC Building Rating Tools Assessment	Review of Benchmarking tools including CEC's Building Rating tool	
20	ET11PGE1051	TA	Data Center Infrastructure Management	Assessment of IT Energy Monitoring (aka Data Center Infrastructure Management) software in a real data center setting.	
21	ET11PGE3161	SFP	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase A)	Assessment of Pulse Energy EMS and energy coaching	
22	ET10PGE1031	TA	Carbon and Energy Management Systems	Evaluation of carbon and energy management software (CEMS) software	
23	ET11PGE3131	SFP	EMS Fault Detection Diagnostics	Assessment of software to find specific HVAC system faults.	
91	ET11PGE3191	MBS	Continental Automatic Building Association (CABA) Research Project	Study of North American consumer behaviors and attitudes surrounding the connected home.	
102	ET12PGE3341	SFP	First Fuel SFP	Comparison of the overall effectiveness of First Fuel's Remote Building Audit software to traditional onsite screening and scoping audits in San Luis Obispo county.	
103	ET11PGE3162	SFP	Pulse Energy -Dashboard w/ Energy Mgr. Tech Assessment (Phase B)	Test efficacy and energy savings potential facilitated through Pulse Energy EMS and energy coaching	

[IF UTILITY = PG&E & TECHNOLOGY TYPE = THERMOSTAT (R1 = 12)]

#	Project #	Element	Project Name	Subject	Received?
24	ET12PGE1141	TA	Optimization/Learning Thermostat Assessment Phase 1	Lab assessment of technical capability of EcoFactor smart thermostat solution programmable communicating thermostat	
25	ET11PGE3073	SFP	Home Energy Management Scaled Field Placement (Phase A) Smart Thermostats	Tests of normative / behavioral messaging from mobile app and web portal on customers' use of a programmable communicating thermostat in a real-world customer sample. Third phase of a four-phase project.	

#	Project #	Element	Project Name	Subject	Received?
26	ET11PGE3171	SFP	EMS Wireless Pneumatic Thermostat (Phase A)	Assessment of networked thermostat technology geared towards large commercial buildings.	
27	ET11PGE1071	TA	ET Home Energy Management Lab Tech Assessment Smart Thermostats	Performance evaluation of Honeywell programmable communicating thermostsat and Opower behavioral messaging software. First phase of a four-phase project studying effects of behavioral messaging from mobile app and web portal.	
28	ET11PGE1072	TA	ET Home Energy Management Field Tech Assessment Smart Thermostats	Alpha Test of the Opower/Honeywell Smart Thermostat Trial, which includes smart thermostat testing in PG&E employee homes. Second phase of a four-phase project studying effects of behavioral messaging from mobile app and web portal.	

[IF UTILITY = PG&E & TECHNOLOGY TYPE = ZNE (R1 = 14)]

#	Project #	Element	Project Name	Subject	Received?
29	ET12PGE2221	DS	ZNE Demonstration Home	Report on demonstration of ZNE home at the Stockton Energy Training Center (ETC).	
104	ET12PGE2211	DS	ZNE Modular Classroom	Report on a ZNE modular classroom at the Stockton ETC to assist in ZNE, ET and WET goals.	

[IF UTILITY = PG&E & TECHNOLOGY TYPE = MARKET STUDY (R1 = 15)]

#	Project #	Element	Project Name	Subject	Received?
92	ET11PGE3241	MBS	EPRI Early Deployment Efficiency End User Technologies	Project to bridge gap in technology development pipeline between field demos and utility programs with early deployments	[CHECK BOX]

[SCREEN BREAK FOR SCE RESPONDENTS]

[IF UTILITY = SCE & TECHNOLOGY TYPE = COOKING EQUIPMENT (R1 = 3)]

