Appendix C
Section c.

New or Substantially Changed Programs that Do Not Exactly Fit the New PIP Template

2013-2014 Energy Efficiency Programs
Statewide Finance Program
Program Implementation Plan

1) **Program Name:** Statewide Finance Program
Program ID: SCG 3735 On-Bill Financing (OBF)
SCG3736 ARRA-Originated Financing
SCG3737 New Financing Offerings
Program Type: Statewide Core Program

2) **Program Description (general)**

The Statewide Finance Program is designed to help achieve the following potential major benefits:

- Encouraging customers to invest in projects that will achieve deeper energy savings.
- Overcoming the "first cost" barrier of energy efficiency upgrades;
- Leveraging ratepayer funds by bringing in private capital;
- Increasing sales of energy efficient products and services; and
- Reaching a broader set of customers and market segments.

The Statewide Finance Program consists of a portfolio of financing options to be implemented consistently on a statewide basis, including continuation of the On-Bill Financing (OBF) program, continuation of the American Recovery and Reinvestment Act (ARRA)-originated financing programs, and a set of new financing programs for single-family and multi-family residential customers as well as for small business and broader non-residential customers.

These financing offerings are intended to eventually support all types of demand-side investments, including energy efficiency, demand response, distributed generation, and storage.

In order to expedite and coordinate the development and expansion of the Statewide Finance program, the Commission directs SoCalGas and SDG&E, on behalf of all utilities, to hire an expert financing consultant no later than August 1, 2012. This effort will be co-funded by all of the utilities and may come either from unspent 2012 program funds and/or 2013-2014 funding.

The expert financing consultant will convene a set of two or more working groups designed to address:

- Program design issues for new financing programs.
- Energy project and loan performance data collection and dissemination issues.

The expert financing consultant will design financing pilot programs in 2012 to be launched in 2013 and scaled up in 2014. The utilities and the expert financing consultant will consult with the local governments and their partners on financing program development experience gained in the past few years through PACE and ARRA funded programs.

The new financing programs will be designed based on the following principles as directed by the Commission:

- Each financing product will be uniform across the state
- "Keep it simple and fast", avoid overly-complex design or paperwork and allow contractors and other marketing agents to present finance information to the borrower/energy-user to drive transactions.
- For the non-residential on-bill repayment program, a single servicing agent will be considered to relay simple finance payment information to the utility bill.
- The single servicing agent will be responsible for all special adjustments, the originator will be responsible for consumer inquiries, and there will be a separate program dispute resolution process for issues with contractors.

The expert financing consultant will identify and define these elements in more detail in 2012 for launching pilots in 2013. The 2013 and 2014 pilot programs will be explicitly designed to gain program experience and data, particularly with respect to debt repayments and project energy savings, which could attract additional capital resources from interested financial institutions and other businesses. The expert financing consultant will present 2013 pilot program design details in a written program plan and a public workshop by the end of 3rd quarter of 2012.

In consultation with the expert financing consultant and a working group convened by the consultant, the utilities will develop for California (or perhaps in collaboration with a national effort), a database of financing-related project performance and repayment data. This database will protect individual customer privacy, be shared publically, and will contain, at a minimum:

- Customer type,
- Host site characteristics,
- Customer payment history to the utility,
- Customer/borrower credit scores and energy project repayment histories,
- Energy project performance data (by building or customer, not only by measure),
- Billing impacts comparing pre- and post-installation utility bills.

3) Total Projected Program Budget and Savings (2 year)

The statewide portfolio of financing programs will be funded at a level of at least $200 million statewide over 2013-2014.

2013-2014 Energy Efficiency Programs
Statewide Finance Program
Program Implementation Plan

Table 1: Total Projected Program Budge by Subprogram (Rough Estimate, If Possible)

Program #	Main/Sub Program Name	Administrative Amount	Marketing Amount	Direct Implementation Amount	Incentive Amount	Total Program Budget Amount
	SW Finance					
3735	SW-FIN-On-Bill Financing	$110,667	$73,193	$1,043,518	$500,000	$1,727,378
3736	SW-FIN-ARRA-Originated Financing	$0	$0	$4,000,000	$0	$4,000,000
3737	SW-FIN-New Financing Offerings	$0	$0	$10,467,622	$0	$10,467,622
	TOTAL:	**$110,667**	**$73,193**	**$15,511,140**	**$500,000**	**$16,195,000**

Table 2: Total Projected Program Savings (Rough Estimate, If Possible)

Program #	Main/Sub Program Name	2013-2014 Gross kW Savings	2013-2014 Gross kWh Savings	2013-2014 Gross Therm Savings
	SW Finance Program			
3735	SW-FIN-On-Bill Financing	0	0	750,001
3736	SW-FIN-ARRA-Originated Financing	0	0	0
3737	SW-FIN-New Financing Offerings	0	0	0
	TOTAL:	**0**	**0**	**750,001**

4) Short description of each subprogram (suggested word limit - 50 words/subprogram).

On-Bill Financing (OBF)

The OBF subprogram is a continuation of and improvement on the existing utility on-bill financing programs for non-residential customers. OBF offers interest-free, utility ratepayer financed, unsecured energy efficiency loans to qualified non-residential customers with qualified projects. OBF allows customers to achieve energy savings through the purchase and installation of efficient equipment. Customer loans are repaid through a fixed monthly installment on their utility bills.

American Recovery and Reinvestment Act (ARRA) Originated Financing Programs

Several financing programs were funded through ARRA and that funding will expire during 2012. The IOUs will continue to fund selected ARRA-originated programs which have been, and will continue to be, implemented by 3rd parties, local governments, and/or via the California Energy Commission. Successful ARRA-originated programs will be selected based on the following criteria:

- Potential for scalability to larger markets;
- Ability to leverage ratepayer funds with private capital
- Ability to test unique/new program design and delivery
- Ability to serve previously un-served or under-served markets
- Ability to offer low interest rates to consumers
- Effective utilization of total combined ratepayer funding support from all sources.

The utilities will provide continued funding and administrative support for the selected programs in 2013-2014 as well as in 2012 (2012 funding of between $5 and $10 million will be from the 2010-2012 statewide ME&O budget).

New Financing Offerings

These are new, scalable, and leveraged statewide financing products to be designed in 2012 to help customers produce deeper energy savings. As described above, they will also be designed to gain program experience and data on debt repayment and project energy savings. Specifically the new offerings will include:

- A credit enhancement strategy for the single-family residential market;
- A multi-family residential market strategy that includes both credit enhancement and an on-bill repayment option that may require legislative change to fully implement;
- A credit enhancement strategy for the small business market; and
- An on-bill repayment strategy for all non-residential customers.

2013-2014 Energy Efficiency Programs
Statewide Finance Program
Program Implementation Plan

Sub-Program

Program Implementation Plan Template

1) **Sub-Program Name:** On-Bill Financing (OBF)
2) **Sub-Program ID number:** SCG 3735
3) **Type of Sub-Program:** X Core __Third Party __Partnership
4) **Market sector or segment that this sub-program is designed to serve:**

    a. __ Residential
        i. Including Low Income? __ Yes X No;
        ii. Including Moderate Income? __ Yes X No.
        iii. Including or specifically Multifamily buildings __ Yes X No.
        iv. Including or specifically Rental units? __ Yes X No.
    b. X Commercial (List applicable NAIC codes: All Commercial NAICS Codes)
    c. X Industrial (List applicable NAIC codes: All Industrial NAICS Codes)
    d. X Agricultural (List applicable NAIC codes: All Agricultural NAICS Codes)

5) **Is this sub-program primarily a:**
    a. Non-resource program ___ Yes X No
    b. Resource acquisition program X Yes ___ No
    c. Market Transformation Program ___ Yes X No

6) **Indicate the primary intervention strategies:**

    a. Upstream ___ Yes X No
    b. Midstream ___Yes X No
    c. Downstream X Yes ___ No
    d. Direct Install ___ Yes X No
    e. Non Resource ___ Yes X No

    Loan checks maybe payable to OBF contractors if customers so designate. However, in this situation, the loan proceeds represent payment from customer for work completed and not an incentive from the Utility.

7) **Projected Sub-program Total Resource Cost (TRC) and Program Administrator Cost (PAC) (Rough Estimate, If Possible)** TRC ___ PAC ___

    TBD

8) **Projected Sub-Program Budget**

Table 1. Projected Sub-Program Budget, by Calendar Year (Rough Estimate, If Possible – Components may need to be modified for financing) [1]

	Program Year		
On-Bill Financing	**2013**	**2014**	**Total**
Admin ($)	$ 26,110.32	$ 26,110.32	$ 52,220.64
General Overhead ($)	$ 29,223.29	$ 29,223.29	$ 58,446.58
Loan Funding Implementation($)	$513,109.01	$513,109.01	$ 1,026,218.02
Marketing & Outreach ($)	$ 36,596.38	$ 36,596.38	$ 73,192.76
Education & Training ($)	$ 8,650.00	$ 8,650.00	$ 17,300.00
Total Budget ($)	$613,689.00	$613,689.00	$ 1,227,378.00

9) Sub-Program Description, Objectives and Theory

a) Sub-Program Description and Theory:

Statewide On-Bill Financing offers interest-free, unsecured energy efficiency loans to qualified non-residential customers with qualified projects. OBF will build on the success of the past program cycle to allow customers to achieve energy savings through the purchase and installation of efficient equipment. Customer loans will be repaid through a fixed monthly installment on their utility bills. There is no prepayment penalty. Loans are not transferable. Partial or non-payment of loan could result in shut-off of utility service and turned over for collection. OBF funding for 2013 and 2014 will be at a level equal to or greater than the amount of OBF funding reserved by non-residential customers in 2012.

The primary market barrier that the OBF subprogram is intended to overcome is the lack of up-front capital for customers to invest in real and sustainable long-term energy cost reductions.

The 2010-2012 On-Bill Financing Process Evaluation and Market Assessment (http://www.energydataweb.com/cpucFiles/pdaDocs/846/OBF%20Final%20Report,%20May%202012.pdf) concludes that utilities should continue to offer OBF into 2013-14 while maintaining the key features that have driven participation:

- **Reduce or eliminate customer first-cost hurdles** - by enabling qualified customers to complete energy-efficiency projects with no up-front costs,

[1] Individual utility specific information to be provided in this table

OBF eliminates one of the major barriers to participation in energy efficiency.

- **Interest-free loans -** reduces customer cost
- **Bill-neutrality** – this program design feature has proven to be an effective tool for vendors, distributors, utility account executives, and other marketing agents to encourage customers to finance necessary upgrades while reducing customer bill-impacts (average monthly energy cost savings generally are greater than monthly debt service costs).

The Statewide OBF Team has worked closely to align program features and requirements so OBF will be consistently structured and delivered across all IOUs' service territories.

- **Eligible customers -** Non-residential customers (including institutional customers) and owners of multifamily units who do not reside on the premises.
- **Credit approval** – Based on customers' account history. By reviewing the individual customers' bill payment record, utility administrators have the ability to approve loans without the added time, cost, and subjective review of a third-party credit check. The IOUs have adopted this best practice due to the historically low OBF loan defaults to date.
- **Loan term** – loan terms are up to 10 years and up to 5 years for taxpayer-funded institutional and non-institutional customers respectively. Utilities will structure loan requirements to tailor loan terms to specific types of projects under specific guidelines, allowing longer maximum loan terms for more comprehensive or deeper energy savings projects and shorter maximum loan terms for projects with shorter payback periods (e.g. lighting and low cost equipment). Specific details to be recommended by the Expert Finance Consultant.
- **Loan minimum per meter**- $5,000
- **Loan maximum per meter -** $100,000 for non-institutional customers; $250,000 for taxpayer-funded institutional customers; eligible State of California accounts may qualify up to $1,000,000
- **Relationship to rebate/incentive** – A reduction or elimination of rebates/ incentives associated with OBF projects will be phased in. 2013 will be a transition year for IOUs to analyze possible program design options and determine the most likely to succeed path. Implementation will begin in 2014. Incremental energy savings associated with OBF projects will be counted toward the loan program and not rebate/incentive programs, thus avoiding double counting.
- **Financed equipment –** All measures in an OBF project must qualify for another utility rebate/incentive program.
- **Signing of loan agreement:** Prior to project installation
- **Loan payee –** can be either customer or contractor

- **Site bundling –** allowed for taxpayer-funded institutional customers only.
- **Multi-program participation -** A single project cannot receive funds from more than one loan program supported by ratepayer dollars. For example, a small business customer receiving credit enhancement offered through the utility for a specific project will not be eligible to receive an OBF loan for the same project.
- **Co-funding loans with another utility –** utilities with bordering/overlapping service territories will work together to co-fund qualified projects to common customers that will optimize gas and electric cost savings.
- **Vendor support** – utilities will adopt vendor support guidelines and standard participation agreement to monitor performance, manage customer expectations, and set clear roles and responsibilities for all parties.

b) **Sub-Program Energy and Demand Objectives**- If this sub-program has energy and demand objective, please complete Table 2.

Table 2. Projected Sub-Program Net Energy and Demand Impacts, by Calendar Year (Rough Estimate, If Possible) [2]

Program #	Main/Sub Program Name	2013-2014 Gross kW Savings	2013-2014 Gross kWh Savings	2013-2014 Gross Therm Savings
	SW Finance Program			
3735	SW-FIN-On-Bill Financing	0	0	750,001

c) **Program Non-Energy Objectives**:

Track OBF project and loan performance data to contribute to the financing-related project performance and repayment database.

d) **Cost Effectiveness/Market Need**: What methods will be or have been used to determine whether this program is cost-effective?[3] If this is a non-resource program, describe the literature, market assessments or other sources that indicate a need for this program.

Methods contained in the Standard Practice Manual will be used.

[2] Individual utility specific information to be provided in this table
[3] If the program has energy and demand objectives, simply state that the methods contained in the Standard Practice Manual will be used. If the program does not have energy and demand objective, propose an approach to assess cost-effectiveness.

e) **Measure Savings/ Work Papers (Rough Estimate, If Possible)** :

a. Indicate data source for savings estimates for program measures (DEER, custom measures, etc).

CPUC approved customized and DEER measures.

b. Indicate work paper status for program measures:

Table 4 – Work paper Status

See the Work paper Status table in the Statewide Industrial Program, the Statewide Commercial Program, and the Statewide Agricultural Program.

10) Program Implementation Details

a) **Timelines:** List the key program milestones and dates. An example is included below.

Table 5: Sub-Program Milestones and Timeline

Table 5: Sub-Program Milestones and Timeline

Milestone	Date
Statewide Coordination Meeting	Oct-12
Statewide Vendor Participation Guidelines Completed	Nov-12
Vendor training module completed	Nov-12
Marketing materials completed	Feb-13
Loans funded	2/2013 – 12/2014

b) **Geographic Scope**: List the geographic regions (e.g., CEC weather zones) where the program will operate

Table 6: Geographic Regions Where the Program Will Operate

See Table 6 in Attachment 2.

c) Program Administration

Table 7: Program Administration of Program Components (Rough Estimate, If Possible)

See Table 7 in Attachment 2.

d) Program Eligibility Requirements (TBD)

i. Customers: List any customer eligibility requirements (e.g., annual energy use, peak kW demand) **(TBD)**:

Table 8: Customer Eligibility Requirements (Joint Utility Table) (TBD)

See Table 8 in Attachment 2.

ii. Contractors/Participants: List any contractor (and/or developer, manufacturer, retailer or other "participant") eligibility requirements (e.g. specific IOU required trainings; specific contractor accreditations; and/or, specific technician certifications required). **(TBD)**

Table 9: Contractor/Participant Eligibility Requirements (Joint Utility Table) (TBD)

See Table 9 in Attachment 2.

e) **Program Partners (TBD):**

a. **Manufacturer/Retailer/Distributor partners:** For upstream or midstream incentive and/or buy down programs indicate[4]: **(TBD)**

Table 10: Manufacturer/Retailer/Distributor Partners (N/A)

See Table 10 in Attachment 2.

b. **Other key program partners**: Indicate any research or other key program partners.

Key partners include:

- Industry contractors/vendors
- Business Improvement Districts
- Chambers of Commerce
- Statewide and Local Government Utility Partners
- Program Advisory Group and subcommittees
- Process Evaluation Stakeholders and other participants
- Loan administrators

[4] Provide in a consistent format for all IOUs. Indicate program partners across all IOU territories in one table or spreadsheet. Append to end of PIP.

- Financial Institutions[5]

f) **Measures and incentive levels**: E3 calculators will provide the list of measures and incentive levels to be provided via the program. In this section the utilities should provide a summary table of measures and incentive levels. **(Rough Estimate, If Possible)**

Table 11: Summary Table of Measures, Incentive Levels and Verification Rates (Rough Estimate, If Possible)

See the Summary Table of Measures, Incentive Levels and Verification Rates in the Statewide Industrial Program, the Statewide Commercial Program, and the Statewide Agricultural Program.

(Rough Estimate, If Possible)

See Table 11 in Attachment 2.

a. Use a single excel spreadsheet to indicate the eligible measures for the program across all IOUs. Indicate the expected incentive level by measure or measure grouping for each IOU, making clear where these vary. **(Rough Estimate, If Possible)**
b. For each incented or rebated measure, indicate the market actor to whom this will be provided. **(Rough Estimate, If Possible)**

g) **Additional Services:** List additional services that the sub-program will provide, to which market actors.

This subprogram coordinates with commercial, industrial, and agricultural calculated sub programs that offer free energy audits, energy savings assessments, and information on other utility programs to program participants.

a. For each service provided, indicate any expected charges to market actors of the services, and/or the level at which any such services will be incented or funded.

   These services are offered to program participants free of charge.

Table 12: Additional Services

See Table 12 in Attachment 2.