#	Project #	Element	Project Name	Subject	Received?
30	ET10SCE1310	TA	Hot Food Holding Cabinets for Foodservice	Laboratory evaluation of Hot Food Holding Cabinets for cooking	
31	ET10SCE1410	TA	High Density Holding Cabinets for Food Service	Series of field tests on McDonald's current universal holding cabinets (UHC) and a new high density universal holding cabinet (UHC-HD)	
32	ET10SCE1430	TA	Dry Well for Food Service	Field performance assessment of a dry well used in foodservice applications	
33	ET10SCE1330	TA	Combination Ovens for Food Service	Assessment of combination ovens	
34	ET10SCE1340	TA	Pizza Conveyor Ovens for Foodservice Applications	Laboratory evaluation of conveyorized pizza ovens	
35	ET10SCE1390	TA	Steamers for Food Service Applications	Assessment of steamers, or steam cookers cooking appliances	
36	ET10SCE1400	TA	Taco Tower for Food Service Applications	Testing of cooking equipment called the "Taco Tower"	
38	ET10SCE1440	TA	Steamer/Kettle for Food Service Applications	Field test of microwave steamers replacing steamer kettles at El Pollo Loco.	
105	ET10SCE1320	TA	Pressure Fryers for Foodservice Applications	Laboratory evaluation of a pressure fryer with a heavy, gasketed lid and a pressure valve.	
106	ET11SCE1140	TA	Hot Food Induction Holding Well	This project will assess a new closed loop induction holding well system at a Panda Express against a baseline water-based, open loop system.	
107	ET12SCE1040	TA	Cheese Melter For Food Service	Lab and field assessment of Taco Bell's new cheese melter.	
108	ET12SCE1080	TA	Conveyor Broilers for Foodservice Applications	Assessment of conveyor broilers commercial food service appliances used in quick-service restaurants, which apply heat to both the top and bottom of the food as it travels through the appliance.	

[IF UTILITY = SCE & TECHNOLOGY TYPE = ENERGY MANAGEMENT SYSTEMS AND DIAGNOSTICS (R1 = 5]

#	Project #	Element	Project Name	Subject	Received?
39	ET12SCE2010	DS	Impact of Smart Grid on Connected Homes	Report on potential market for Connected Home Market technologies, including home area networks (HAN)	
134	ET11SCE4070	MBS	Future Outlook for Residential Energy Management	Market study of consumer and manufacturers attitudes towards residential energy management to support Connected Homes	

[IF UTILITY = SCE & TECHNOLOGY TYPE = HVAC (R1 = 7)]

#	Project #	Element	Project Name	Subject	Received?
40	ET10SCE1240	TA	Frontier Project	Evaluation of various energy efficiency measures installed in one building: direct/indirect evaporative cooler, Daikin VRF System, and domestic hot water and space heating system.	
42	ET11SCE1130	TA	Evaporator Fan Delay Control	Evaluation of Evaporator Fan Delay controller for air conditioning systems.	
109	ET10SCE1110	TA	VRF for Lodging Application	Assessment of Variable Refrigerant Flow (VRF) systems for HVAC, where the space is cooled or heated directly by circulating refrigerant to evaporators located near or within the conditioned space.	
110	ET11SCE1190	TA	HVAC Electrostatic Filter	Assessment of electrostatic air filter to replace fiberglass media filters.	
111	ET11SCE4040	MBS	HVAC Technology Roadmap	Report on a tool for SCE to determine which HVAC market segments offer the highest potential for kWh and peak kW savings.	

#	Project #	Element	Project Name	Subject	Received?
112	ET10SCE1030	TA	Liquid Desiccant AC for Grocery Stores	Assessment of liquid desiccant system to lower and maintain indoor air relative humidity at or near 35%. Compared to the traditional vapor compression systems, the liquid desiccant system is capable of achieving lower humidity levels.	
113	ET11SCE1030	TA	Hospitality VRF Evaluation	Assessment of variable refrigerant flow (VRF) HVAC systems, which vary the speed of the compressor in the outdoor unit to meet the changing load requirements in each of the indoor zones.	

[IF UTILITY = SCE & TECHNOLOGY TYPE = LIGHTING (R1 = 8)]

#	Project #	Element	Project Name	Subject	Received?
43	ET10SCE1250	TA	Smart Corridor Bi-Level Lighting for Office Applications	Demonstration of bi-level and demand response (DR) capabilities of corridor lighting for commercial and institutional markets	
44	ET10SCE1220	TA	L Prize A-Lamp for Hospitality Applications	Field testing assessment of LED technology integral lamp	
45	ET10SCE1230	TA	L Prize A-Lamp Laboratory Assessment	Lab testing assessment of LED technology integral lamp	
46	ET10SCE1130	TA	LED Light for Commercial Pools	Baseline usage of LED Pool Lamps	
47	ET10SCE1290	TA	LED A-Lamp Laboratory Assessment	Viability study of LED A-Lamp lighting	
48	ET11SCE3020	SFP	LED Down Light	Demonstration of LED Recessed Downlights installed in high-visibility commercial market sectors	
93	ET11SCE4050	MBS	Pool Light Residential Usage Survey	Study to log residential pool lighting hours of operation	
135	ET10SCE1160	TA	Blower for Industrial Applications	Report on compressed air systems for lighting in industrial facilities	
114	ET11SCE1010	TA	Backlit Signs and Menu Boards Lab Evaluation	Lab evaluation of energy efficient solutions to current backlit signs, in particular, menu boards.	

#	Project #	Element	Project Name	Subject	Received?
115	ET11SCE1011	TA	Backlit Signs and Menu Boards Field Evaluation	Field evaluation of energy efficient solutions to current backlit signs, in particular, menu boards.	
116	ET11SCE1050	TA	Commercial Tubular Daylighting System	Study to determine the effectiveness and savings of solatube lensed tubular daylighting system with advanced lighting controls to provide glare-free daylight into interior office spaces.	
117	ET11SCE1240	TA	Small Commercial LED Lighting and Controls	Assessment of energy savings, economic benefits, and market potential for recessed LED lighting equipped with multiple types of lighting control systems for food service sector.	
118	ET12SCE4020	MBS	Advanced Lighting Controls Training Program - Needs Assessment	Report on a training program development for contractors that install advanced lighting technologies	
119	ET10SCE1190	TA	LED Recessed Luminaire	Assessment of recessed LED luminaires, also known as lay-ins or troffers, feature an LED light engine in a traditional recessed luminaire form factor.	
120	ET10SCE1300	TA	LED Menu Board Lighting Laboratory Assessment	Testing of Menu board lighting in a laboratory setting	
121	ET11SCE1180	TA	Microwave Controlled Advanced Street Lighting Evaluation	Assessment of ~ 40 intermediate collector non-dimmable high-pressure sodium street lights, replacement of one-on-one with mesh controlled LED coupled with microwave (MW) motion sensors (MS).	
122	ET11SCE1220	TA	LED Lighting for Cold Cases	Assessment of cold case and exterior fixed baseline 400W metal halides lights with motion sensor coupled to dimmable LED fixtures.	
123	ET11SCE1221	TA	Exterior LED Lights with Occupancy Sensors	Application of integral PIR occupancy sensors to LED exterior (structure and pole mtd) luminaires for dusk-dawn operation.	
124	ET12SCE1940	TA	Cutting Edge Auto Showroom & Exterior Lighting	Determine best practice best design concepts for lighting improvements to showroom/showroom offices, and front lot.	

#	Project #	Element	Project Name	Subject	Received?
125	ET12SCE1950	TA	Applied Advanced 220/110kV Substation Lighting	The innovation is the application of high efficacy lighting systems with controls to illuminate utility substation witchracks, entrances, roadways, parking lots, and pathways.	
126	ET12SCE1970	TA	Quick Assessment: Golf Club Clubhouse and Parking Advanced Lighting	This is a paper assessment of a site with diverse and plentiful opportunities for energy savings through the application of advanced technologies among its lighting and mechanical systems.	
127	ET12SCE1980	TA	Quick Assessment: Relight Himast Port of LA & LB with Advanced Lighting	The innovation sought is if any advanced lighting sources/systems can replace legacy HPS, typically ring-mounted @ 100" AFG, for dockyards. This high mast acts like indoor ambient .	