[5] Financial Institutions may be interested in purchasing OBF loans from IOUs

h) **Sub-Program Specific Marketing and Outreach:** Please describe, providing timelines (suggested word limit: 300 words)

OBF marketing and outreach is performed through various channels including vendors, account executives, workforce education & training, IOU web-site outreach, CPUC web-site outreach, and utility energy efficiency marketing & outreach groups. As the utilities move towards a more uniform approach to OBF, a marketing plan will be developed in late 2012 to collaborate on a consistent strategy, message, and tactics that will serve the key stakeholders in each of the IOU service territories. Utilities with bordering/overlapping service territories will work together to develop and provide joint marketing approaches targeting integrated electric and gas savings opportunities. A key challenge will be coordination with the to-be-determined ARRA-originated financing programs and the two non-residential pilots.

i) **Sub-Program Specific Training:** Please describe, providing timelines (suggested word limit: 300 words)

IOUs will adopt best practices and recommendations to provide quarterly training for key market actors for OBF as well as additional program-appropriate modules. The training may include customer forums, Technology Center classroom trainings, Contractor forums, and Webinars. Training content will include:

- Program overview and requirements
- Customer & project eligibility
- Calculation of project scope
- Program application steps and requirements
- Application process and communications
- Vendor Participation Agreement guidelines
- OBF best practices and case studies
- Other Demand Side Management and Self-Generation program offerings – e.g. Direct Install, Rebates, Incentives, Demand Response, and California Solar Initiative programs.

j) **Sub-Program Software and/or Additional Tools:**

a. List all eligible software or similar tools required for sub-program participation. **(Rough Estimate, If Possible)**
b. Indicate if pre and/or post implementation audits will be required for the sub-program. ___ Yes ___ No **(TBD)**
   Pre-implementation audit required _X_ Yes ___ No
   Post-implementation audit required ___ Yes _X_ No
c. As applicable, indicate levels at which such audits shall be rebated or funded, and to whom such rebates/funding will be provided (i.e. to customer or contractor). **(Rough Estimate, If Possible)**

An on-site energy audit for OBF participants is free of charge.

Table 13: Post-implementation Audits (Rough Estimate, If Possible)

(Rough Estimate, If Possible)

See Table 13 in Attachment 2.

k) Sub-Program Quality Assurance Provisions: Please list quality assurance, quality control, including accreditations/certification or other credentials **(TBD)**

Table 14: Quality Assurance Provisions (TBD)

(TBD)

See Table 14 in Attachment 2.

l) **Sub-program Delivery Method and Measure Installation/Marketing or Training:** Briefly describe any additional sub-program delivery and measure installation and/or marketing & outreach, training and/or other services provided, if not yet described above.

Measure installation will be performed by a licensed contractor of the customers' choosing. OBF is delivered through contractors/vendors as well as utility account executives. Contractors/vendors who are paid through OBF loan funds will be required to attend training and sign a Vendor Participation Agreement. IOUs are exploring the development of a statewide Vendor Participation Agreement to align all programs for vendors who participate throughout the State. **SoCalGas markets its gas-only OBF program primarily through its Account Executives and does not have a formal OBF Vendor Participation program due to lack of interest from natural gas equipment vendors. SoCalGas will offer training to interested natural gas equipment vendors and provide a Vendor Participation Agreement to sign so they could work directly with potential OBF customers, however, does not require customer-selected vendors to sign the Vendor Participation Agreement or attend training since all program-related paper work is handled by utility Account Executives on behalf of their customers.**

m) Sub-program Process Flow Chart: Provide a sub-program process flow chart that describes the administrative and procedural components of the sub-program. For example, the flow chart might describe a customer's submittal of an application, the screening of the application, the approval/disapproval of an application, verification of purchase or installation, the processing and payment of incentives, and any quality control activities. **(TBD)**

SoCalGas does not require customer-selected vendors to sign the Vendor Participation Agreement or attend training since all program-related paper work is handled by utility Account Executives on behalf of their customers.

n) Cross-cutting Sub-program and Non-IOU Partner Coordination: Indicate other IOU EE, DR or DG sub-programs with which this sub-program will regularly coordinate. Indicate also key non-IOU coordination partners. Indicate expected coordination mechanisms[6] and frequency[7]:

Table 15: Cross-cutting Sub-program and Non-IOU Partner Coordination (TBD)

See Table 15 in Attachment 2.

o) **Logic Model:** Please append the logic model for this sub-program to the end of this PIP. Describe here any additional underlying theory supporting the sub-program intervention approach, referring as needed to the relevant literature (e.g., past evaluations, best practices documents, journal articles, books, etc.). **(TBD)**

11) Additional Sub-Program Information

a) **Advancing Strategic Plan Goals and Objectives**: Describe how sub-program advances the goals, strategies and objectives of the California Long Term Energy Efficiency Strategic Plan (word limit: 150 words)

On-Bill Financing is designed to facilitate the adoption of energy efficiency by removing one of the major barriers to participation – up-front costs. By allowing customers to finance upgrades, OBF advances the objectives of the California Long Term Strategic Plan; specifically, the commercial programmatic goal of zero net energy by 2030.

Additionally, OBF enables customers to take a holistic approach to projects and acts as a catalyst to implement improvements regardless of capital improvement budgets or schedules constraints. This holistic approach supports the 3rd of the Big Bold Strategies by funding HVAC measures in order to facilitate market transformation so that its energy performance is optimal for California.

b) Integration (TBD)

[6] "Mechanisms" refers to communication methods (i.e. quarterly meetings; internal list serves; monthly calls, etc.) and/or any cross-program review methods (i.e., feedback on program plans; sign off on policies, etc). or harmonization techniques (i.e. consistent certification requirements across programs, program participant required cross trainings, etc).
[7] This does not mean there would be mutual understanding of the on the mechanism or a known frequency of coordination; rather, just provide enough information to give a general sense of the coordinate efforts.

i. **Integrated/coordinated Demand Side Management**: As applicable, describe how sub-program will promote customer education and sub-program participation across all DSM options. Provide budget information of non-EE sub-programs where applicable. **(TBD)**

Table 16: Non-EE Sub-Program Information (TBD)

See Table 16 in Attachment 2.

ii. **Integration across resource types** (energy, water, air quality, etc): If sub-program aims to integrate across resources types, please provide rationale and general approach. **(TBD)**

See Table 16 in Attachment 2.

c) **Leveraging of Resources**: Please describe if the subprogram will leverage additional investments by market actors or other state, local or federal agencies. **(TBD)**

d) **Trials/ Pilots:** Please describe any trials or pilot projects planned for this sub-program **(TBD)**

e) **Knowledge Transfer:** Describe the strategy that will be used to identify and disseminate best practices and lessons learned from this sub-program **(TBD)**

12) Market Transformation Information: For programs identified as market transformation programs, include the following (suggested page limit- five pages): **(TBD)**

i. A summary of the market transformation objectives of the program. **(TBD)**
ii. A description of the market, including identification of the relevant market actors and the relationships among them; **(TBD)**
iii. A market characterization and assessment of the relationships/dynamics among market actors, including identification of the key barriers and opportunities to advance demand side management technologies and strategies; **(TBD)**
iv. A description of the proposed intervention(s) and its/their intended results, and specify which barriers the intervention is intended to address; **(TBD)**
v. A coherent program, or "market," logic model that ensures a solid causal relationship between the proposed intervention(s) and its/their intended results[8]; **(TBD)**

[8] If this logic model is the same as that requested in #10.(O), only provide once. As needed, provide a more detailed logic model emphasizing the market transformation elements of the program and/or how such elements integrate with resource acquisition elements.

vi. Appropriate evaluation plans and corresponding Market Transformation indicators and Program Performance Metrics based on the program logic model. **(TBD)**

13) Additional information as required by Commission decision or ruling or as needed:
Include here additional information as required by Commission decision or ruling (As applicable. Indicate decision or ruling and page numbers):

ON-BILL FINANCING - ATTACHMENT 1

Program Non-Energy Objectives

For New or Substantially changed programs and sub-programs, provide the following information for Program Non-Energy Objectives and follow the format used for the previous cycle Program Performance Metrics found in Resolution E-4385.

i. List the primary SMART[9] non-energy objectives of the program. These should correspond to key methods identified above to overcome the market barriers, areas of concern or gaps, and to the outputs and short, mid- and long-term non-energy outcomes identified in the logic model requested below. **(Rough Estimate, If Possible)**

   Track OBF project and loan performance data to contribute to the financing-related project performance and repayment database.

ii. For each SMART objective, identify the quantitative targets, direction or percent of change that you hope to achieve during the program cycle.[10] **(Rough Estimate, If Possible)**

   TBD

iii. For each proposed SMART objective, describe any relevant baseline data on current market conditions that you have assembled or plan to assemble and the sources. **(Rough Estimate, If Possible)**

   TBD

iv. **Quantitative program targets (PPMs) (Rough Estimate, If Possible):** If not already provided above, indicate estimates of the number of measure units, buildings, etc. projected to be treated by the sub-program.

---

[9] A SMART objective is one that is **S**pecific (i.e. quantitative and quantifiable generally, in terms of the results to be achieved**),** **M**easurable, **A**mbitious, **R**ealistic, and **T**ime-bound. For example, for a vender training component of an innovative commercial program, two SMART mid-term objectives and one long-term objective might be:

a) During the period 2013-2014, the number of HVAC installers in the SCE service territory who are able to perform quality installations of energy efficient packaged air conditioners will increase by 20%.
b) During the period 2013-2014, the number of installations of energy efficient packaged air conditions in the SCE service territory that are considered quality installations will increase by 25%.
c) By 2020, installations of energy efficient packaged air conditions in the SCE service territory that are considered quality installations will increase by 75%.

[10] Please also add any new program objectives and quantitative targets for statewide programs to the portfolio PPM/MTI reporting template.

Table 3. Quantitative Program Targets (PPMs)

See Table 3 in Attachment 2.

2013-2014 Energy Efficiency Programs
Statewide Finance Program
Program Implementation Plan

Sub-Program

1) **Sub-Program Name:** American Recovery and Reinvestment Act (ARRA) Originated Financing Programs
2) **Sub-Program ID number:** SCG3736
3) **Type of Sub-Program:** _X_ Core __Third Party __Partnership
4) **Market sector or segment that this sub-program is designed to serve[11]:**

    a. _X_ Residential
        i. Including Low Income? _X_ Yes __ No;
        ii. Including Moderate Income? _X_ Yes __ No.
        iii. Including or specifically Multifamily buildings _X_ Yes __ No.
        iv. Including or specifically Rental units? _X_ Yes __ No.
    b. _X_ Commercial (List applicable NAIC codes: ____TBD_____)
    c. _X_ Industrial (List applicable NAIC codes: _____TBD_____)
    d. _X_ Agricultural (List applicable NAIC codes: _____TBD_____)

5) **Is this sub-program primarily a:**
    a. Non-resource program ___ Yes_X_ No
    b. Resource acquisition program _X_ Yes ___ No
    c. Market Transformation Program ___ Yes _X__ No

6) **Indicate the primary intervention strategies:**

    a. Upstream ___ Yes __X_ No
    b. Midstream ___ Yes _X__ No
    c. Downstream _X__ Yes ___ No
    d. Direct Install __ Yes _X_ No.
    e. Non Resource __ Yes _X_ No.

7) **Projected Sub-program Total Resource Cost (TRC) and Program Administrator Cost (PAC) (Rough Estimate, If Possible)** TRC ___ PAC ___

    TBD

8) **Projected Sub-Program Budget**

    Table 3. Projected Sub-Program Budget, by Calendar Year (Rough Estimate, If Possible – Components may need to be modified for financing) [12]

[11] Check all that apply
[12] Individual utility specific information to be provided in this table

	Program Year		
ARRA-originated Financing Programs	**2013**	**2014**	**Total**
IOU Admin-Oversight of ARRA Continuation Programs ($)	TBD	TBD	TBD
IOU General overhead ($)	TBD	TBD	TBD
ARRA Finance Product Funding ($)	TBD	TBD	TBD
ARRA Program Administrator Funding-Admin, Mkting, and Development ($)	TBD	TBD	TBD
Total Budget ($)	$2,000,000	$2,000,000	$4,000,000

9) Sub-Program Description, Objectives and Theory

a) **Sub-Program Description and Theory:** Clearly describe the goals of the sub-program and the sub-program theory. As part of this, describe the market barriers, specific areas of concern and/or gaps that the sub-program is designed to address. Then describe the way the sub-program will seek to address each barrier, area of concern or gap[13] (suggested work limit: 600 words per subprogram).

The utilities will set aside a specific amount of funding and required administrative support for continuing and augmenting previously ARRA-funded programs that can help establish California energy project and loan performance records. Selected programs will be evaluated against success criteria, as set forth in Section 5.3.2 (p.112 and 113) of the Decision and IOUs' developed criteria:

1. Administrative funding (target<10%) versus Finance Product funding
2. Coordination with and enhancement of utility Whole House programs to increase customer participation
3. Demonstrated ability to serve eligible IOU customers
4. Minimal duplication of same or similar finance products within the same geographic area

[13] Through marketing, delivery mechanisms, information, incentives, etc. If barriers vary by market sub-sector, provide this information. As part of this, succinctly describe the role of any market actors upstream from the customer such as installers, venders, architects, etc.; indicate if and why the program approach constitutes "best practice," is "innovative" or reflects "lessons learned" in market strategies, program design and/or implementation techniques.

As the IOUs have communicated and met with ARRA Finance Program funding recipients, it is evident that there are different needs among current ARRA Finance Program participants. For example:

1. Some wish to continue existing programs,
2. Some wish to modify existing programs, or
3. Some wish to apply remaining or available resources to enhanced or proposed programs.

In many cases, ARRA Finance Program recipients have not exhausted initial ARRA funding, but seeking additional funding to leverage or enhance current ARRA-funded programs. In the IOUs' evaluation of successful ARRA Finance programs, they are considering all requests for ARRA Finance Program continuation and evaluating these against CPUC success criteria and IOU criteria.

The primary goal of this subprogram is to continue developing loan and project performance data and experience to share with larger capital market players to ensure their confidence in both debt repayment behavior and the cash flow profile of energy savings associated with the projects

For 2012, the utilities will commit $5-$10 Million to selected ARRA Finance programs no later than August 1, 2012.

b) **Sub-Program Energy and Demand Objectives**- If this sub-program has energy and demand objective, please complete Table 2.

Table 4. Projected Sub-Program Net Energy and Demand Impacts, by Calendar Year (Rough Estimate, If Possible) [14]

Program #	Main/Sub Program Name	Administrative Amount	Marketing Amount	Direct Implementation Amount	Incentive Amount	Total Program Budget Amount
	SW Finance Program					
3736	SW-FIN-ARRA-Originated Financing	$0	$0	$4,000,000	$0	$4,000,000

It is not feasible to develop energy savings for these programs as IOUs have no experience with these program elements. Additionally, it is assumed that a number of the measures to be installed may not be eligible for a rebate/incentive and therefore will need to be treated as "custom measures."

[14] Individual utility specific information to be provided in this table

c) **Program Non-Energy Objectives**:

Continue developing loan and project performance data and experience to share with larger capital market players to ensure their confidence in both debt repayment behavior and the cash flow profile of energy savings associated with the projects.

d) **Cost Effectiveness/Market Need**: What methods will be or have been used to determine whether this program is cost-effective?[15] If this is a non-resource program, describe the literature, market assessments or other sources that indicate a need for this program.

The methods contained in the Standard Practice Manual will be used.

e) **Measure Savings/ Work Papers (Rough Estimate, If Possible)**: Measure level impacts to be developed upon completion of ARRA program selection and finalization of energy savings estimation evaluation criteria for Finance Programs.

a. Indicate data source for savings estimates for program measures (DEER, custom measures, etc).

CPUC approved measures as set forth in DEER, and CPUC approved customized and deemed measures, and other eligible measures, as designated by the CPUC.

b. Indicate work paper status for program measures:

Table 4 – Work paper Status

See Table 4 in Attachment 2.

10) Program Implementation Details

a) **Timelines:** List the key program milestones and dates. An example is included below.

[15] If the program has energy and demand objectives, simply state that the methods contained in the Standard Practice Manual will be used. If the program does not have energy and demand objective, propose an approach to assess cost-effectiveness.

Table 5: Sub-Program Milestones and Timeline (example)

Milestone	Date
Commitment of $5-$10 Million to Selected ARRA Finance Programs	August 2012
Research and Evaluation of ARRA Program Funding Continuation for 2013 and 2014	June-July 2012
Selection of Specific ARRA Program Funding Continuation and Amounts for 2013-2014	August-Sept 2012
Commitment of Budgeted 2013-2014 ARRA Finance Continuation funding completed	No Later than December 2012
Funding of ARRA-Originated Finance Programs	January 2013-December 2014

Table 5: Sub-Program Milestones and Timeline (example)

b) Geographic Scope: List the geographic regions (e.g., CEC weather zones) where the program will operate

To be determined based upon ARRA program selection.

Table 6: Geographic Regions Where the Program Will Operate

c) Program Administration

Table 7: Program Administration of Program Components (Rough Estimate, If Possible) (TBD)

See Table 7 in Attachment 2.

d) Program Eligibility Requirements (TBD) :

i. Customers: List any customer eligibility requirements (e.g., annual energy use, peak kW demand) **(TBD)**:

Table 8: Customer Eligibility Requirements (Joint Utility Table) (TBD)

See Table 8 in Attachment 2.

ii. Contractors/Participants: List any contractor (and/or developer, manufacturer, retailer or other "participant") eligibility requirements (e.g. specific IOU required trainings; specific contractor accreditations; and/or, specific technician certifications required). **(TBD)**

Table 9: Contractor/Participant Eligibility Requirements (Joint Utility Table) (TBD)

See Table 9 in Attachment 2.

e) Program Partners (TBD):

Local Governments, Non-Government Organizations (NGO's), and private sector ARRA program administrators.

a. **Manufacturer/Retailer/Distributor partners:** For upstream or midstream incentive and/or buy down programs indicate[16]: **(TBD)**

Table 10: Manufacturer/Retailer/Distributor Partners (N/A)

See Table 10 in Attachment 2.

b. **Other key program partners**: Indicate any research or other key program partners:

Selected Expert Finance Consultant.

f) Measures and incentive levels: E3 calculators will provide the list of measures and incentive levels to be provided via the program. In this section the utilities should provide a summary table of measures and incentive levels. **(Rough Estimate, If Possible)**

Energy and Demand Impacts and underlying measure estimates to be developed upon completion of ARRA program selection and finalization of energy savings estimation evaluation criteria for Finance Programs.