[IF UTILITY = SCE & TECHNOLOGY TYPE = APPLICATION OF DIRECT CURRENT, AUDITS, BATTERY CHARGING, OR BLOWERS (R1 = 11)]

#	Project #	Element	Project Name	Subject	Received?
128	ET11SCE1100	TA	Off-grid Commercial Office DC Grid System	Assessment of DC micro grids, a hybrid AC and DC platform in commercial buildings designed to reduce or eliminate inefficient AC to DC conversions between power sources and light sources by converting and distributing power in DC.	
129	ET12SCE1030	TA	DC Handheld Industrial Sanders	Assessment of DC sanders, which are designed to replace traditional sanders that run on compressed air systems.	
130	ET12SCE1060	TA	Advanced Energy Efficiency and Power Quality Industrial Audit	Under the Industrial Center of Exellence program, SCE and EPRI will work together to conduct an Energy Efficiency and Power Quality audit at an industrial site.	

#	Project #	Element	Project Name	Subject	Received?
131	ET12SCE1990	TA	Quick Assessment: Nano Sleeve for Electric Load	Assessment of Nano Sleeve, an energy harvesting device wrapped around pipes containing flow of electricity, oil or other fossil fuels. This device harvests energy from the environment and resonent tunneling through inner portions of the pipes to activate flowing medium inside the pipes.	
132	ET11SCE1040	TA	High Efficiency Blower Under 50hp Retrofit	Assessment of new-generation blowers with improved impeller design and the blower housing is about 70% efficient (as high as 79% from limited number of manufacturers).	
133	ET10SCE1450	TA	Vacuum Sealing/Packaging Machines for Food Service	Field evaluation of vacuum sealing/packaging machines for use in Kroger grocery stores.	

[IF UTILITY = SCE & TECHNOLOGY TYPE = VARIABLE SPEED / FREQUENCY DRIVES (R1 = 13)]

#	Project #	Element	Project Name	Subject	Received?
49	ET10SCE1070	TA	VSD for Die Casters	Assessment of variable speed drives on motors for die casting machines motors to allow changing pressures for hydraulic pumps.	
50	ET10SCE1050	TA	VSD Evaporative Fan Control for Walk-in Coolers	Investigations of uses of variable speed drives on evaporatory fan motors in walk-in coolers under 3000 square feet.	

[IF UTILITY = SCE & TECHNOLOGY TYPE = ZNE (R1 = 14)]

#	Project #	Element	Project Name	Subject	Received?
51	ET10SCE2020	DS	ZNE Home Retrofit	Demonstration of Zero Net Energy (ZNE) home	
52	ET10SCE2040	DS	ZNE New Home RFQ	An RFQ to find qualified sites for a ZNE Low Rise Project	
53	ET11SCE2020	DS	ZNE Big-box Retail	Demonstration of a near-ZNE big box retail store	

#	Project #	Element	Project Name	Subject	Received?
54	ET11SCE2050	DS	ZNE Residential Load Impact Forecast	Estimates of load impacts from the residential new construction (RNC) market in SCE territory between the years 2012-2020.	
95	ET10SCE4020	MBS	ZNE Technical Potential	Study on technical and economic potentials of specific market segments for Zero Net Energy.	

[IF UTILITY = SCE & TECHNOLOGY TYPE = MARKET STUDY (R1 = 15)]

#	Project #	Element	Project Name	Subject	Received?
96	ET10SCE4010	MBS	Air Blower Market Assessment	Assessment of current practices on compressed air systems in industrial processes	[CHECK BOX]
97	ET11SCE4010	MBS	Market Intelligence Gathering Process Evaluation	Evaluation of the market research techniques for identifying ET Project candidates.	
98	ET11SCE4030	MBS	Consumer Behavior Change via Online Integrated Demand-Side Management Leveraging Casual Social Games	Study of Zema Good, a social networking and social gaming platform and online Integrated Demand Side Management service	
136	ET12SCE4010	MBS	West Coast Medium Commercial Market Assessment	Market study of the medium commerical segment – to include the key organizational, operational and decision making characteristics and drivers, as well as whole building performance, equipment and system characteristics.	
137	ET11SCE1260	TA	Phase Change Material Paper Study	Assessment of the market and energy efficiency potential of phase change material (PCM), a thermal energy storage device that utilizes its high storage density and latent heat properties to decrease the cooling load on the air conditioning unit.	