Table 11: Summary Table of Measures, Incentive Levels and Verification Rates (Rough Estimate, If Possible)

See Table 11 in Attachment 2.

a. Use a single excel spreadsheet to indicate the eligible measures for the program across all IOUs. Indicate the expected incentive level by measure or measure grouping for each IOU, making clear where these vary. **(Rough Estimate, If Possible)**

b. For each incented or rebated measure, indicate the market actor to whom this will be provided. **(Rough Estimate, If Possible)**

[16] Provide in a consistent format for all IOUs. Indicate program partners across all IOU territories in one table or spreadsheet. Append to end of PIP.

g) **Additional Services:** List additional services that the sub-program will provide, to which market actors.

a. For each service provided, indicate any expected charges to market actors of the services, and/or the level at which any such services will be incented or funded.

To be determined based upon ARRA program selection.

Table 12: Additional Services

See Table 12 in Attachment 2.

h) **Sub-Program Specific Marketing and Outreach:** Please describe, providing timelines (suggested word limit: 300 words)

To be determined based upon ARRA Program Selection and to be performed by ARRA Program Administrator.

i) **Sub-Program Specific Training:** Please describe, providing timelines (suggested word limit: 300 words)

To be determined based upon ARRA Program Selection and to be performed by ARRA Program Administrator.

j) **Sub-Program Software and/or Additional Tools:**

To be determined based upon ARRA Program Selection and to be performed by ARRA Program Administrator.

a. List all eligible software or similar tools required for sub-program participation. **(Rough Estimate, If Possible)**
b. Indicate if pre and/or post implementation audits will be required for the sub-program. ___ Yes ___ No **(TBD)**
   Pre-implementation audit required ___ Yes ___ No
   Post-implementation audit required ___ Yes ___ No
c. As applicable, indicate levels at which such audits shall be rebated or funded, and to whom such rebates/funding will be provided (i.e. to customer or contractor). **(Rough Estimate, If Possible)**

Table 13: Post-implementation Audits (Rough Estimate, If Possible)

To be determined based upon ARRA program selection and to be performed by ARRA Program Administrator.

See Table 13 in Attachment 2.

k) Sub-Program Quality Assurance Provisions: Please list quality assurance, quality control, including accreditations/certification or other credentials **(TBD)**

Table 14: Quality Assurance Provisions (TBD)

See Table 14 in Attachment 2.

l) Sub-program Delivery Method and Measure Installation /Marketing or Training: Briefly describe any additional sub-program delivery and measure installation and/or marketing & outreach, training and/or other services provided, if not yet described above.

To be determined based upon ARRA Program Selection and to be performed by ARRA Program Administrator.

m) Sub-program Process Flow Chart: Provide a sub-program process flow chart that describes the administrative and procedural components of the sub-program. For example, the flow chart might describe a customer's submittal of an application, the screening of the application, the approval/disapproval of an application, verification of purchase or installation, the processing and payment of incentives, and any quality control activities. **(TBD)**

n) Cross-cutting Sub-program and Non-IOU Partner Coordination: Indicate other IOU EE, DR or DG sub-programs with which this sub-program will regularly coordinate. Indicate also key non-IOU coordination partners. Indicate expected coordination mechanisms[17] and frequency[18]: **(Rough Estimate, If Possible)**

Table 15: Cross-cutting Sub-program and Non-IOU Partner Coordination (TBD)

See Table 15 in Attachment 2.

o) Logic Model: Please append the logic model for this sub-program to the end of this PIP. Describe here any additional underlying theory supporting the sub-program intervention approach, referring as needed to the relevant literature (e.g., past evaluations, best practices documents, journal articles, books, etc.). **(TBD)**

[17] "Mechanisms" refers to communication methods (i.e. quarterly meetings; internal list serves; monthly calls, etc.) and/or any cross-program review methods (i.e., feedback on program plans; sign off on policies, etc). or harmonization techniques (i.e. consistent certification requirements across programs, program participant required cross trainings, etc).
[18] This does not mean there would be mutual understanding of the on the mechanism or a known frequency of coordination; rather, just provide enough information to give a general sense of the coordinate efforts.

11) Additional Sub-Program Information

a) **Advancing Strategic Plan Goals and Objectives**: Describe how sub-program advances the goals, strategies and objectives of the California Long Term Energy Efficiency Strategic Plan (word limit: 150 words)

b) Integration (TBD)

i. **Integrated/coordinated Demand Side Management**: As applicable, describe how sub-program will promote customer education and sub-program participation across all DSM options. Provide budget information of non-EE sub-programs where applicable. **(TBD)**

Table 16: Non-EE Sub-Program Information (TBD)

See Table 16 in Attachment 2.

ii. **Integration across resource types** (energy, water, air quality, etc): If sub-program aims to integrate across resources types, please provide rationale and general approach. **(TBD)**

See Table 16 in Attachment 2.

c) **Leveraging of Resources**: Please describe if the subprogram will leverage additional investments by market actors or other state, local or federal agencies. **(TBD)**

d) **Trials/ Pilots:** Please describe any trials or pilot projects planned for this sub-program **(TBD)**

e) **Knowledge Transfer:** Describe the strategy that will be used to identify and disseminate best practices and lessons learned from this sub-program **(TBD)**

12) Market Transformation Information: For programs identified as market transformation programs, include the following (suggested page limit- five pages): Not a Market Transformation Program

i. A summary of the market transformation objectives of the program. **(TBD)**
ii. A description of the market, including identification of the relevant market actors and the relationships among them; **(TBD)**

iii. A market characterization and assessment of the relationships/dynamics among market actors, including identification of the key barriers and opportunities to advance demand side management technologies; **(TBD)**

iv. A description of the proposed intervention(s) and its/their intended results, and specify which barriers the intervention is intended to address; **(TBD)**

v. A coherent program, or "market," logic model that ensures a solid causal relationship between the proposed intervention(s) and its/their intended results[19]; **(TBD)**

vi. Appropriate evaluation plans and corresponding Market Transformation indicators and Program Performance Metrics based on the program logic model. **(TBD)**

13) Additional information as required by Commission decision or ruling or as needed:
Include here additional information as required by Commission decision or ruling (As applicable. Indicate decision or ruling and page numbers):

[19] If this logic model is the same as that requested in #10.(O), only provide once. As needed, provide a more detailed logic model emphasizing the market transformation elements of the program and/or how such elements integrate with resource acquisition elements.

ARRA-ORIGINATED FINANCING - ATTACHMENT 1

Program Non-Energy Objectives

For New or Substantially changed programs and sub-programs, provide the following information for Program Non-Energy Objectives and follow the format used for the previous cycle Program Performance Metrics found in Resolution E-4385.

i. List the primary SMART[20] non-energy objectives of the program. These should correspond to key methods identified above to overcome the market barriers, areas of concern or gaps, and to the outputs and short, mid- and long-term non-energy outcomes identified in the logic model requested below. **(Rough Estimate, If Possible)**

TBD

ii. For each SMART objective, identify the quantitative targets, direction or percent of change that you hope to achieve during the program cycle.[21] **(Rough Estimate, If Possible)**

TBD

iii. For each proposed SMART objective, describe any relevant baseline data on current market conditions that you have assembled or plan to assemble and the sources. **(Rough Estimate, If Possible)**

TBD

iv. **Quantitative program targets (PPMs) (Rough Estimate, If Possible):** If not already provided above, indicate estimates of the number of measure units, buildings, etc. projected to be treated by the sub-program.

Table 3. Quantitative Program Targets (PPMs)

See Table 3 in Attachment 2.

[20] A SMART objective is one that is **S**pecific (i.e. quantitative and quantifiable generally, in terms of the results to be achieved**), M**easurable, **A**mbitious, **R**ealistic, and **T**ime-bound. For example, for a vender training component of an innovative commercial program, two SMART mid-term objectives and one long-term objective might be:

d) During the period 2013-2014, the number of HVAC installers in the SCE service territory who are able to perform quality installations of energy efficient packaged air conditioners will increase by 20%.
e) During the period 2013-2014, the number of installations of energy efficient packaged air conditions in the SCE service territory that are considered quality installations will increase by 25%.
f) By 2020, installations of energy efficient packaged air conditions in the SCE service territory that are considered quality installations will increase by 75%.

[21] Please also add any new program objectives and quantitative targets for statewide programs to the portfolio PPM/MTI reporting template.

Sub-Program

1) **Sub-Program Name:** New Financing Offerings
2) **Sub-Program ID number:** SCG3737
3) **Type of Sub-Program:** _X_ Core __Third Party __Partnership
4) **Market sector or segment that this sub-program is designed to serve[22]:**

    a. _X_ Residential
        i. Including Low Income? _X_ Yes __ No;
        ii. Including Moderate Income? _X_ Yes __ No.
        iii. Including or specifically Multifamily buildings _X_ Yes __ No.
        iv. Including or specifically Rental units? _X_ Yes __ No.
    b. _X_ Commercial (List applicable NAIC codes: _____)
    c. _X_ Industrial (List applicable NAIC codes: _____)
    d. _X_ Agricultural (List applicable NAIC codes: _____)

5) **Is this sub-program primarily a:**
    a. Non-resource program ___ Yes_X_ No
    b. Resource acquisition program _X_ Yes ___ No
    c. Market Transformation Program ___ Yes _X_ No

6) **Indicate the primary intervention strategies:**

    a. Upstream ___ Yes _X_ No
    b. Midstream ___Yes _X_ No
    c. Downstream _X_ Yes ___ No
    d. Direct Install ___ Yes _X_ No
    e. Non Resource ___ Yes _X_ No

7) **Projected Sub-program Total Resource Cost (TRC) and Program Administrator Cost (PAC) (Rough Estimate, If Possible)** TRC ___ PAC ___

    TBD

8) **Projected Sub-Program Budget**

    Table 5. Projected Sub-Program Budget, by Calendar Year (Rough Estimate, If Possible – Components may need to be modified for financing) [23]

[22] Check all that apply
[23] Individual utility specific information to be provided in this table

	Program Year		
New Financing Offerings	**2013**	**2014**	**Total**
Admin ($)	TBD	TBD	TBD
General Overhead ($)	TBD	TBD	TBD
Loan Funding Implementation ($)	TBD	TBD	TBD
Marketing & Outreach ($)	TBD	TBD	TBD
Education & Training ($)	TBD	TBD	TBD
Total Budget ($)	$5,223,811.00	$5,223,811.00	$10,467,622.00

9) Sub-Program Description, Objectives and Theory

a) **Sub-Program Description and Theory:** Clearly describe the goals of the sub-program and the sub-program theory. As part of this, describe the market barriers, specific areas of concern and/or gaps that the sub-program is designed to address. Then describe the way the sub-program will seek to address each barrier, area of concern or gap[24] (suggested work limit: 600 words per subprogram).

The new financing program offerings to be designed and developed in 2012 by the expert financing consultant; piloted in 2013; and scaled up in 2014 include:

1. A credit enhancement strategy for the single-family residential market. Utilities will look into selecting a single entity that can be utilized by both local and statewide lenders to administer credit enhancements. A single entity can offer consistency across the State and gain economies of scale of its operations. Entities such as CAEATFA or other organizations with similar capabilities and experiences will be considered for this role. Unlike for multifamily and non residential customer segments, an On-Bill Repayment (OBR) strategy will not be developed for all residential customers at this point per Commission's guidance.

2. A financing program strategy designed specifically for the multifamily residential market that includes both credit enhancement and an on-bill repayment option where the customer could pay back an energy efficiency project loan from a third party through their energy bill. This strategy may require legislative change to fully implement. The program' structure or terms may vary in order to attract customers and

[24] Through marketing, delivery mechanisms, information, incentives, etc. If barriers vary by market sub-sector, provide this information. As part of this, succinctly describe the role of any market actors upstream from the customer such as installers, venders, architects, etc.; indicate if and why the program approach constitutes "best practice," is "innovative" or reflects "lessons learned" in market strategies, program design and/or implementation techniques.

building owners from both a) low-moderate income and b) moderate-high income multifamily residential market segments. Per Commission's guidance, the utilities along with the expert finance consultant will explore the following program design features:

- Start with a bill neutrality objective, at least for credit challenged or lower-income populations.
- Consider an additional cushion beyond bill neutrality to minimize potential negative impact on consumers.
- Seek to structure loans and eligible measures to give the owner at least an 11% return.
- Start with placing the loan obligations on common meters.
- Identify specific waivers and/or clearance required from the California Department of Corporations for lending to this market segment.
- Consider possible tariffed service utilizing private capital.
- Seek to marry the energy efficiency loan opportunity with solving another problem (such as equipment malfunction, safety, health).
- Seek to pair the energy efficiency measure with a home equity loan.
- For multifamily market-rate rental housing, credit enhancement may be necessary to drive participation.
- Offer (and test) with a variety of multifamily types, including high rises and low rises, condos and rentals, and different physical configurations (central vs. individual building systems).

3. A credit enhancement strategy for the small business market. Similar to the single family residential market, credit enhancement for small business market segment may be provided or aggregated by a third-party such as CAEATFA or a similar type of entity.

4. An on-bill repayment strategy for all non-residential customers. Bill neutrality will not be required, however, an estimate of the bill impacts of the energy efficiency project to be financed will be presented to the customer at the time they are making the commitment to the project, thus ensures an informed decision by the customer without a strict requirement for bill neutrality. Partial payments will be allocated between utility bill obligations and loan repayment on a pro rata basis.

In addition, utilities, the expert financing consultant, and a working group convened by the consultant, will develop or contribute to a larger-scale database or databases of financing related data and information that can be shared publicly after appropriately masking individual customer confidential information.

b) **Sub-Program Energy and Demand Objectives**- If this sub-program has energy and demand objective, please complete Table 2.

Table 6. Projected Sub-Program Net Energy and Demand Impacts, by Calendar Year (Rough Estimate, If Possible) [25]

Program #	Main/Sub Program Name	Administrative Amount	Marketing Amount	Direct Implementation Amount	Incentive Amount	Total Program Budget Amount
	SW Finance Program					
3737	SW-FIN-New Financing Offerings	$0	$0	$10,467,622	$0	$10,467,622

It is not feasible to develop energy savings for these programs as IOUs have no experience with these program elements. Additionally, it is assumed that a number of the measures to be installed may not be eligible for a rebate/incentive and therefore will need to be treated as "custom measures."

c) **Program Non-Energy Objectives**:

TBD

d) **Cost Effectiveness/Market Need**: What methods will be or have been used to determine whether this program is cost-effective?[26] If this is a non-resource program, describe the literature, market assessments or other sources that indicate a need for this program.

The methods contained in the Standard Practice Manual will be used.

e) **Measure Savings/Work Papers (Rough Estimate, If Possible)**:

a. Indicate data source for savings estimates for program measures (DEER, custom measures, etc).

b. Indicate work paper status for program measures:

Table 4 – Work paper Status

See Table 3 in Attachment 2.

10) Program Implementation Details

a) **Timelines:** List the key program milestones and dates. An example is included below.

Table 5:. Sub-Program Milestones and Timeline (example)

[25] Individual utility specific information to be provided in this table
[26] If the program has energy and demand objectives, simply state that the methods contained in the Standard Practice Manual will be used. If the program does not have energy and demand objective, propose an approach to assess cost-effectiveness.

b) **Geographic Scope**: List the geographic regions (e.g., CEC weather zones) where the program will operate

Table 6: Geographic Regions Where the Program Will Operate –

c) **Program Administration**

Table 7: Program Administration of Program Components (Rough Estimate, If Possible) (TBD)

See Table 7 in Attachment 1.

d) **Program Eligibility Requirements (TBD) :**

i. Customers: List any customer eligibility requirements (e.g., annual energy use, peak kW demand) **(TBD)**:

Table 8: Customer Eligibility Requirements (Joint Utility Table) (TBD)

See Table 8 in Attachment 2.

ii. Contractors/Participants: List any contractor (and/or developer, manufacturer, retailer or other "participant") eligibility requirements (e.g. specific IOU required trainings; specific contractor accreditations; and/or, specific technician certifications required). **(TBD)**

Table 9: Contractor/Participant Eligibility Requirements (Joint Utility Table) (TBD)

See Table 9 in Attachment 2.

e) **Program Partners (TBD):**

a. **Manufacturer/Retailer/Distributor partners:** For upstream or midstream incentive and/or buy down programs indicate[27]: **(TBD)**

Table 10: Manufacturer/Retailer/Distributor Partners (N/A)

See Table 10 in Attachment 2.

[27] Provide in a consistent format for all IOUs. Indicate program partners across all IOU territories in one table or spreadsheet. Append to end of PIP.

b. **Other key program partners**: Indicate any research or other key program partners:

f) **Measures and incentive levels**: E3 calculators will provide the list of measures and incentive levels to be provided via the program. In this section the utilities should provide a summary table of measures and incentive levels. **(Rough Estimate, If Possible)**

Table 11: Summary Table of Measures, Incentive Levels and Verification Rates (Rough Estimate, If Possible)

See Table 11 in Attachment 2.

a. Use a single excel spreadsheet to indicate the eligible measures for the program across all IOUs. Indicate the expected incentive level by measure or measure grouping for each IOU, making clear where these vary. **(Rough Estimate, If Possible)**
b. For each incented or rebated measure, indicate the market actor to whom this will be provided. **(Rough Estimate, If Possible)**

g) **Additional Services:** List additional services that the sub-program will provide, to which market actors.

a. For each service provided, indicate any expected charges to market actors of the services, and/or the level at which any such services will be incented or funded.

Table 12: Additional Services

See Table 12 in Attachment 2.

h) **Sub-Program Specific Marketing and Outreach:** Please describe, providing timelines (suggested word limit: 300 words)

i) **Sub-Program Specific Training:** Please describe, providing timelines (suggested word limit: 300 words)

j) **Sub-Program Software and/or Additional Tools:**

a. List all eligible software or similar tools required for sub-program participation. **(Rough Estimate, If Possible)**
b. Indicate if pre and/or post implementation audits will be required for the sub-program. ___ Yes ___ No **(TBD)**
Pre-implementation audit required ___ Yes ___ No
Post-implementation audit required ___ Yes ___ No

c. As applicable, indicate levels at which such audits shall be rebated or funded, and to whom such rebates/funding will be provided (i.e. to customer or contractor). **(Rough Estimate, If Possible)**

Table 13: Post-implementation Audits (Rough Estimate, If Possible)

See Table 13 in Attachment 2.

k) **Sub-Program Quality Assurance Provisions:** Please list quality assurance, quality control, including accreditations/certification or other credentials **(TBD)**

Table 14: Quality Assurance Provisions (TBD)

See Table 14 in Attachment 2.

l) **Sub-program Delivery Method and Measure Installation/Marketing or Training:** Briefly describe any additional sub-program delivery and measure installation and/or marketing & outreach, training and/or other services provided, if not yet described above.

m) **Sub-program Process Flow Chart:** Provide a sub-program process flow chart that describes the administrative and procedural components of the sub-program. For example, the flow chart might describe a customer's submittal of an application, the screening of the application, the approval/disapproval of an application, verification of purchase or installation, the processing and payment of incentives, and any quality control activities. **(TBD)**

n) **Cross-cutting Sub-program and Non-IOU Partner Coordination:** Indicate other IOU EE, DR or DG sub-programs with which this sub-program will regularly coordinate. Indicate also key non-IOU coordination partners. Indicate expected coordination mechanisms[28] and frequency[29]: **(Rough Estimate, If Possible)**

Table 15: Cross-cutting Sub-program and Non-IOU Partner Coordination (TBD)

See Table 15 in Attachment 2.

[28] "Mechanisms" refers to communication methods (i.e. quarterly meetings; internal list serves; monthly calls, etc.) and/or any cross-program review methods (i.e., feedback on program plans; sign off on policies, etc). or harmonization techniques (i.e. consistent certification requirements across programs, program participant required cross trainings, etc).

[29] This does not mean there would be mutual understanding of the on the mechanism or a known frequency of coordination; rather, just provide enough information to give a general sense of the coordinate efforts.

o) **Logic Model:** Please append the logic model for this sub-program to the end of this PIP. Describe here any additional underlying theory supporting the sub-program intervention approach, referring as needed to the relevant literature (e.g., past evaluations, best practices documents, journal articles, books, etc.). **(TBD)**

11) Additional Sub-Program Information

a) **Advancing Strategic Plan Goals and Objectives**: Describe how sub-program advances the goals, strategies and objectives of the California Long Term Energy Efficiency Strategic Plan (word limit: 150 words)

b) Integration (TBD)

i. **Integrated/coordinated Demand Side Management**: As applicable, describe how sub-program will promote customer education and sub-program participation across all DSM options. Provide budget information of non-EE sub-programs where applicable. **(TBD)**

Table 16: Non-EE Sub-Program Information (TBD)

TBD - See Table 16 in Attachment 2.

ii. **Integration across resource types** (energy, water, air quality, etc): If sub-program aims to integrate across resources types, please provide rationale and general approach. **(TBD)**

TBD - See Table 16 in Attachment 2.

c) **Leveraging of Resources**: Please describe if the subprogram will leverage additional investments by market actors or other state, local or federal agencies. **(TBD)**

d) **Trials/ Pilots:** Please describe any trials or pilot projects planned for this sub-program **(TBD)**

e) **Knowledge Transfer:** Describe the strategy that will be used to identify and disseminate best practices and lessons learned from this sub-program **(TBD)**

12) **Market Transformation Information**: For programs identified as market transformation programs, include the following (suggested page limit- five pages): **(TBD)**

i. A summary of the market transformation objectives of the program. **(TBD)**
ii. A description of the market, including identification of the relevant market actors and the relationships among them; **(TBD)**

iii. A market characterization and assessment of the relationships/dynamics among market actors, including identification of the key barriers and opportunities to advance demand side management technologies and strategies; **(TBD)**

iv. A description of the proposed intervention(s) and its/their intended results, and specify which barriers the intervention is intended to address; **(TBD)**

v. A coherent program, or "market," logic model that ensures a solid causal relationship between the proposed intervention(s) and its/their intended results[30]; **(TBD)**

vi. Appropriate evaluation plans and corresponding Market Transformation indicators and Program Performance Metrics based on the program logic model. **(TBD)**

13) **Additional information as required by Commission decision or ruling or as needed:** Include here additional information as required by Commission decision or ruling (As applicable. Indicate decision or ruling and page numbers):

Decision 12-05-015

- The utilities are requested to propose for the credit enhancement product in their 2013-2014 portfolio applications with discussion of the preferred options and rationale". (p.119)

  The loan loss reserve is the preferred credit enhancement option proposed by the utilities. With the loan loss reserve, funds are required only to cover actual loan defaults and therefore a more effective use of ratepayer funding (as opposed to interest rate buy-downs which require funding to offset every loan). However, if there is no interest in the product, the utilities will explore other alternatives.

- The question of multiple program participation should be addressed in the utility 2013-2014 applications (p.130)

  A single project cannot receive funds from more than one loan program supported by ratepayer dollars. A clear and understandable menu of financing choices available to utility customers through the Statewide Finance Program should be developed to help interested customers select the option best suited for their projects. The utilities will train the contractors/account executives on these financing options in order to assist customers seeking financing for their investment in demand-side technologies (energy efficiency, demand response, distributed generation, and storage).

- In their 2013-2014 program portfolio applications, the utilities should also provide details on the billing system upgrades and/or other information technology costs that

[30] If this logic model is the same as that requested in #10.(O), only provide once. As needed, provide a more detailed logic model emphasizing the market transformation elements of the program and/or how such elements integrate with resource acquisition elements.

may be associated with an on-bill repayment offering for the non-residential market (P. 133)

The preliminary cost estimate for upgrading **SoCalGas'** billing system to support Non Residential OBR is about **$700,000.** As the design for the new finance programs are completed, there may be refinement to this cost estimate.

- Utilities should propose a fee mechanism to negotiate with participating lenders or other financial entities that allows utilities to cover the costs of any ongoing billing expenses and infrastructure upgrades to provide the on-bill repayment service. (p.133)

  The utilities propose an OBR fee mechanism similar to that for the utility's Line Item Billing Program. The preliminary fee structure will likely include:

  - Fixed monthly billing fee per customer for providing the billing and remittance processing services, and associated reports and customer service.
  - Upfront payment to cover start up costs (system changes, project management) to support lender processes.
  - Reimbursement for costs associated with incremental Customer Service Support.

- The utilities should include in their applications a discussion of the relationship of the on-bill repayment offering with existing utility programs and their associated rebates or other financial incentives (p.133)

  The utilities propose that on-bill repayment to be offered as an alternative to utility rebates/incentives to maximize portfolio cost effectiveness. Per Commission guidance, bill neutrality will not be required for non residential OBR projects and therefore it will not be as difficult for gas-only projects to qualify for OBR loans. Additionally, not all measures in an OBR project have to be part of another utility rebate/incentive program, how much of a total project must be eligible for other incentive programs will be determined during the program design stage in 2012.

- Utilities should propose in their 2013-2014 program applications an approach for counting incremental energy savings achieved by financing program offerings while avoiding double counting with savings from other programs (p.136)

  With on-bill repayment expected to be offered as an alternative to rebates/incentives, and that financing programs are defined as "resource," incremental energy savings associated with OBR projects will be counted toward OBR programs and not rebate/incentive programs.

NEW FINANCING OFFERINGS -ATTACHMENT 1

Program Non-Energy Objectives

For New or Substantially changed programs and sub-programs, provide the following information for Program Non-Energy Objectives and follow the format used for the previous cycle Program Performance Metrics found in Resolution E-4385.

i. List the primary SMART[31] non-energy objectives of the program. These should correspond to key methods identified above to overcome the market barriers, areas of concern or gaps, and to the outputs and short, mid- and long-term non-energy outcomes identified in the logic model requested below. **(Rough Estimate, If Possible)**

TBD

ii. For each SMART objective, identify the quantitative targets, direction or percent of change that you hope to achieve during the program cycle.[32] **(Rough Estimate, If Possible)**

TBD

iii. For each proposed SMART objective, describe any relevant baseline data on current market conditions that you have assembled or plan to assemble and the sources. **(Rough Estimate, If Possible)**

TBD

iv. **Quantitative program targets (PPMs) (Rough Estimate, If Possible):** If not already provided above, indicate estimates of the number of measure units, buildings, etc. projected to be treated by the sub-program.

See Table 3. Quantitative Program Targets (PPMs)

See Table 3 in Attachment 2.

---

[31] A SMART objective is one that is **S**pecific (i.e. quantitative and quantifiable generally, in terms of the results to be achieved**),** **M**easurable, **A**mbitious, **R**ealistic, and **T**ime-bound. For example, for a vender training component of an innovative commercial program, two SMART mid-term objectives and one long-term objective might be:

g) During the period 2013-2014, the number of HVAC installers in the SCE service territory who are able to perform quality installations of energy efficient packaged air conditioners will increase by 20%.

h) During the period 2013-2014, the number of installations of energy efficient packaged air conditions in the SCE service territory that are considered quality installations will increase by 25%.

i) By 2020, installations of energy efficient packaged air conditions in the SCE service territory that are considered quality installations will increase by 75%.

[32] Please also add any new program objectives and quantitative targets for statewide programs to the portfolio PPM/MTI reporting template.

Statewide Finance Program
Attachment 2

Table 1: Total Projected Program Budget & Savings by Subprogram

Subprogram	PG&E ($)	SCE ($)	SDG&E ($)	SCG ($)	Kwh	KW	Therms
OBF				$1,727,378	0	0	750,001
ARRA-Originated Financing				$4,000,000	TBD	TBD	TBD
New Financing Offerings				$10,467,622	TBD	TBD	TBD
Total				$16,195,000	0	0	750,001

Table 2: Total Projected Program Savings by IOU

Subprogram	PG&E Kwh	PG&E KW	PG&E Therms	SCE Kwh	SCE KW	SDG&E Kwh	SDG&E KW	SDG&E Therms	SCG Therms	Total
OBF									750,001	
ARRA-Originated Financing									TBD	
New Financing Offerings									TBD	
Total									750,001	

Table 1. Projected Sub-Program Budget, by Calendar Year

	Program Year		
On-Bill Financing	**2013**	**2014**	**Total**
Admin ($)	$26,110.32	$26,110.32	$52,220.64
General Overhead ($)	$29,223.29	$29,223.29	$58,446.58
Loan Funding Implementation($)	$513,109.01	$513,109.01	$1,026,218.02
Marketing & Outreach ($)	$36,596.38	$36,596.38	$73,192.76
Education & Training ($)	$8,650.00	$8,650.00	$17,300.00
Total Budget ($)	$613,689.00	$613,689.00	$1,227,378.00

Individual utility specific information to be provided in this table

Table 2. Projected Sub-Program Net Energy and Demand Impacts, by Calendar Year

	Program Years		
	2013	2014	Total
OBF			
GWh	0	0	0
Peak MW	0	0	0
Therms (millions)	0.375	0.375	0.75

Individual utility specific information to be provided in this table

Table 3. Quantitative Program Targets (PPMs)

Target	2013	2014
Number of homes or buildings treated	TBD	TBD
Number of units incented or rebated	TBD	TBD

Table 4 – Work paper Status

#	Workpaper Number/Measure Name	Approved	Pending Approval	Submitted but Awaiting Review
1				
2				
3				
4				
5				
6				

For ARRA-originated finance programs and New financing Offerings: TBD

Table 5:. On Bill Financing Subprogram Milestones and Timeline (example)

Milestone	Date
Statewide Coordination Meeting	Oct-12
Statewide Vendor Participation Guidelines Completed	Nov-12
Vendor training module completed	Nov-12
Marketing materials completed	Feb-13
Loans funded	2/2013 – 12/2014

Table 6 Geographic Regions

Geographic Region	Statewide Financing - SCG
CEC Climate Zone 1	
CEC Climate Zone 2	
CEC Climate Zone 3	
CEC Climate Zone 4	x
CEC Climate Zone 5	x
CEC Climate Zone 6	x
CEC Climate Zone 7	x
CEC Climate Zone 8	x
CEC Climate Zone 9	x
CEC Climate Zone 10	x
CEC Climate Zone 11	
CEC Climate Zone 12	
CEC Climate Zone 13	x
CEC Climate Zone 14	x
CEC Climate Zone 15	x
CEC Climate Zone 16	x

Table 7: Program Administration of Program Components

Program Name	Program Component	Implemented by IOU Staff? (X = Yes)	Implemented by contractors to be selected by competitive bid process (if Yes then enter type of contractor/other maket actor possibly used)	Implemented by contractors NOT selected by competitive bid process (list prime contractor and sub-contractor names)	Implemented by local government or other entity (X = Yes)
On-Bill Financing	Program Application Process	X			
On-Bill Financing	Inspections	X			
On-Bill Financing	Project Engineering Review	X			
On-Bill Financing	Loan Funding	X			
On-Bill Financing	Loan Repayment Process	X			
On-Bill Financing	Marketing/Outreach	X			X

Table 8: Customer Eligibility Requirements (Joint Utility Table)
For On Bill Financing subprogram:

Customer Eligibity Requirement (list of requirements)	**PGE**	**SCE**	**SDGE**	**SCG**
Non-residential customers (including institutional customers)	x	x	x	x
owners of multifamily units who do not reside on the premises	x	x	x	x

The utilities must work together and submit this table jointly in their respective applications

For ARRA-originated finance programs and New financing Offerings: TBD

Table 9: Contractor Eligibility Requirements (Joint Utility Table)

Contractor Eligibity Requirement (list of requirements)	PGE	SCE	SDGE	SCG
TBD				TBD

List any contractor (and/or developer, manufacturer, retailer or other "participant") eligibility requirements (e.g. specific IOU required trainings; specific contractor accreditations; and/or, specific technician certifications required).
The utilities must work together and submit this table jointly in their respective applications

Table 10: Manufacturer/Retailer/Distributor Partners

Manufacturer/Retailer/Distributor Parnter Information	PGE	SCE	SDGE	SCG
Manufacturers enrolled in program	[list kinds of manufacturers]	[list kinds of manufacturers]	[list kinds of manufacturers]	[list kinds of manufacturers]
Manufacturers enrolled in program				N/A
Manufacturers enrolled in program				N/A
Manufacturers targeted for enrollment in program				N/A
Manufacturers targeted for enrollment in program				N/A
Manufacturers targeted for enrollment in program				N/A
Retailers enrolled in program				N/A
Retailers enrolled in program				N/A
Retailers enrolled in program				N/A
Retailers enrolled in program				N/A
Retailers targeted for enrollment in program				N/A
Retailers targeted for enrollment in program				N/A
Retailers targeted for enrollment in program				N/A
Distributors enrolled in program				N/A
Distributors enrolled in program				N/A
Distributors enrolled in program				N/A
Distributors targeted for enrollment in program				N/A
Distributors targeted for enrollment in program				N/A
Distributors targeted for enrollment in program				N/A

Manufacturers enrolled in program
Manufacturers targeted for enrollment in progr
Retailers enrolled in program
Retailers targeted for enrollment in program
Distributors enrolled in program
Distributors targeted for enrollment in program

Table 11: Summary Table of Measures, Incentive Levels and Verification Rates

Measure Group	Market Actor Receiving Incentive or Rebate	PGE		SCE		SDGE		SCG	
		Incentive Level	Installation Sampling Rate	Incentive Level	Installation Sampling Rate	Incentive Level	Installation Sampling Rate	Incentive Level	Installation Sampling Rate
		[indicate the expected incentive level or range by measure grouping]	[indicate the rate at which the utility samples for verification of installation of measures]	[indicate the expected incentive level or range by measure grouping]	[indicate the rate at which the utility samples for verification of installation of measures]	[indicate the expected incentive level or range by measure grouping]	[indicate the rate at which the utility samples for verification of installation of measures]	[indicate the expected incentive level or range by measure grouping]	[indicate the rate at which the utility samples for verification of installation of measures]

a. Use a single excel spreadsheet to indicate the eligible measures for the program across all IOUs. Indicate the expected incentive level by measure or measure grouping for each IOU, making clear where these vary.

b. For each incented or rebated measure, indicate the market actor to whom this will be provided.

For OBF Subprogram: See the Summary Table of Measures, Incentive Levels and Verification Rates in the Statewide Industrial Program, the Statewide Commercial Program, and the Statewide Agricultural Program.

For ARRA-originated finance programs and New financing Offerings: TBD

Table 12: Additional Services

Additional Services that On-bill Financing Sub-Program Will Provide	To Which Market Actors	PGE	SCE	SDGE	SCG
		[indicate the level at which the service will be incented or funded]	[indicate the level at which the service will be incented or funded]	[indicate the level at which the service will be incented or funded]	[indicate the level at which the service will be incented or funded]
Energy Audit					0
Energy Savings Assessment					0
Information on Other Utility Programs					0

a. For each service provided, indicate any expected charges to market actors of the services, and/or the level at which any such services will be incented or funded.

Table 13: Program Related Audits

Levels at Which Program Related Audits Are Rebated or Funded	Who Receives the Rebate/Funding (Customer or Contractor)

For OBF subprogram: N/A - no post-implementation audits are requred.
For ARRA-originated finance programs and New financing Offerings: TBD

NOTE: If software tools are required sub-program participation, and if there is a program related audit for the sub-program, this table shows the levels at which the audit is rebated or funded and to whom such rebates/funding will be provided (i.e., customer or contractor)

Table 14: Quality Assurance Provisions

QA Requirements	QA Sampling Rate (Indicate Pre/Post Sample)	QA Personnel Certification Requirements
QA requirements #1	TBD	TBD
QA requirements #2		
QA requirements #3		
QC requirement #1		
QC requirement #2		
QC requirement #3		

NOTE: Please list quality assurance, quality control, including accreditations/certification or other credentials required.