[SCREEN BREAK FOR SCG RESPONDENTS]

[IF UTILITY = SCG & TECHNOLOGY TYPE = COMBUSTION (R1 = 2)]

#	Project #	Element	Project Name	Subject	Received?
58	ET10SCG0011	TA	ECO System Fuel Enhancer Evaluation	Study of device to improve combustion and how it relates to natural gas fuel engines and burning equipment	

[IF UTILITY = SCG & TECHNOLOGY TYPE = DOMESTIC HOT WATER (R1 = 4)]

#	Project #	Element	Project Name	Subject	Received?
59	ET10SCG0003	TA	Field Study of Masco Study / Res Recirc Pump	Comparison of the performance of standard hot water distribution systems and hot water recirculation systems	
61	ET12SCG0004	TA	Raypak DHW Boiler Reset Controller	Technology assessment to evaluate energy savings on DHW boiler reset control	
63	ET10SCG0021	TA	Solar Water Heating Systems	Assessment of reduction and natural gas consumption through solar pre-heating	
99	ET10SCG0015	MBS	Test LoNox Water Heater (MBS)	Technology assessment on residential water heater to meet new emission guidelines.	
62	ET10SCG0019	TA	Viability of Combo System - GTI - SCG	Assessment of residential tankless water heater to service both domestic hot water and hydronic space heating to save energy.	

[IF UTILITY = SCG & TECHNOLOGY TYPE = HEAT RECOVERY (R1 = 6)]

#	Project #	Element	Project Name	Subject	Received?

#	Project #	Element	Project Name	Subject	Received?
64	ET11SCG0001	TA	Thermal Recycler	Assessment of heat recovery device on commercial and industrial dryers	

[IF UTILITY = SCG & TECHNOLOGY TYPE = HVAC (R1 = 7)]

#	Project #	Element	Project Name	Subject	Received?
65	ET10SCG0013	TA	Thermodynamic Process Control (TA)	Assessment to validate the performance of a boiler control that measures the building load in real time and signals the boiler system to output only as much energy as the building load requires.	

[IF UTILITY = SCG & TECHNOLOGY TYPE = Software for rating buildings or managing energy (R1 = 10)]

#	Project #	Element	Project Name	Subject	Received?
67	ET10SCG0016	TA	CEC EE Web Tool	Assessment of commercial and industrial energy efficiency calculators	

[SCREEN BREAK FOR SDG&E RESPONDENTS]

[IF UTILITY = SDGE & TECHNOLOGY TYPE = HVAC (R1 = 7)]

#	Project #	Element	Project Name	Subject	Received?
69	ET11SDGE0018	TA	Lab Fume Hood ASPS	Assessment to validate fume hood savings	

[IF UTILITY = SDGE & TECHNOLOGY TYPE = LIGHTING (R1 = 8)]

#	Project #	Element	Project Name	Subject	Received?

#	Project #	Element	Project Name	Subject	Received?
70	ET11SDGE0001	DS	Energy Innovation Center	Demonstrate of performance of various lighting technologies (LED, high efficient fluorescent, induction, plasma, and solar PV in numerous applications (site, pathway, interior)	
71	ET11SDGE0003	DS	San Diego Zoo Gift Shop LED Lighting	Demonstration of LED track lighting performance in retail displays	
72	ET11SDGE0004	DS	Restaurant Ambient Lighting Demo Showcase	Report on energy savings potential and installation cost for LED restaurant lighting	
73	ET11SDGE0005	DS	LED Theater Stage Lighting	Report on the energy savings potential and installation cost for LED theatrical lighting	
74	ET11SDGE0006	DS	Bi-Level LED Parking Structure	Demonstration of LED lighting performance in parking structures	
75	ET11SDGE0008	TA	LED Pathway Bollard	Assessment of energy savings potential and installation cost for LED bollards for pathways	
76	ET11SDGE0009	TA	SDSU Central Plant Electronic HID Lighting	Assessment of energy savings potential and installation cost for electronic HID lighting systems	
77	ET11SDGE0010	TA	Sports Arena Electronic HID Lighting	Demonstration of electronic HID ballast performance	
78	ET11SDGE0011	TA	Bi-Level LED Elevator Cab Lighting	Determination of energy savings potential and installation cost for LED lighting systems in elevators	
79	ET11SDGE0012	DS	PUSD Electronic HID Lighting	Demonstration of validity of performance of electronic HID ballast	
80	ET10SDGE0002	DS	High Ceiling Lighting Options	Comparison between incandescent, LED and CFL lighting systems for high ceiling lighting	
81	ET10SDGE0007	TA	LED Task Light	Technology assessment of the Advanced Energy Office – Office of the Future	