Table 15: Cross-cutting Sub-program and Non-IOU Partner Coordination

Sub-Program Name		
Other IOU Sub-program Name	Coordination Mechanism	Expected Frequency
TBD	TBD	TBD
Coordination Partners Outside CPUC		
TBD	TBD	TBD

Note: "Mechanisms" refers to communication methods (i.e. quarterly meetings; internal list serves; monthly calls, etc.) and/or any cross-program review methods (i.e., feedback on program plans; sign off on policies, etc). or harmonization techniques (i.e. consistent certification requirements across programs, program participant required cross trainings, etc).

Table 16: Non-EE Sub-Program Information

Sub-Program Name		
Non-EE Sub-Program	**Budget**	**Rationale and General Approach for Integrating Across Resource Types**
TBD	TBD	TBD

NOTE: Column C --> Integrated/coordinated Demand Side Management: As applicable, describe how sub-program will promote customer education and sub-program participation across all DSM options. Provide budget information of non-EE sub-programs where applicable. Column D --> Integration across resource types (energy, water, air quality, etc): If sub-program aims to integrate across resources types, please provide rationale and general approach

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

1. **Program Name:** Emerging Technologies Program (ETP)
   Program ID: SCG3721 – SW-ET-Technology Development Support
   SCG3722 – SW-ET-Technology Assessment
   SCG3723 – SW-ET-Technology Introduction Support
   Program Type: Statewide Core Program

2. Projected Program Budget Table

Table 1

Program #	Main/Sub Program Name	Administrative Amount	Marketing Amount	Direct Implementation Amount	Incentive Amount	Total Program Budget Amount
	SW Emerging Technologies Programs					
3721	SW-ET-Technology Development Support	$9,051	$600	$116,106	$0	$125,757
3722	SW-ET-Technology Assessment	$72,403	$4,800	$928,831	$0	$1,006,034
3723	SW-ET-Technology Introduction Support	$99,831	$6,600	$1,278,505	$0	$1,384,936
	TOTAL:	**$181,285**	**$12,000**	**$2,323,442**	**$0**	**$2,516,727**

3. Program Mission

The mission is to support "increased energy efficiency market demand and technology supply" (the term supply encompassing breadth, depth, and efficacy of product offerings) by contributing to development, assessment, and introduction of new and under-utilized energy efficiency (EE) measures (that is, technologies, practices, and tools), and by facilitating their adoption as measures supporting California's aggressive energy and demand savings goals.

Increased market demand and increased technology supply are reinforcing effects – each working to spur the other. As market demand increases, market-pull leads to technology supply increases. As technology supply increases, changes in perceptions and attitudes, work to stimulate increased market demand.

Increased market demand works to address energy efficiency goals in both the near term and longer term. In the near term, increased market demand will lead to higher adoption rates of currently available energy efficiency measures. Market demand can be increased by either reducing barriers to adoption or through increasing incentives to adopt. In either case, as barriers (disincentives) shrink relative to incentives, adoption rates will grow. One example of a barrier to EE measure adoption is performance uncertainty, where an incentive example is an environmental concern.

A longer-term effect of increased market demand for EE measures is the spurring of market pull for yet-to-be-developed EE measures. Generally, market-pull product development usually takes place when some specific need is discovered in the marketplace that currently is either being ignored, not well served, or just not recognized. As technology developers become aware of unmet consumer needs for EE measures, development will be undertaken to fulfill those needs in the future. Market pull created by increased market demand will result in longer-term increases in technology supply.

Increased technology supply also works to address energy efficiency goals in both the near term and longer term. In the near term, increased technology supply will lead to more EE measure adoption at current levels of market demand. Factors contributing to this increase would be more applications for which EE measures are available, lower prices due to competition, and increased measure effectiveness. Technology can generally be increased through improving incentives to invest in new measures or decreasing the difficulty of developing and launching new measures. In either case, as difficulty shrinks relative to incentive, development of new technology supply will grow. One example of decreasing the difficulty of developing an EE measure is a pre-existing testing protocol. An example of incentive to invest in a new technology is a building code driving future customer purchases.

A longer-term effect of increased technology supply of EE measures is the development of future market demand. Generally, as breadth, depth, and efficacy of available products in a new market segment increases, consumer perceptions and attitudes will change. Items previously viewed as niche become more mainstream. Energy usage considerations will become a more expected aspect of the products consumers purchase. In this way, increases in technology supply will result in longer-term increases in market demand.

By advancing these goals and objectives, the ETP supports California's energy and demand savings targets as defined by the following regulatory and legislative documents:

- The Energy Efficiency Rulemaking 09-11-014 providing guidance for 2013-2014 portfolios (2013-2014 Decision)
- The 2010-2012 Energy Efficiency (EE) Application 08-07-021, et. al. and related CPUC guidance in Rulemaking 06-04-010;
- The California Long Term Energy Efficiency Strategy (Strategic Plan), with particular focus on the big, bold initiatives in the domains of residential and commercial ZNE buildings, HVAC industry transformation, as well as lighting innovation; and
- The California Global Warming Solution Act of 2006 (Assembly Bill 32).

The ETP will leverage all complementary efforts and entities in support of its mission, including other statewide and local IOU EE programs; statewide utilities' emerging technologies programs; and EE innovation activities by external organizations such as private industry, industry trade organizations, corporate laboratories, CEC Energy Research & Development Division (ER&DD), U.S. DOE and national laboratories, and regional, national and international ETP partners including utility, academia, non-governmental organizations, and other market stakeholders.

Section 4 of this PIP describes the rationale for and expected outcome from the ETP in relation to market and technology barriers and the Strategic Plan. Three sub-programs central to the ETP's ability to address its mission and achieve its goals and objectives are also described in Section 4, below. These sub-programs drive the process of evaluating

the application of energy-saving measures in real-world settings and building a pipeline of measures to consider for deployment through utility EE programs.

4. Program Rationale & Expected Outcome

California consumers report they are eager for solutions to climate change and other environmental issues, and California's IOUs have implemented a vast array of programs to support the purchase and use of EE measures. Many of these programs have seen tremendous success, yielding energy and demand savings that have reduced the need for new generation, transmission, and distribution facilities, lowered ratepayer energy bills, and avoided tons of greenhouse gas emissions.

To meet California's ambitious EE goals, new measures must be added to ensure program success in 2013-2014 and beyond. However, a host of market barriers can delay new measure introduction and adoption. Delayed adoption in turn diminishes, slows, or even eliminates the potential energy and environmental benefits of new measures, as well as the attractiveness of investing in and developing these measures.

To achieve success, the ETP will focus its operations on three core sub-programs. Each of the sub-program is briefly presented within this section (Section 4) of the program implementation plan. Note: With the experience gained from implementing the 2010-2012 program, it becomes clear that the 2010-2012 program "elements" are better understood as *tactics*, or tools, that can be utilized to address more than one ETP goal; there is not a one-to-one mapping of tactic to goal. A tactic or a set of tactics may be applied in coordination to advance overall ETP goals. Accordingly, the descriptions of the old elements have been refreshed for 2013-2014 to reflect broader program elements. Please see Table 2 for a depiction of how the 2010-2012 elements have been distributed. Please also refer to each section's subheading for the updated 2013-2014 categorization of these approaches.

1. **Technology Development Support (TDS)**
2. **Technology Assessments (TA)**
3. **Technology Introduction Support (TIS)**

Table 2. Mapping of the 2010-2012 "elements" into the new 2013-2014 sub-programs

2013-2014 Subprogram	Goal	*Merged 2010-2012 ETP "Elements"
Sub-program #1 Technology Development Support Sub-program	Increased EE technology supply (Support the development of new technologies)	• Technology Development & Support • TRIO • Market Studies and Behavioral Studies
Sub-program #2 Technology Assessments Sub-program	Increased number of measures offered by EE programs (Identify promising technologies for EE programs)	• Technology Assessments • Demonstration Showcases • Market Studies and Behavioral Studies • Technology Test Center (SCE only)
Sub-program #3 Technology Introduction Support Sub-program	Support technology introduction and whole-building deep-energy reduction solutions ("Seed" market demand among targeted end users)	• Scaled Field Placements • Demonstration Showcases • TRIP Solicitations (Implemented in 2012 by SCE only. New to ETP in 2013-2014.) • Market Studies and Behavioral Studies

The ETP has established three goals and seven objectives as the means to achieve its mission. Section 5 of this PIP elaborates these goals in detail.

ETP Goal#1: Increased EE technology supply
ETP Objective 1.1: Support technology development
ETP Objective 1.2: Conduct technology developer outreach through TRIO

ETP Goal #2: Increased number of measures offered by EE programs
ETP Objective 2.1: Perform Technology Assessments
ETP Objective 2.2: Transfer measures into EE programs

ETP Goal #3: Support technology introduction and whole-building deep-energy reduction strategies
ETP Objective 3.1: Conduct field deployments
ETP Objective 3.2: Conduct technology demonstrations
ETP Objective 3.3: Conduct Technology Resource Innovation Program (TRIP) Solicitations

Table 3 highlights the various parameters to highlight the distinctions between the new three ETP subprograms for 2013-2014

Table 3. Distinction Between ETP Sub-programs

Parameter	Technology Development Support	Technology Assessments	Technology Introduction Support
Purpose	specifications, outreach → mid- to long-term EE technology supply	performance, cost data, market potential → EE programs	market exposure
Theme	spur technology development	evaluation	first-hand experience/exposure
Units installed	none to one lab evaluation in some cases	one to a few (exceptionally, many) or entire floor/building/ facility	a few to many (or entire floor/building/ facility)
Number or sites	none to one	one to a few (exceptionally, many)	one to a few (exceptionally, many) as strategically valuable
Unique measures	one up to whole system	one up to whole system	one up to whole system or whole building
Customer involvement	none	one or a few users	few to many users or viewers
Duration	short to medium	medium to long	as needed (typically long)
Data collection	detailed	detailed	none to moderate
Preferred Dissemination mechanism	printed report, outreach, & other media	printed report & other media	printed report & other media along with first-hand experience and word of mouth

Program Design to Overcome Barriers

The ETP focuses on four priority market and technology barriers:

A. **Information or search costs -** the value of time spent identifying, learning about, and locating EE measures.
B. **Performance uncertainties –** the difficulties and costs of acquiring the information needed to evaluate performance claims for EE measures.
C. **Organizational practices or customs –** behavior by companies, departments, professional groups, and government entities that has been institutionalized and may discourage forward thinking and proactive implementation of EE measures.
D. **Product or service unavailability –** limited supply and/or distribution of EE measures. For instance, a customer may want to buy task lights using solid-state lamp technology, but finds that vendors and distributors cannot meet the customer's volume requirements or other specifications.

In addition, other EE programs and market factors will have responsibility for, and ETP will contribute to, actions to overcome the following customer barriers.

- **Hidden costs** – unexpected costs emerging after the initial decision to implement an EE measure. For instance, a hidden cost under the Big, Bold strategies would be the expense of training contractors on new types of lighting or HVAC measures.
- **Asymmetric information and opportunism** – concerns about reliability/applicability of measure developer and vendor claims. Collaborating with the work of universities and technical information providers, such as E Source, the ETP can act as a resource to assist EE programs in addressing these claims.

The statewide IOUs' revision of the ETP scope for 2013-2014 to include three sub-programs represents a response mindful of insights from previous ETP program years and past ETP EM&V studies. The IOUs will utilize these sub-program elements in a comprehensive effort to address the range of EE market barriers that ETP can either influence directly or through efforts supporting other EE and IDSM programs. Following are descriptions of the 2010-2012 six ETP elements and how they have been re-characterized as sub-programs in 2013-2014. Descriptions include supporting rationale, how each contributes to overcoming one or more market or technology barriers, and expected outcomes.

1. **Technology Assessments Subprogram** – (2013-2014: Changed to Subprogram #2; please see Table 2)

    a. Energy efficient measures that are new to a market or under-utilized for a given application will be evaluated for performance claims and overall effectiveness in reducing energy consumption and peak demand. ET assessments may utilize data/information from different sources including: *in situ* testing (customer or other field sites), laboratory testing, or paper studies may be used to support assessment findings. In addition

to other findings and/or information, assessments typically would generate the data necessary for EE rebate programs to construct a work paper estimating energy and demand savings over the life of the measure. Assessment proposals are screened before an assessment is initiated. The screening process considers:

- The measure's alignment with EE program strategy and Strategic Plan goals;
- The measure's projected magnitude of contribution towards kWh and kW reduction and/or Strategic Plan goals. This includes both the effectiveness of an individual measure and the potential number of adopted measures;
- The degree to which the assessment output will incrementally impact the measure's adoption rate;
- Information necessary to be generated for EE program inclusion and the effectiveness of an assessment in producing this information; and
- Resources (expense, labor) necessary to execute the assessment.

To ensure that technology lab assessments can be conducted properly, state-of-the-art test facilities staffed with knowledgeable engineers and scientists will be available to ETP project managers. These facilities will be focused toward broad initiatives like ZNE, as well as specific end-uses, such as refrigeration, lighting, water heating, and air conditioning. In all respects, they will allow independent verification of performance claims and quantification of energy and demand savings.

b. Rationale

The assessment function is a contributor to the transfer of promising measures into the utility portfolio.

c. Barriers addressed

Assessments address information or search costs, performance uncertainties, organizational practice or customs, as well as contributing to efforts by others to overcome hidden costs and asymmetric information and opportunism. For instance, assessment reports reduce the time that IOU customers must spend looking for and confirming the performance of EE measures – either directly when the customer reads the ETP report, or indirectly, when the customer receives education or marketing material through EE channels based on ETP assessment findings.

Similarly, ETP communications on measures that are being transferred or have been transferred to EE programs will assist companies, departments, and governmental entities in understanding EE measures' actual performance, thereby breaking down barriers to proactive implementation.

d. Expected outcomes
Technology assessments will contribute to increased measure awareness, market knowledge and reduced performance uncertainties for ETP stakeholders and IOU customers. Studies will aid in the acceptance and adoption of new technologies, especially those technologies which will be used in EE portfolios. This will lead to changes in organizational practices and customs that may otherwise limit EE measure procurement and application.

Technology assessments will also contribute to increased and improved technology supply, leading to further reductions in market barriers, increased intent to purchase/employ measures, and more EE rebates issued. Over time, they will support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

2. Scaled Field Placements – (2013-2014: no longer a sub-program, but considered one of many possible "elements" to support Subprogram #3, Technology Introduction Support. Please see Table 2).

a. These projects consist of placing a number of measures at customer sites as a key step to gain market traction and possibly gain market information. The measures will typically have already undergone an assessment or similar evaluation to reduce risk of failure. While the number of units in scaled field placements will vary widely, numbers typically larger than in an assessment of the technology are expected. A very simple example of a scaled field placement is to give 50 office managers an LED task light. Monitoring activities on each scaled field placement will be determined, as appropriate.

b. Rationale
Scaled field placements work under the premise that end-users or stakeholders with adoption influence (installers, builders, procurement officers) will be positively influenced by first-hand experience utilizing a measure and that this first-hand experience will lead to future measure purchases/use. This method of influence is fundamentally different from assessments that influence through information dissemination via a report or other results media.

Scaled field placements will be most effective when:

- The stakeholder gaining exposure has the potential to influence a large number of future purchases/uses. Example: Placing a high-efficiency air conditioning unit with several large HVAC contractors. "Potential to influence" is a broad term. Influence of the participant stakeholder could stem from purchase decision power, high frequency of

interactions with other potential adopters, or status as a thought leader; and

- First-hand experience is projected to be more influential for a measure than less costly dissemination mechanisms such as printed information or media. Technology complexity and concern regarding human factors are potential causes for first-hand experience to be more influential than printed media. Example: Placing energy efficient retail lighting at a Wal-Mart, Target, and Home Depot store.

c. Barriers addressed
Scaled field placements address Information or search costs, performance uncertainties, organizational practice or customs, as well as contributing to efforts by others to overcome hidden costs and asymmetric information and opportunism. For instance, scaled field placements reduce the time that large-scale decision makers and decision influencers must spend looking for and confirming the performance of EE measures – as first-hand experience eliminates these needs.

d. Expected outcomes
Scaled field placements will contribute to increased measure awareness, market knowledge and reduced performance uncertainties for ETP stakeholders and large-scale customer decision makers and decision influencers. This will lead to changes in organizational practices and customs that may otherwise limit EE measure procurement and application.

Scaled field placements can also contribute to a market tipping point, in which an influential buyer or decision maker responsible for large volume purchase decides to specify the EE measure – thus creating a spike in market demand and exposure for many people who experience the measure once it is implemented. Over time, scaled field placements may support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

3. Demonstration Showcases – (2013-2014: no longer a sub-program, but considered a "elements" that can support multiple sub-programs as needed. Please see Table 2).

a. These possibly large-scale projects will expose measures to various stakeholders utilizing *in situ*, real-world applications and installations. Monitoring activities on demonstration showcases will be determined, as appropriate. For instance, a demonstration showcase for ZNE residential or commercial new construction or for a ZNE existing building could take a form similar to projects performed as part of the Advanced Customer

Technology Test for Maximum Energy Efficiency (ACT2) project in California 1990, creating broad public and technical community exposure. Another example would be a demonstration showcase residential or commercial building highlighting LED lighting technologies to create visibility and market awareness for building contractors, architects, and electricians.

Key attributes of a demonstration showcase is that it is open to the public or to an interest group (for example, a super-low energy data center that is open to data center industry professionals), that many viewers are encouraged to visit, and that may highlight a systems approach rather than an individual measure (this last point is optional, as in the case of the previously cited LED lighting showcase). The actual number of customers or viewers exposed to the showcase will depend on the technologies being demonstrated, market segment and other variables.

b. Rationale

Demonstration showcases provide a unique opportunity for measures and systems to receive broad exposure, and for numerous visitors to "kick the tires," or at least experience the measure in an informal, real-world setting. The combination of large numbers of customers and other stakeholders experiencing the measure with the opportunity to return to the showcase with friends, family, and professional associates, creates a powerful "conversion" experience that enhances diffusion and market penetration. Note that this is very different from the experience of being marketed to or being sold the measure in a purchasing environment.

c. Barriers addressed

Demonstration showcases address information or search costs, performance uncertainties, organizational practice or customs, as well as contributing to efforts by others to overcome hidden costs and asymmetric information and opportunism. For instance, demonstration showcases reduce the time that IOU customers must spend looking for and confirming the performance of EE measures – either directly, when the customer visits the demonstration showcase site, or indirectly, when the customer receives educational or marketing material through word-of-mouth or EE channels.

Similarly, in-person exposure, word-of-mouth, media or ETP/EE communications on demonstration showcase features, performance, and impressions will assist representatives of companies, departments, and governmental entities in gauging EE measures' actual performance thereby breaking down barriers to proactive implementation.

d. Expected outcomes
Demonstration showcases will contribute to increased measure awareness, market knowledge and reduced performance uncertainties for ETP stakeholders and IOU customers. This will lead to changes in organizational practices and customs that may otherwise limit EE measure procurement and application.

Demonstration showcases, like scaled field placements, can contribute to a market tipping point, in which one or more influential "connectors" or "mavens" experiences and recommends the EE measure to many friends and colleagues – thus creating a spike in market demand and exposure for many more people who experience the measure once it is implemented. Over time, they will support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long-term Strategic Plan and policy objective.

4. **Market and Behavioral Studies** – (2013-2014: no longer a sub-program, but considered a "element" that can support multiple sub-programs as needed. Please see Table 2).

a. These projects involve targeted research on customer behavior, decision making, and market behavior to gain a qualitative and quantitative understanding of customer perceptions, customer acceptance of new measures, and market readiness and potential for new measures.

Studies may involve primary research, such as studies of potential measure impacts and barriers, market segment needs and gaps, technology performance gaps, pre-studies to qualify potential measures and sites for scaled field placements and demonstration showcases, measure usability studies, long-term market potential studies for the ETP, and the like.

Specific examples of primary market and behavioral research include:
- User feedback gathered on high-efficiency HVAC units at big-box stores;
- Ethnographic studies to see how automated building system diagnostic applications would fit into daily operations at customer site;
- Lab-based observational studies of user behavior while using LED task lighting under controlled conditions;
- Usability studies for home energy monitoring and control systems; and
- Survey-based discrete choice analysis of features that customers prefer in high-efficiency appliances or industrial process controls.

Studies may also include secondary research based on the wealth of studies being conducted in the rapidly growing energy behavior field.

b. Rationale

Measure adoption is often impacted by customer/market perception and acceptance. Market and behavioral analysis may identify potential barriers to adoption early in the process. Results can provide crucial insights at multiple points in technology development, assessment justification, and transfer to and deployment by EE programs. Additionally, market and behavioral studies may be executed independently of a specific measure where this information is valuable to identify new markets or segment opportunities, or to advance one or more of the ETP objectives in other ways.

c. Barriers addressed

Market and behavioral studies address information or search costs, performance uncertainties, organizational practice or customs, as well as contributing to efforts by others to overcome hidden costs and asymmetric information and opportunism. For instance, market and behavioral study reports reduce the time that IOU customers must spend looking for and confirming the human factors performance aspects of EE measures – either directly, when the customer reads the ETP report, or indirectly, when the customer receives educational or marketing materials through EE channels based on ETP market and behavioral study findings.

Similarly, ETP communications about market and behavioral studies for measures that are being transferred or have been transferred to EE programs will assist companies, departments, and governmental entities in understanding EE measures' actual performance, including human factors, breaking down barriers to proactive implementation. They can also help product developers and manufacturers identify and target unmet customer needs, thus enabling development and deployment of new or better products, such as efficient consumer electronics or CFLs that better meet customer expectations.

d. Expected outcomes

Market and behavioral studies will contribute to increased measure awareness, market knowledge and reduced performance uncertainties for ETP stakeholders and IOU customers. This will lead to changes in organizational practices and customs that may otherwise limit EE measure procurement and application. Market and behavioral studies will also contribute to increased and improved technology supply leading to further reductions in market barriers, increased intent to purchase/employ measures, and more EE rebates issued. Over time, they will support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

5. **Technology Development Support** – (2013-2014: Merged into Subprogram #1, see Table 2)
   a. The ETP will look for targeted opportunities to support energy efficiency product development. Product development is the process of taking an early-stage technology or concept and transforming it into a saleable product. (Early-stage technologies are often the output of R&D work, hence product development bridges the gap between R&D and the market.) An example of an early-stage technology is a light-emitting diode. The product development process has resulted in televisions, computer monitors, illuminated signs, and lighting fixtures.

   b. Rationale
   Product development is best performed by private industry. There are opportunities, however, where the IOUs are well qualified or in a strong position to undertake targeted, cost-effective activities which provide value in support of private industry product development efforts. (Examples of activities include providing customer contacts for field evaluations, making lab testing facilities available to companies without this capability, or developing standard testing protocols. See Section 5, Goal #2, Objective 2.1 for a complete description of potential opportunities.) California has a vested interest in seeing EE products create positive impressions on consumers in the areas of performance and quality, as consumers may project a poor experience with one EE measure onto other EE measures. Technology development support can aid these efforts. As private industry is generally best positioned to perform product development, it is important during the screening process to establish the incremental value-added of these ETP activities for these opportunities. Attributes of potential opportunities which would lead to ET / IOU efforts being most necessary, cost-effective, and/or impactful are as follows:
   - Issuing rebates or setting rebate program requirements.
   - A cost (capital, labor, or expense), the resulting benefit of which would be shared by multiple stakeholders. (Example: making certain expensive pieces of equipment available to test targeted technologies in development by small companies.);
   - An investment of funds or resources, said investment being justified from the perspective of the ET mission, but being unattractive when viewed by a single technology developer. (Example: developing a hot-dry AC testing protocol.); and
   - Knowledge, equipment, information, or facilities that are very specific to the business of the IOU and may not be easily attainable by private industry without the IOU help. (Example: non-private IOU customer data.)

c. Barriers addressed
Technology development support focuses primarily on product or service unavailability. it also helps overcome organizational practices or customs by guiding a new measure to market that is tailored to specific segment or business needs. Finally, it may address Hidden Costs, a secondary market barrier for ETP, by assisting in development of a measure that minimizes maintenance or installation costs that would otherwise hamper adoption.

d. Expected outcomes
Technology development support will contribute to increased readiness and availability of EE measures for customers and EE program managers and reduced uncertainties for program participants. It also contributes to engagement in product development decision-making by ETP stakeholders and large-scale customer decision makers and decision influencers. This will lead to changes in organizational practices and customs and can lead to reduced maintenance and installation costs that may otherwise limit EE measure procurement and application.

The increased and improved technology supply, due to technology development support, will also lead to further reductions in market barriers, increased intent to purchase/employ measures, and more EE rebates issued. Over time, this will support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

6. Business Incubation Support - (2013-2014: no longer a sub-program, but considered a "element" that can supports all sub-programs as needed; please see Table 2).

a. Technology Resource Innovation Outreach (TRIO) is a statewide program that focuses on providing training and networking for entrepreneurs and companies providing energy saving technologies.

b. Rationale
During a solicitation process review by the PRG, it was mentioned that the utilities need to generate new innovative program ideas "through more outreach and non-traditional methods." In response to this request, more outreach was conducted via investor forums, university settings, and solicited abstracts.
Venture capitalists (VC) were notified of the potential TRIO program and were very interested in technologies that had a utility interest. The VCs were interested in learning how to do business with the utilities, what the utilities expected from entrepreneurs, how to utilize the utility emerging technologies department, and how to go about obtaining a purchase order with an IOU.

From this research the IOUs concluded that more outreach and non-traditional methods to generate new ideas could be generated by providing training workshops and mentoring on participating in IOU programs and the IDSM business environment.

TRIO is designed to accelerate the successful development of technologies through an array of engineering support, resources and services, developed and orchestrated by TRIO and offered both through TRIO and its network of contacts. There will be significant coordination with existing clean tech programs (such as the California Cleantech Open and various clean tech business clusters throughout California).

c. Barriers addressed

Business incubation support focuses primarily on product or service unavailability. It supports and accelerates market introduction for new measures (increased technology supply), and a particular form of information and search costs for businesses seeking to obtain recognition in IOU incentive and educational programs, as part of their business model. It also helps overcome organizational practices or customs by guiding new measures to market that are tailored to specific segment or business needs.

d. Expected outcome

Business incubation support will engender improved understanding of utility programs, as well as technology and business performance and market requirements for small entrepreneurs or large enterprises seeking to develop and/or introduce new EE and DR measures successfully into the market. It will reduce uncertainties for program participants, increase the readiness and availability of EE and DR measures, and increase participation in TRIP solicitations as well as in EE and DR incentive and education programs.

Business outreach support will also contribute to increased and improved technology supply over the mid- and long-term, leading to reductions in other market barriers, increased intent to purchase/employ measures, and more EE rebates issued. Over time, it will support increasing use of measures by customers, aiding EE or IDSM programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

Advancing Strategic Plan goals and objectives

The ETP fully supports the goals, strategies and near-team plans of the Strategic Plan. This support will be demonstrated through both: a) the types of technologies that are selected for the ETP, and b) the approach that is employed to address longer term goals of the strategic plan by having a well-

diversified portfolio of technologies under development, assessment, or deployment.

A key step that the IOUs are taking to increase ETP impact in support of the Strategic Plan is strengthening the linkages and feedback loops between ETP and other EE programs, as well as with leading market actors, to help advance development and implementation of new measures that support the Strategic Plan goals and strategies for Research and Technology, the Big, Bold initiatives, and related solutions, such as advanced lighting measures.

These linkages and feedback loops incorporate key EE, IDSM, and other IOU competencies such as EM&V, market research, behavioral, and potential studies, marketing, training, and regulatory support to ensure the deployment of new measures supporting the Strategic Plan will receive the full benefits of the IOUs' enterprise-wide resources.

The ETP organizational linkages and feedback loops will ensure a more cohesive approach to delivery of emerging technology products that in turn will lead to greater success in measure introduction, market adoption, and the overarching goal of energy savings. These linkages and feedback loops are further described in Section 6, below.

Furthermore in support of the Strategic Plan's goals and pursuant to the 2013-2014 guidance decision, the HVAC's Technologies and System Diagnostics Advocacy (HTSDA) 2010-2012 activities will be incorporated into ETP's goals and objectives.

The vision is to make a difference in the HVAC industry by addressing equipment reliability, performance, and integration/application challenges, in alignment with California's energy policies (i.e., California's Strategic Plan). These efforts will ensure that residential and light commercial HVAC technologies, installations, and maintenance practices are of the highest quality, and optimized for California's varying climates. These efforts are focused on coordination and advocacy that addresses the priority need for immediate and comprehensive action addressing elements critical to increasing, optimizing and maintaining the energy and peak electricity efficiency performance of direct expansion (DX)/vapor-compression–based cooling equipment and accelerating the market introduction of a range of advanced evaporative-based climate appropriate cooling technologies as well as research/advocacy supporting automated fault detection and diagnostic maintenance procedures. Efforts include unprecedented participation by HVAC industry stakeholders in research, development, and design, continuous review and updating, and operation of HVAC-related IOU programs. This unprecedented cooperation and collaboration with the HVAC

industry has the purpose of substantially advancing HVAC-related program quality and effectiveness.

5. Program Goals, Objectives, Action Strategies & Performance Metrics

ETP operations will apply the three sub-programs described in Section 4 to achieve the ETP goals, objectives, and action strategies.

- ETP Subprogram 1 - Technology Development Support
- ETP Subprogram 2 - Technology Assessments
- ETP Subprogram 3 - Technology Introduction Support

Each ETP sub-program corresponds to one of the three ETP goals. In high-level terms, the ETP goals are to increase adoption of measures (market demand), to increase measure supply (technology supply), and to advance Strategic Plan Big, Bold initiatives and related integrated energy solutions. These approaches are complementary and reinforce each other by helping new measures become available in the market and gain stronger market traction sooner than otherwise possible. Collectively, they coordinate with other EE programs and with interventions by non-utility market actors to market transformation efforts aimed at increasing the adoption of EE measures in California, nationwide and internationally.

Actions that increase market demand make developing and launching new measures less expensive, less risky, and generally more attractive to manufacturers and vendors seeking to increase sales and profitability. This increased market demand inherently drives increased technology supply.

Actions that increase technology supply by resulting in more high-quality EE measures in the market encourage existing entrepreneurs and attract new ones to form or join enterprises in the EE market. These actions also attract progressive policy makers, consumers seeking financial and intangible benefits, and investors and others willing to fund innovative measures. This increased technology supply inherently drives increased market demand.

Actions supporting Strategic Plan Big, Bold initiatives and related solutions combine market demand and technology supply approaches. All actors involved in creating technology supply and market demand benefit from interventions by the ETP and complementary efforts.

ETP Goal #2 (2013-2014 Goal #2: Increased number of measures offered by EE programs) Contribute to EE/DR market transformation efforts by accelerating stakeholder adoption of measures through transfer of available ETP measures into IOU EE programs or through other implementation channels. The focus of this Goal is increased market demand.

Objective 2.1: Perform Technology Assessments
During the 2013-2014 funding cycle, assess EE measures, including integrated demand-side management (IDSM) measures as defined by the EE Policy Manual[1].

Action Strategy 2.1.1a: Scan a wide variety of sources for measures that could help IOUs meet customer needs and achieve energy savings, demand reduction, and other IDSM targets. Following are representative measures for ETP scanning in 2013-2014.

Lighting

Task/ambient lighting designs
LED/SSL lighting applications (internal, external)
Dual relay occupancy sensor
Self commissioning dual loop daylight harvesting
Simplified daylight and occupancy controls
HID electronic ballasts
LED fixtures and systems
Dimmers for CFLs and LEDs
Super CFL
Small HID
Smart occupancy sensor systems
Solid state street lights
Plasma lighting

HVAC

Climate Appropriate Technologies
Automated Fault Detection & Diagnostics
Retrofit technologies
Behavioral studies
Quality Maintenance
Adiabatic cooling
Geothermal heat pumps
Natural gas driven heat pumps
Electric heat pumps

[1] ETP assessments are expected to complete in or before the fourth year after the year in which the assessment is initiated. This window may go well beyond the 2013-2014 funding cycle, especially for ETP assessments initiated in 2014. 2013-2014 funding cycle expenditures will occur throughout the project, meaning that some ETP expenditures could extend through 2018.

Other

Industrial process technologies
Advanced gas water heating technologies
Super Boiler
Consumer and commercial electronics
Plug loads and associated technologies
Energy Management Systems (all sectors including residential)
AMI/HAN integrated technologies
Data center technologies (air handling and hardware)

Action Strategy 2.1.1b: Review national and state priorities for HVAC technologies as part of the scanning efforts. The statewide HVAC program plans within the Residential and Commercial Programs program outline a process around HVAC program design, implementation, technology assessment, ETP, and codes & standards. The framework includes an engaged industry stakeholder collaboration group, the Western HVAC Performance Alliance (WHPA), IOU HVAC Management team that includes participation from HVAC program/ETP/Codes & Standards managers, and the Western Cooling Efficiency Center (WCEC).

Action Strategy 2.1.1c: Coordinate with statewide lighting initiatives (including the CLTC, state regulatory organizations, and other key stakeholders) to receive input to the scanning process.

> **Output for Action Strategy 2.1.1:** ET scanning will provide broad technology and market knowledge as a precursor to the ETP screening process.

Action Strategy 2.1.2: Execute a screening process for assessment candidates designed to ensure that the ET team most effectively focuses its time and resources on measures. Utilize the Residential and Commercial HVAC subprograms and statewide lighting initiatives as resources for providing information utilized in the screening process.

> **Output for Action Strategy 2.1.2:** The ET screening process will produce a list of scored, approved, and funded measures for assessment. Ideas that pass the screening criteria will proceed to the next step of the ET process.

Action Strategy 2.1.3: Conduct ET assessments to evaluate performance uncertainties and/or other attributes potential effectiveness / impact in reducing energy consumption and peak demand of new and/or under-utilized measures.

Output for Action Strategy 2.1.3: The ETP will produce a report describing results and conclusions from each ETP assessment. Ideas that pass the assessment criteria will proceed to the next step of the ET process.

Action Strategy 2.1.4: Develop and maintain a project tracking database containing the variables and attributes to be tracked by all ETCC programs statewide, and data will be reported to the CPUC on a regular basis. The naming convention shown in Attachment 3 will be used by all parties for tracking assessments.

Output for Action Strategy 2.1.4: The ETP will update the CPUC database quarterly.

Action Strategy 2.1.5: (SCE Only) Maintain testing capability to support technology assessments.

Output for Action Strategy 2.1.6: (SCE Only) ETP will contribute to maintenance of existing TTC facilities. All test facilities will have sufficient technical capability and intellectual capital to assess technologies.

Action Strategy 2.1.6: In addition, ETCC will host input sessions (Open Forum) to promote exchange of knowledge, perspectives and ideas two times per year. Like the ET Summit, these sessions will be organized by the ETCC and will be separate from quarterly ETCC business meetings. Increased access to ideas from outside organizations and entities will help the ETP maximize innovation and energy savings.

Output for Action Strategy 2.1.6: Minutes capturing assessment suggestions will be recorded for each session and used as an input to the scanning process.

Objective 2.2: Transfer Measures into EE Programs
During the 2013-2014 funding cycle, transfer measures from the ETP into the EE programs, with the goal of producing energy savings and/or demand reduction. Transfers may include measures from assessments initiated or completed in previous ETP cycles, as well as those from the current 2013-2014 program cycle.

Action Strategy 2.2.1: Evaluate program activity to assess the market acceptance two years, and potentially three years, after the launch of a measure transferred from ET. Review these findings with EE Program staff regarding potential improvement to both ET and EE program activities.