[IF UTILITY = SDGE & TECHNOLOGY TYPE = REFRIGERATION (R1 = 9)]

#	Project #	Element	Project Name	Subject	Received?

#	Project #	Element	Project Name	Subject	Received?
82	ET11SDGE0013	TA	Adap. Fridge and Freezer Cntrl for Comm. App	Assessment of adaptive fridge and freezer controller	

[IF UTILITY = SDGE & TECHNOLOGY TYPE = VARIABLE SPEED/FREQUENCY DRIVES (R1 = 13)]

#	Project #	Element	Project Name	Subject	Received?
83	ET11SDGE0017	TA	MF Swimming Pool & Spa VFD	Assessment to validate commercial pool VFD savings	

Project Specifics

[LOOP (R2A-R9) THROUGH FOR EACH PROJECT INDICATED IN R2 UP TO 3; PRIORITIZE DS, SFP OR MBS, FOLLOWED BY TA PROJECTS, RANDOMIZE SELECTION]

[READ IF ANY SELECTED FROM R2, ELSE SKIP TO R2A] This series of questions deals specifically with the information you received from the [redacted]roject.

[ASK IF R1 = 00]
R2aa. You said that you received reports on another type of technology. Do you recall what type of information you received from the Emerging Technologies Program? [OPEN END]

[END LOOP]

[ASK ONLY IN LOOP 1]
R2a. [READ IF R1 <>00 and R2 = BLANK] Although you did not select any specific reports from the list above, do you recall receiving information from the Emerging Technologies Program?

1. Yes
2. No [SKIP TO CLOSING IF EA2 = 2, SKIP TO R9 IF EA2 = 1, SKIP TO R9 IF ETPSTAFF=1]

[ASK IF R2a=1]
R2b. What type of information did you receive? [OPEN END] [SKIP TO R9]

[ASK ALL]
For the **[PROJECT NAME FROM R2]** project,
R3. How did you receive the information? Was it … [MULTIPLE RESPONSE]

1. As a report
2. As a memo
3. In an email
4. Via discussion with ETP staff [SKIP IF ETPSTAFF=1]
5. Other: Specify:

For the **[PROJECT NAME FROM R2]** project,
R4. Did you share information regarding the technology with anyone on your staff or within your company?

1. Yes
2. No

[ASK IF R4 = 2, ELSE SKIP TO R5]
R4a. Why not? [OPEN END]

R5. Please think about the information you received regarding the [redacted]roject while you answer the following questions. Please rate the following statements on a scale from 1 to 7, with 1 meaning strongly disagree and 7 meaning strongly agree. [ROTATE STATEMENTS ON EACH SCREEN]

Strongly disagree						Strongly agree	Not Applicable
1	2	3	4	5	6	7	97

For the **[PROJECT NAME FROM R2]** project,

As a result of the information I received from the Emerging Technologies Program or discussions with program staff: [ROTATE]

a. I am more certain of the performance (or lack of performance) of the technology for this project.
b. [ASK IF SFP /DS PROJECT]] My knowledge of this type of technology has increased
c. It is easier to find information about this type of technology for this project than it was before.
d. It is easier to evaluate claims made in the marketplace about this technology than it was before.