Output for Action Strategy 2.2.1: The ETP will track EE program activity for measures assessed in the ET program.

Action Strategy 2.2.2: The ETP will provide information to internal stakeholders from assessments that could help IOU's IDSM resource acquisition programs create new measures, or revise/integrate existing measures, that increase energy savings in a variety of market sectors. Specific activities will include ensuring final reports are distributed and made available, discussing results with EE program managers and IDSM clients, and assisting with communications and program documentation, as needed.

Output for Action Strategy 2.2.2: Internal stakeholders will receive ETP final reports, discussion of ETP results, and other communication and documentation when relevant.

Action Strategy 2.2.3: Communicate information on high-potential ET assessment findings to external stakeholders. Consult with internal and external partners to determine appropriate outreach activities for select specific measures. Possible outreach activities include:

- Post reports and results on the ETCC website;
- Debrief assessments partners on findings through a meeting, memo, or podcast;
- Execute public relations efforts, such as development and dissemination of press releases and articles for trade publications;
- Present findings at industry and community meetings/conferences, with a focus on promoting IDSM efforts;
- Submit articles to industry publications;
- Provide technical information to, and support information dissemination by the energy centers operated by each of the IOUs;
- Meet with market actors, including technology owners, manufacturers, allies, channel partners, trade association members, utilities, investors, and technology developers; and
- Utilize the bi-annual ET Summit Conference as a forum to communicate assessment results.

Output for Action Strategy 2.2.3: The ETP will post reports and results on the ETCC web site (http://www.etcc-ca.com) when the results/findings are appropriate for external dissemination. Due to high tracking costs, some line item outreach activities in Action Strategy 1.2.3 are not mentioned here.

Action Strategy 2.2.4: Proactively serve as subject matter experts and advisors to EE and IDSM program managers. Support transfer and development of EE measures based on assessments and market and behavioral studies. Coordinate

with EE programs and other IOU resources needed for successful EE measure roll-out.

Output for Action Strategy 2.2.4: Increased EE program manager knowledge and understanding.

Action Strategy 2.2.5: Conduct research for EE measures in accordance with guidance decision to support the development of energy savings ex-ante values

Output for Action Strategy 2.2.5: Increased number of measures in the EE portfolio.

ETP Goal #3: Support technology introduction and whole-building deep-energy reduction strategies.

The action strategies used in these projects may include but are not limited to scaled field placements, demonstrations, and/or showcases. The specific action strategy for each project will be specified in each project's plan.

Objective 3.1: Conduct field deployments (2013-2014: Changed to an element in support of ETP Goal#3)
Conduct scaled field placements during the program period to increase market understanding[2] and traction for new and under-utilized measures[3].

Action Strategy 3.1.1: Scan a wide variety of sources for measures for scaled field placements that could help IOUs to increase market understanding and traction for new and under-utilized measures.

Output for Action Strategy 3.1.1: ET scanning will provide broad technology and market knowledge as a precursor to the ETP screening process to identify opportunities for scaled field placements.

Action Strategy 3.1.2: Execute a screening process for scaled field placements candidates designed to ensure that the ET team focuses its time and resources on measures most effectively.

Output for Action Strategy 3.1.2: The ET screening process will produce a list of scored, approved, and funded measures for scaled field

[2] It should be noted that unlike assessments, the primary information dissemination mechanism for scaled field placements is first hand experience utilizing the measure.

[3] ETP scaled field placements are expected to complete in or before the fourth year after the year in which the scaled field placement is initiated. Therefore, expenditures for scaled placements initiated and funded for the 2013-2014 program cycle may be incurred through 2018.

placements. Ideas that pass the screening criteria will proceed to the next step of the ET process (Action Strategy 1.3.3)

Action Strategy 3.1.3: Conduct scaled field placements to increase market acceptance and traction for new and under-utilized measures[4].

Output for Action Strategy 3.1.3: At a minimum, the following data will be tracked for each scaled field placement: documents supporting the funding decision, number of measures installed, and EE program activity for programs where the installed measures would qualify.

Action Strategy 3.1.4: Evaluate program activity to assess the market acceptance at one year and two years, and potentially at three years after the launch of a scaled field placement. Review these findings with EE Program staff regarding potential improvement to both ET and EE program activities.

Output for Action Strategy 3.1.4: The ETP will track EE program activity for EE measures utilized in scaled field placements.

Objective 3.2: Conduct technology demonstrations (2013-2014: Changed to a element that can be used to support more than one ETP Goal) Conduct IOU demonstrations and showcases to expose stakeholders to the performance of measures or systems. Highlight real-world applications and installations for market actors and end users[5,6]. An example of these projects could include supporting the construction of a high-performance residential building to demonstrate how multiple measures integrate to deliver near-ZNE performance.

Action Strategy 3.2.1: Scan a wide variety of sources for measures for demonstration showcases that could expose technology to various stakeholders and demonstrate technology performance and applicability in real world applications.

Output for Action Strategy 3.2.1: ET scanning will provide broad technology and market knowledge as a precursor to the ETP screening process to identify opportunities for demonstration showcases.

[4] Note: Measures in scaled field placements will almost exclusively be measures already included in EE programs or a measure that has undergone technology assessment.

[5] It should be noted that unlike assessments, the primary information dissemination mechanism for demonstration showcases is first hand exposure to the measure.

[6] ETP Demonstration Showcases are expected to complete in or before the fourth year after the year in which the Demonstration Showcase is initiated. Therefore, expenditures for demonstration showcases initiated and funded for the 2013-2014 program cycle may be incurred through 2018.

Action Strategy 3.2.2: Execute a screening process for demonstration showcases candidates designed to ensure that the ET team most effectively focuses its time and resources on measures.

Output for Action Strategy 3.2.2: The ET screening process will produce a list of scored, approved, and funded measures for demonstration showcases. Ideas that pass the screening criteria will proceed to the next step of the ET process (Action Strategy 1.4.3)

Action Strategy 3.2.3: Conduct demonstration showcases to expose technology to various stakeholders and to demonstrate technology performance and applicability in real world applications.

Output for Action Strategy 3.2.3: At a minimum, the following data will be tracked for each demonstration showcase: documents supporting the funding decision, location of installed measures, and any available data regarding people who viewed/attended/participated.

ETP Objective 3.3: Conduct Technology Resource Innovation Program (TRIP) Solicitations.

Action Strategy 3.3.1 TRIP will solicit a competitive bidding process to fund third party programs that leverage innovative EE and/or IDSM technologies and approaches. The awarded TRIP Programs will be transferred and administered by the utility's EE third party portfolio group. TRIP Programs will follow standard third party policies and procedures. For these details, please see the Third Party Program Implementation Plans.

Output for Objective 3.3.1: TRIP will solicit and award new third party programs.

Market and Behavioral Studies: (2013-2014: Changed to a element that can be used to support all ETP Goals) Perform targeted studies of customer behavior, decision making, and market behavior to gain understanding of customer/market perception and acceptance, and to identify potential barriers to measure adoption.

Perform primary IDSM related market and behavioral studies to enhance market intelligence of customer needs and "decision triggers" to improve acceptance of new or under-utilized energy efficiency technology.

All market and behavioral studies will be captured in a final report.

Review and analyze secondary research as found, for example, from IOU subscription market research services such as E Source and Energy Insights, and from such organizations as Energy Information Administration, National

Technical Information Services, and CALMAC, as well as in reports such as the Residential Appliance Saturation Survey and Commercial End-Use Survey.

Secondary research findings will be captured in a final report.

Conduct the following types of studies:

- Perform market research studies to assess the potential impact of and barriers to implementation of proposed measures;
- Investigate specific technology gaps for a given market segment;
- Conduct an Energy Technologies/RD&D gap analysis for agricultural EE as included in the Strategic Plan; Identify and prioritize needed RD&D/ET projects;
- Perform customer research to assess the need for and optimal design of scaled field placements and demonstration showcases;
- Perform usability studies to assess how easily customers can adapt to and benefit from new measures; For instance, in-home monitoring and display technologies;
- Perform a scoping study, including findings from the Commission's potential and goals studies, of the overall long-term market potential for Emerging Technologies with estimates on targeted technologies and systems;
- Perform customer research to identify approaches to making new measures more attractive to customers;
- Perform customer research on the potential impact of social network software and other behavioral tools in expanding the impact of EE programs; and
- Perform market research to identify approaches for accelerating the pace of deployment of new EE and IDSM measures and programs.
- Develop roadmaps in accordance with 2013-2014 portfolio guidance decision.

Produce reports summarizing study findings.

Develop residential and commercial roadmaps that encompass existing building retrofit and new construction programs by the end of the fourth quarter of 2013, in preparation for their inclusion in their 2015 and later energy efficiency portfolios. Ensure collaboration with Energy Division staff and other EE programs for the development of the scope for these roadmaps.

Disseminate market and behavioral reports.

Post all market and behavioral reports on ETCC web site, where results/findings are appropriate for dissemination.

ETP Goal #1: Increased EE Technology Supply

Contribute to EE/DR market transformation efforts by assisting technology developers and manufacturers to create technology supply with respect to emerging technologies, including supply for the Big Bold Initiatives, thereby increasing the number of EE measures that are available for adoption. The focus of this Goal is increased technology supply.

Objective 1.1 Support technology development

During the **2013-2014** program cycle, the ETP will screen, select, and implement targeted technology development support projects to benefit EE product development.

Action Strategy 1.1.1: Identify targeted opportunities to develop forward looking product specifications which could be used by a multitude of product developers. This effort could be most effective if the opportunity exists to tie future rebates or other incentives to the specifications. This may include development of an open source or proprietary product specification for entrepreneurs to build to – possibly with incentives. This may also contribute to competitions to develop new product concepts/meet specifications.

Output for Action Strategy 1.1.1: Produce open source or proprietary specifications.

Action Strategy 1.1.2: Look for targeted opportunities to establish product baseline performance levels. As an independent entity, the utilities may be in a position to establish baseline performance levels. This baseline information would serve as an input to product development efforts. Often, it is expensive and time consuming for developers to establish baseline performance in a product segment.

Output for Action Strategy 1.1.2: Distribute baseline performance level reports to targeted product developers and partner entities.

Action Strategy 1.1.3: Look for targeted opportunities to develop standard test protocols for energy efficient products, in support of statewide Codes & Standards Program.

Output for Action Strategy 1.1.3: Develop and disseminate standard EE product test protocols in conjunction with statewide Codes & Standards Program.

Action strategy 1.1.4: Look for targeted opportunities to provide customer contacts for testing and focus groups. Utilities may be in a unique position to help connect product developers with customers willing to participate in field tests of measures and provide feedback.

Output for Action Strategy 1.1.4: A list of customers who have agreed to have their contact information shared with a technology developer.

Action strategy 1.1.5: Look for targeted opportunities to conduct market or behavioral studies and otherwise provide and/or collect market intelligence. Utilities may have access to or the ability to collect market intelligence that would help justify product development investment and guide product development targets.

Output for Action Strategy 1.1.5: Any market or behavioral studies will be captured in a final report.

Action strategy 1.1.6: Look for targeted opportunities to make expertise/knowledgeable personnel available as resources to product developers. Utilities may be in a position to advise on certain subject matter.

Output for Action Strategy 1.1.6: Produce an activity report for time charges incurred by ETP, while providing support to product developers.

Action Strategy 1.1.7: Look for targeted opportunities to make testing facilities and/or other infrastructure available to multiple product developers. Utilities may be in a position to facilitate the sharing of capital intensive testing facilities or other infrastructure across parties developing energy-efficient products. Often, these resources serve as a barrier to product development or as a barrier to product quality and performance success.

Output for Action Strategy 1.1.7: Produce an activity report for testing and other infrastructure support provided to product developers

Objective 1.2. Conduct technology developer outreach through TRIO

Incubate businesses developing or selling EE or DR measures. TRIO focuses on providing training and networking for entrepreneurs and companies providing energy saving technologies. This will include providing training workshops and mentoring on participating in IOU programs and the IDSM business environment. More detailed information regarding the TRIO efforts are included in Section 8 of this PIP.

ETP Goal #2: (2013-2014: Incorporated into the project selection criteria for each Sub-program) Support achievement of the Strategic Plan Big, Bold initiatives for ZNE New Residential Construction, ZNE New Commercial Construction, ZNE for Existing Buildings, HVAC Industry and Market Transformation, and related solutions, such as advanced lighting measures, through programs and initiatives aimed at each. As the Strategic Plan is prominent in the activities of the ETP, a significant portion of the efforts undertaken towards goals 1 and 2 will contribute towards goal 3.

Objective 2.1: (2013-2014: Incorporated into the project selection criteria for each Sub-program)

Help advance innovative measures and/or strategies to support ZNE New Residential Construction, ZNE New Commercial Construction, ZNE for Existing Buildings, HVAC Industry and Market Transformation, and related solutions during 2013-2014.

Action Strategy 2.1.1: (2013-2014: Incorporated into the project selection criteria for each Sub-program) Scan, screen and execute emerging technology projects in the areas of assessments, scaled field placements, demonstration showcases, market and behavioral studies, and/or technology development support to support ZNE New Residential Construction, ZNE New Commercial Construction, ZNE for Existing Buildings, HVAC Industry and Market Transformation, and related solutions during 2013-2014. (Projects in this action strategy will be considered to fulfill objectives in multiple Goals where relevant.)

Output for Action Strategy 2.1.1: (2013-2014: Incorporated into the project selection criteria for each Sub-program) Outputs for these projects would be as stated for the corresponding projects under goals 1 and 2.

Objective 2.2 (SCE Only) (2013-2014: Incorporated into the project selection criteria for each Sub-program)

SCE's TTC is a resource that provides state-of-the-art testing facilities for conducting ETP projects and evaluating new IDSM technologies in support of the Strategic Plan's Big, Bold initiatives.

The TTC will maintain testing capabilities to specifically support the Big, Bold ZNE and HVAC initiatives. Additional important end uses, including lighting and refrigeration, will be the focus of distinct TTC test facilities. More detailed information regarding the TTC efforts are included in Section 8 of this PIP.

Numerical Deliverables

The 2013-2014 ETP brings an expanded set of tools to the complex task of supporting Strategic Plan's goals, while assisting EE and IDSM programs in achieving maximum impact. As certain objectives involve activities that are new to the ETP, there is some degree of inherent uncertainty with regards to numerical deliverable levels. (An example of a numerical deliverable is "Conduct Technology Introduction Projects")

To account for this inherent uncertainty, while allowing the use of numerical deliverables, the ETP may need to substitute additional assessments in place of other program deliverables, if necessary, in order to meet numerical deliverable levels described in the Table 4. For instance, if projections for a demonstration showcase for an "Office of the Future" are significantly more costly than anticipated, the ETP may substitute one or more technology assessments to assure

a successful, timely, and cost-effective outcome from all objectives that contribute to the ETP Goals.

Table 4. 2013-2014 Numerical Goals

2013-2014 Subprogram	Objective	Cycle Numeric Goal
Sub-program #1 Technology Development Support Subprogram	Screen, select, and implement targeted technology development support projects to benefit EE measure development.	2
	Conduct technology developer outreach through workshops	2
Sub-program #2 Technology Assessments Subprogram	Assess EE measures, including integrated demand-side management (IDSM) measures	10
	Transfer measures from the ETP into the EE programs, with the goal of producing energy savings and/or demand reduction.	4
Sub-program #3 Technology Introduction Support Subprogram	Conduct technology introduction activities	2
	Conduct Technology Resource Innovation Program (TRIP) Solicitations	1

Program Performance Metrics (PPMs)

On December 2, 2010, the Commission issued Resolution E-4385, approving Program Performance Metrics (PPMs) for Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company and San Diego Gas and Electric Company for 2010-2012 statewide energy efficiency programs and subprograms. The Commission gave each PPM a metric type which indicated the reporting frequency: Metric type 2a indicates that the IOUs should report on the metric on an annual basis (unless indicated otherwise) Metric type 2b indicates the IOUs should report on the metric at the end of the program cycle.

Table 5 below lists the approved PPMs and metric types for the Emerging Technologies Program (Resolution E-4385, Appendix A, pp. 39-40):

NOTE: For 2013-2014, the "elements" have been re-characterized to support more than one ETP Goal.

Table 5. 2013-2014 Program Performance Metrics

SW PROGRAM/ *Sub-program*	PROGRAM PERFORMANCE METRIC (PPM)	Metric Type
EMERGING TECHNOLOGIES (ET)		
	1. The number of new "proven" ET measures adopted* into the EE Portfolio. * "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	2b
	2. Potential energy impacts* (energy savings and demand reduction) of the adopted ET measures into the EE portfolio. * Potential energy impacts to be reported based on ET project findings and estimated market potential (reported through quarterly ET database updates)	2b
Technology Assessment (TA)	1. 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 * "Adoption" means measure is available to end-use customers through IOU programs.	2b
Scaled Field Placement (SFP)	1. 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.	2b
Demonstration Showcases (DS)	1. 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.	2b
Market and Behavioral (M&B) Studies	1. Self-reported increased in knowledge among internal ET stakeholders about the technologies targeted by the M&B studies.	2b
Technology Development Support (TDS)	1. Number of new performance specifications and/or Use Cases* produced as a result of TDS sub-program. * "Use Cases" describe the need for a technology or application.	2b
	2. Number of new performance specifications and/or Use Cases presented to manufacturers/private industry for possible action.* * "Possible action" means that the manufacturer/private industry considered TDS results in their product development efforts.	2b

Technology Resource Incubation and Outreach	1. Percent of attendees who voluntarily respond and self-report increased understanding on how to do business with utilities.	2b
Technology and Testing Center (TTC)	1. Number of ETP measures evaluated at the TTCs in support of ET Assessments Sub-Program that are adopted* into the EE portfolio (and/or available in the market). * "Adoption" means measure is available to end-use customers through IOU programs.	2b

Market Transformation Indicators (MTIs)

Per Resolution E-4385, a subset of market transformation indicators (MTIs) for statewide energy efficiency programs and subprograms were presented at a public workshop on November 7, 2011, to allow for public comments and discussion before being finalized. Per Energy Division Guidance on June 19, 2012, the MTIs to be found in Attachment "H" are approved for this sub-program as applicable.