For the [PROJECT NAME FROM R2] project,
As a result of the information I received from the Emerging Technologies Program or discussions with program staff: [ROTATE]

e. I can more easily make the case for including or not including this technology in my program.
f. My understanding of the SHORT-term costs associated with this technology has increased.
g. My understanding of the LONG-term costs associated with this technology has increased.
m. [ASK IF DS PROJECT] My understanding of customer acceptance of the specific energy efficient technologies described in the report has increased.

Now please review the following statements about the information you received about [PROJECT NAME FROM R2] project and rate your level of agreement on a scale of 1 to 7 where 1 means strongly disagree and 7 means strongly agree. [ROTATE]

Strongly disagree						Strongly agree	Not Applicable
1	2	3	4	5	6	7	97

j. The information I received is relevant to my target market.
k. The information I received is relevant to the end-use areas in my program.
h. [ASK IF SFP PROJECT] The information I received would be helpful in the development of marketing campaigns if the technology were to be adopted into the portfolio.
m. [ASK IF MBS PROJECT] The information I received increased my understanding of the target market for the energy efficient technology described in the report.
n. [ASK IF MBS PROJECT] The information I received increased my understanding of the level of customer acceptance of the energy efficient technology described in the report.

For the [PROJECT NAME FROM R2] project,
R6. Have you made a decision about whether to adopt or reject this technology in your energy efficiency portfolio?
1. Yes, I have made a decision
2. No, I have not made a decision yet
3. Other: Specify

[ASK R6 = 2, ELSE SKIP TO R7]

R6a. Do you plan to use the information you received on the [PROJECT NAME FROM R2] project in your decision-making process?

1. Yes
2. No
8. Don't know

[ASK IF R6=1]

For the **[PROJECT NAME FROM R2]** project,
R7. Did you receive information from the ETP about the technology for this project:

1. Before you made a decision to adopt or reject the technology
2. After you made a decision to adopt or reject the technology

[ASK IF R7=1]

For the **[PROJECT NAME FROM R2]** project,
R8. On a scale from 1 to 7, with 1 meaning "not at all influential" and 7 meaning "very influential," how influential was the information you received from the report in your decision to adopt or reject the new energy efficient technology?

Not at all influential						Very influential
1	2	3	4	5	6	7

For the **[PROJECT NAME FROM R2]** project,
R9. What did you learn about the technology from the ETP information you received? [OPEN END]

[END LOOP]

Closing

Thank you for your time.

Appendix F. PHASE I FINDINGS AND RECOMMENDATIONS

To provide context to the Phase II evaluation effort, we provide the overarching findings and recommendations from the PY2010-2012 California Statewide Emerging Technologies Program Phase I Report; a program design and implementation assessment of ETP. Below we provide interim findings and recommendations from the PY2010-2012 Statewide Emerging Technologies Program (ETP) process evaluation. The findings in this report represent early findings (primarily based on data through Q4 2011, with a status update in Q1 2012). This research was intended to provide early feedback to the program, and help build a common understanding in anticipation of an effectiveness assessment.

Overarching Findings

This evaluation sought to examine: (1) Alignment of the ETP with PIP, and (2) the ETP's Support of the CEESP. As such, the Evaluation Team assessed the implementation of the program against both the PIP (which is the guiding document for design and implementation of the program) and the broader effort of supporting emerging technologies to meet long-term policy goals, as described throughout the CEESP.

Overarching findings from our evaluation include:

- **The ETP is mostly implemented according to the PIP:** The PIP is the guiding document for design and implementation. The ETP is implemented according to the PIP Action Strategies (implemented 26 of 37 Action Strategies according to PIP). Some Action Strategies were not assessed in this phase of the evaluation because longer-term measurements are needed. As expected during the course of implementation, the IOUs have altered some Action Strategies.

- **Implementation varies across IOU territories:** While this is a statewide program, there is considerable variation in implementation across the state. This variation is in part due to different budgets across the IOUs (the Sempra utilities have a substantially lower budget than do PG&E and SCE). While the IOUs plan to implement all elements, drawing on the strengths of each IOU could offer a better effective statewide approach.

- **The ETP brings value to the marketplace:** The IOUs provide a variety of support for EE technologies, approaches and practices. Specifically, through their Technology Assessments (130 initiated to date as shown in the status update), the IOUs are verifying energy savings claims, which is one of the primary needs identified through our evaluation efforts and the main outcome expected of Technology Assessments. Through Demonstration Showcases (23 initiated as of Q1 2012), the IOUs are demonstrating and increasing the visibility of these technologies. The ETP is also testing products and practices to determine the feasibility of emerging technologies in advance of codes and standards, and identifying and providing performance specifications, through the Technology Development Support efforts.

  Based on our review of the design, accomplishments, and assessment of the needs of the market, ETP is demonstrating clear value to both the IOU EE portfolio and the broader CEESP goals. Our research also identified areas of process improvement to ensure that the current activities are being done more effectively, as well as some gaps where the ETP could provide additional support for the CEESP within their current resources.

Recommendations

Based on our findings, our recommendations fall into six main areas described below. Additional details that support our findings and analysis are provided in the Element-Specific and Detailed Findings and Recommendations section of this report.

- ***Recommendation: Align Goals and Budgets.*** Review and revise the budgets allocated for Market and Behavioral studies and TRIO. Both appeared to be over-budgeted in the 2010-2012 cycle. Alternatively, there may be a need to increase the objectives for these elements to better align with the dollars allocated.

- ***Recommendation: Focus outcomes of existing elements, and move towards explicitly describing (and monitoring) outcomes for the next program cycle.*** Overall, the 2010-2012 program incorporated program elements with six specific outcomes. An assessment of the early projects in the 2010-2012 program cycle found that projects were not always clearly implemented or tracked by the appropriate outcome. We recommend that ETP staff focus projects by outcomes for the next cycle to help ensure that their projects are implemented more closely with their intended design and will lead to the expected outcomes.

- ***Recommendation: Coordinate and Tailor Scanning and Screening.*** Given that the elements have very different outcomes, the IOUs should develop specific screening tools for each element. The development of specific screening tools will ensure that project selection meets expected program outcomes. General screening tools that are not outcome specific make it difficult for the ETP staff to select projects with varied intended outcomes. Collaboration across the IOUs to discuss opportunities to improve tools statewide can help with the development of outcome-specific tools. By discussing the criteria used for project selection, and why it varies across utilities, the IOUs can identify what criteria are IOU appropriate only or needed across the state.

- ***Recommendation: Enhance Reporting.*** Recommendations related to enhancing project reporting vary across the elements. Some address quality, while others deal with type or timing of reporting efforts. Specific recommendations include:

  - For Technology Assessments, work to enhance quality of reporting. Improve clarity of technical information through the development of a guidance document on scientific rigor.

  - For Demonstration Showcases, enhance the quality of efforts through explicitly identifying the target audience prior to designing a project.

  - For MBS, enhance timeliness of reporting. While timeliness information was based on early implementation efforts, the IOUs should seek to ensure that key stakeholders receive MBS reports (or the information that will be in the reports) early enough to inform decisions.

  - For TDS, formalize documentation to include 1) results from the project, 2) contact information, and 3) project selection criterion.

- ***Recommendation: Improve Data Tracking.*** Each IOU should comprehensively and accurately track ongoing activities in the ETP database. Projects cover long time frames and can extend beyond the current program cycle. Key data is missing and does not show the extent of the ETP activities. Tracking should be comprehensive and timely to reflect ongoing activities and status to the CPUC-ED and evaluators. In addition, the IOUs should include additional variables within the ETP database to reflect new program outcomes.

- *Recommendation: Further Support CEESP.* While ETP alone is not expected to meet CEESP goals, there are changes that could be made to the ETP that would allow the program to better support the CEESP. Understanding the ETP's position in the market relative to others who are also supporting emerging technologies will be critical to enhancing the value of the ETP's current efforts. In addition, being more strategic with activities and resources, and sharing information collected through the ETP will also help support CEESP. Specific examples of actions to support the CEESP are described in the PY2010-2012 California Statewide Emerging Technologies Program Phase I Report.