6. Coordination and Integration

IOU coordination efforts are described below

6.1 - ETP Statewide Coordination

A key strength of the ETP is the value created through ongoing collaboration among the statewide IOUs. Continuing and enhancing this statewide collaboration will contribute to the successful accomplishment of the ETP goals and objectives.

6.1.1 – Leveraging role of the Emerging Technologies Coordinating Council (ETCC): The ETCC plays a central role in statewide ETP coordination. The ETCC membership consists of the IOUs, the CEC, and CPUC staff. During 2013-2014, the ETCC will meet at least four times per year to coordinate activities, exchange information, and define new and enhanced collaboration strategies.

Discussion at ETCC business meetings may touch on privileged customer information, business strategic and operational details, and privileged manufacturer product details that are too sensitive to discuss in an open forum. For this reason, ETCC business meetings will not be open to the general public.

The ETCC also convenes sub-groups to address statewide ETP collaboration opportunities that require additional time beyond what is available during regular ETCC meetings. For instance, a standing lighting sub-group meets quarterly, and

the ETCC will host an upcoming hot, dry air conditioner meeting with the Western Cooling Efficiency Center at UC Davis.

In accordance with 2013-2014 guidance decision, ETCC membership will be expanded to research organization including research universities, national labs, energy centers, and other research organization. A new "collaborative" membership category will be developed. Potential new members will be invited to join.

6.1.2 – Collaboration with Municipal Utilities: As over 300 California municipal utilities launch or expand EE efforts, they are becoming increasingly aware of the need for, and potential benefits of, new and under-utilized measures to meet EE program goals. The ETCC is responding by promoting coordination and information sharing between ETCC members and municipal utilities.

This collaboration will include sharing information and results connected with upcoming IOU and CEC market studies, measure assessments, and scaled field placement activities. The IOUs will also provide recommendations to municipal utilities that have their own ET programs or are considering launching ET efforts, and may encourage municipal utility ET program staff to attend quarterly ETCC meetings.

Due to the large number of municipalities, their geographical range and varying stages in EE program development, the ETCC will work with conveners such as the largest and most advanced municipalities (SMUD, LADWP, City of Palo Alto, etc.) and municipality-coordinating entities like the Northern California Power Agency and Southern California Public Power Authority.

6.1.3 – Forums and Training: The ETCC will support the Incubation objective under ETP Goal 2 by holding three training sessions every year for researchers to educate them about utility and investor perspectives, challenges, and needs.

6.1.4 – Knowledge Sharing: On a strategic level, the statewide ETP is committed to developing and implementing practices and tools to maximize collaboration and integration among the IOU ETPs. This will include comparing ETP local plans and identifying opportunities to reinforce and maximize statewide coordination and integration, keeping in mind the distinct resources, expertise, and customer base for each IOU.

6.1.5 – Coordination with non-IOU entities: Finally, the statewide ETP will expand statewide emerging technology projects and projects that leverage funding from non-IOU entities. The IOU ETPs will continue to identify and participate in collaborative projects that are co-funded by federal agencies or other large funders and that meet ETP criteria.

6.2 - ETP Coordination with EE Resource & Non-Resource Programs

The ETP maintains crucial touch points with EE resource programs and many non-resource programs, which serve as key clients for the measures that ETP assesses and makes available for implementation. Coordination with these EE programs occurs throughout the ETP screening, selection, assessment, and transfer process.

6.2.1 – Idea Generation Coordination: Ideas for new measures often come from EE program staff or through the professional networks of EE staff. At the screening stage, the ETP relies on input from EE program managers to score measures for assessment. EE program staff also plays a key role in identification of host sites for field assessment projection, scaled field placements, and demonstration showcases. The transfer of new measures from the ETP into EE programs takes place through a close collaboration between the programs.

6.2.2 – Feedback Loop with IOUs and M&V Community: In 2013-2014, the ETP will expand feedback loops with program staff and M&V consultants to increase the understanding by ETP and EE program staff of impacts from each new measure that has been transferred EE programs, including those that do not achieve projected levels of market penetration, energy savings, or demand reduction.

This will take the form of an initial meeting 12 months after a measure is transferred from ETP to an EE program, with a second meeting 24 months after transfer. An additional follow-up meeting will be scheduled three years after transfer, as needed.

6.3 - ETP Coordination with Cross-cutting Programs (Codes & Standards, Statewide M&O, WE&T etc.)

The ETP has a history of productive connections with cross-cutting programs including Codes & Standards and Energy Centers, and has successfully demonstrated that collaboration can maximize the impact achieved by all parties. In addition, SCE's TTC serves as a resource to ETP project managers, providing a unique venue to perform in-house testing of technologies to support ETP goals.

6.3.1 – Assessment Synchronization: In 2013-2014, ETP staff will hold regular conversations with Codes & Standards staff to exchange methods for estimating the impacts of new measures through analysis and testing, and support the advancement of technologies that may be included in future codes and standards and reach codes. Where practical, the ETP will collaborate with Codes & Standards on measure assessments, and will seek to identify and transfer measures with potential to go directly from ETP to Codes & Standards.

6.3.2 – Collaboration with Energy Centers: ETP will continue to grow its multi-faceted collaboration with Energy Centers, where new measures for potential assessment may be suggested by visitors or staff, where some assessments may be conducted in a controlled field environment, and where successful assessments are often showcased in exhibits that educate hundreds to thousands of interested customers.

6.3.3 – Cross-cutting Programs Coordination: The statewide Workforce Education & Training (WE&T) and statewide Marketing, Education & Outreach (ME&O) programs will offer new coordination opportunities. ETP assessments and market and behavioral research may pinpoint marketing and education needs that these two cross-cutting program can deliver. Conversely, these programs can identify opportunities for new or under-utilized measures, and may find potential limitations in EE measures that lend themselves to action by ETP. For instance, a new type of fan that is featured in a WET program could elicit comments by contractors about installation or maintenance issues that the ETP can address or can relay to the product developer or manufacturer. ETP will help identify workforce training needs, as appropriate, for advanced technologies in their early stages of development.

6.3.4 – Feedback Loop with Cross-cutting Programs: As with statewide and local IOU EE Resource and Non-Resource programs, the ETP will expand feedback loops with cross-cutting programs to increase the understanding by ETP and EE program staff of impacts from selected new measure that are relevant to the audiences, staff, and information gathering capabilities of the cross-cutting programs.

6.4 - ETP Coordination with IDSM

ETP has long-standing and strong connections with energy efficiency and demand response (DR) programs, and is poised for broader IDSM integration. In 2013-2014, ETP will undertake a coordinated effort to support innovation in EE, DR, renewable and combined heat and power programs. Among the many examples of this, ZNE new commercial construction, ZNE new residential construction, and ZNE for existing buildings stand out as opportunities to integrate on-site or neighborhood generation, co-generation, EE, and DR opportunities. Under the ETP demonstration showcases Objective 1.4 and Goal 3 described in Section 5 above, residential and commercial sites will be developed featuring integrated energy systems for proof-of-concept, technology and usability assessment, and market exposure.

ETP brings a strong aptitude for IDSM integration, since assessment results for lighting and HVAC control strategies are equally applicable to EE and DR programs. It is natural to expand an ETP assessment to investigate both options with relatively modest incremental efforts, compared to an assessment for just EE

or DR. Several control strategies listed under Action Strategy 1.1.1 in Section 5, above, can potentially be part of such an IDSM assessment.

Similarly, ETP has experience with EE – DR – on-site generation/cogeneration applications. For instance, ETP led efforts in 2007-2008 to obtain a CPUC waiver of EE Policy Manual requirements that might have disallowed incentive payments for the SolarBee water treatment technology, which uses integral onsite solar electric generation to operate.

Going forward, the EE Policy Manual should be revised to reflect a bias towards IDSM and to disambiguate issues like the one that raised questions about the SolarBee technology.

Finally, ETP IDSM coordination will benefit from the existing ETP network of partners described in Section 6.5., below, and elsewhere in Section 6. The statewide IDSM PIP provides additional information on these issues.

The IOUs will coordinate program efforts with the local utility integration teams and the Statewide Integration Task Force to identify successful integration approaches and offerings, potential pilot programs and metrics.

6.5 - ETP Coordination with External Organizations and Entities

Collaboration with external partners and allies plays an essential role in virtually all aspects of ETP operations, from screening and selecting measures for assessment, to performing assessments and scaled field placements, developing demonstration showcases, communicating ETP results, and transferring measures to the market through EE programs and other implementation channels.

6.5.1 – Alliances External Organization: To ensure successful coordination with the full range of external organizations and entities involved in developing new measures, ETP staff will receive explicit assignments and budgets for outreach and conference attendance to maintain a high level of awareness of research and development (R&D) activities across government, utilities, including those located in the Pacific Northwest, agricultural extension and university programs, and private industry, including selected proprietary efforts.

This interaction provides both ideas for new ETP measures and access by the ETP to propose new concepts or modifications to existing research that will result in measures for future ETP assessment and EE deployment. In this way, ETP uses its alliances with external R&D entities to leverage private industry and federally funded technology research and investment for the benefit of California ratepayers.

For instance, CEC ER&DD and The Watt Stopper, Inc. have provided valuable new measures to the ETP and have also been receptive partners, incorporating ideas from the ETP for their new measure R&D.

6.6 – Codes and Standards Integration

When ETP has completed review of a measure, external organizations play a crucial role in disseminating the results before, during, and after the transfer of the measure into EE programs or other implementation channels. For instance, ETP collaborates with industry trade organizations, large tech companies, entrepreneurs, UC Berkeley Center for the Build Environment, consultants, and others on educational outreach for building envelope EE measures.

Another example is ETP work on HVAC measures that may go directly to building standards. In these cases, ETP supports the Statewide Codes & Standards program through at all stages of measure development and evaluation through alliances with the California Building Standards Commission, American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) technical committee members to accelerate building design standards.

On lighting measures, ETP works with the DOE, Environmental Protection Agency (EPA), Illuminating Engineering Society of North America (IESNA), CEC, including the CEC PIER program, and leading lighting manufacturers and consultants.

7. Marketing and Outreach/Education & Training

To maximize the benefits of its work, the ETP delivers information in many forms to many different groups. (The primary means for the ETP to disseminate information is through EE programs, including the Energy Centers.)

Among these benefits, ETP communications on measures that are being transferred or have been transferred to EE programs will assist companies, departments, and governmental entities in understanding EE measures' actual performance, breaking down barriers to proactive implementation.

7.1 – Sharing of Information through ETCC: The ETP partners will continue to utilize the ETCC as a central medium for the delivery of ET information. The ETCC website (www.etcc-ca.com) provides an overview of the ET program, a database of ETP project reports and fact sheets, information on upcoming meetings, and information on hosting an emerging technology project or proposing a measure for consideration.

7.2 – Distribution of Information through Other Sources: The ETCC website is just one of ways the ET program transfers information. Findings, results, and analyses

are delivered to a variety of audiences through one or more of the following mechanisms:

- Providing technical information to Energy Centers run by each of the IOUs, supporting Energy Center information dissemination;
- Providing technical information to utility energy efficiency programs, supporting energy efficiency program information dissemination;
- Speaking opportunities with community organizations;
- Presenting open houses at ETP demonstration showcase sites for key stakeholders and the public at large;
- Meetings and coordination with technology owners, manufacturers, allies, channel partners, trade association members, utilities, investors, and technology developers;
- Presentations at state, local, and national meetings and conferences;
- Analysis and design tools intended for utility energy efficiency program and product developers, technology owners and manufacturers, and others;
- Public relations efforts, such as development and dissemination of press releases, media kits, and articles for trade publications; and
- Organizing and producing the bi-annual Emerging Technology Summit Conference, a collaborative effort among the IOUs with the CEC PIER Program.

8. TRIO and SCE's Technology Test Centers Description

a) (2013-2014: Changed to a element that can be used to support Goal #1) Technology Resource Innovation Outreach (TRIO)

TRIO is a statewide element that aims to draw a greater number of providers of desired, energy saving measures into the utility EE and DR programs by:

- Providing training workshops;
- Providing energy efficiency and demand response "mentoring"; and
- Coordinating with existing clean tech programs (such as the California Cleantech Open and various clean tech business clusters).
- TRIO contribute to the market transformation with efforts that help accelerate the commercialization of energy-efficient measures by reaching out to universities, PIER, investors, and other research organizations to encourage innovative EE and DR concepts. TRIO also reaches out to investor deal flows to find potential energy efficient measures. Determine what technologies the market is demanding.
- Participate and hold roundtable meetings with investors.
- Provide transparency of each IOU's demand side management rebate and incentive processes by providing statewide workshop rotating between IOUs, on "how to" do business with utilities. These workshops are geared toward third party implementers and the requirements necessary to be awarded a purchase order by a utility. These workshops will educate the investor and technology communities on the requirements necessary for doing business with utilities.

- These workshops will include the requirements of measure selection, DSM integration, technical documentation (for example, E-3 calculator, DEER etc.), energy efficient and demand response definitions, and the California Solar Initiative. Investors, entrepreneurs, and manufacturers will become educated about what a utility qualifies as an EE and demand response measure. This qualification will make the measure more viable for investment purposes.

TRIO Coordination & Integration

Statewide IOU coordination will include planning meetings to discuss the workshops and roundtables. Each utility will designate a TRIO contact person to coordinate the workshops. Each workshop is held at a different utility to support statewide participation. Each utility will manage their specific budgets. The criteria used to evaluate measures will be developed through a statewide ETP effort:

- TRIO statewide coordination - There will be planning meetings attended by all California IOUs to discuss workshops and roundtables.

- TRIO coordination with statewide and local EE programs - Meetings will be conducted and include program managers from statewide and local programs to assist in reviewing innovative measures.

- TRIO coordination with cross-cutting - Workshops and roundtables will state the need for cross-cutting programs. Any cross-cutting measure that comes to the TRIO program will be evaluated by cross-cutting program managers.

- TRIO coordination with IDSM - There will be DSM coordination during the workshops, educating the candidates about demand response, California Solar Initiative, and energy efficiency. Training materials will be created that include an explanation of how to incorporate IDSM. The roundtables discussions will also include these materials.

- TRIO Coordination with External Organizations and Entities - TRIO will invite PIER, CalCEF, Cleantech Open, and various universities to education workshops on how to do business with utilities. Workshops will be sponsored by utilities 3 times per year.

TRIO Marketing & Outreach/Education & Training

- TRIO will provide three workshops per year for all stakeholders and roundtables with investors and government programs to provide education. TRIO will outreach by attending and judging innovative competitions at universities and Cleantech Open.

- The TRIO program workshops and roundtable schedules will be posted on the ETCC website. Presentation material from the events will also be posted on the website after the event is held.

b) (2013-2014: To be considered a strategic shared resource for ETP and other IDSM programs; no longer a sub-program of ETP) SCE Technology Test Center

SCE's Technology Test Center is a suite of testing facilities focused on evaluating IDSM technologies in controlled laboratory environments using sophisticated monitoring equipment. The TTC also provides unique capabilities for evaluating performance of emerging technologies. Located in Irwindale, the TTC is currently comprised of several controlled environment chambers and advanced lighting test stands, each equipped with high-tech data acquisition systems and focused on distinct end uses such as: refrigeration, air conditioning, and lighting. Established in 1996, these facilities are widely known for their past accomplishments in testing and promoting energy efficient technologies and strategies.

The TTC test facilities will provide critical services to a wide range of SCE's IDSM programs. The main function is to provide impartial laboratory testing and analysis of technologies in support of various IDSM goals and serve as a resource for Emerging Technology project managers. These activities will be used to expand the portfolio of EE/IDSM measure offerings, quantify energy savings for EE measures, alleviate concerns about performance uncertainties, and verify the feasibility and validity of proposed codes and standards enhancements. A laboratory setting allows for the performance of detailed and replicable tests which are realistic, impartial, and uninfluenced by variables. Tests may be conducted according to industry standard test procedures or based on particular environmental conditions experienced by SCE customers.

TTC staff will also serve a secondary function as a repository of technical information and expertise. The unique knowledge obtained from actually installing and working with equipment will be shared with IDSM program staff, SCE customers, regulatory bodies, industry groups, and other interested parties including IOU laboratories to ensure that IDSM activities are practical.

Outcomes

TTC will contribute to the technology evaluation efforts that accelerate the commercialization of IDSM measures by performing independent, unbiased lab testing of existing products, new technologies and control schemes in support of IDSM and EE goals.

To ensure testing is conducted in the most relevant areas, TTC will actively participate in key industry forums to collect input from major actors including manufacturers, academia, regulatory agencies, EE program staff, and SCE customers to determine areas where testing is needed. Tests will be designed and conducted to deliver results which address the identified needs.

TTC will share findings with interested parties via technical reports, fact sheets, conference papers, presentations, and training classes. Interested parties may include product designers and manufacturers, installation contractors, IDSM programs, and end-users.

TTC will support IDSM programs including Emerging Technologies, Codes & Standards, and Demand Response programs by providing in-house testing capabilities. Many of the projects associated with these projects have testing components that must be conducted in a laboratory environment to reduce the risk of uncontrollable variables affecting the final results. The TTC has unique testing capabilities and few testing facilities in the U.S. have comparable competencies.

TTC will contribute to increased IDSM awareness of California residents by effectively disseminate findings of test projects and lessons learned regarding IDSM benefits and proper application of technologies with diverse audiences.

Most test projects will result in formal test reports posted on statewide websites. In addition to these reports, information will be incorporated into fact sheets, journal publications, conference presentations and proceedings, training classes, industry handbooks, regulatory proceedings, and IDSM program materials.

TTC Coordination & Integration

i. In addition to technology testing, TTC's lab activities will support coordination with SW IOUs, and integration with multitude of IDSM programs. Projects conducted at TTC will be funded by various IDSM programs including Emerging Technologies, Codes & Standards, and Demand Response as well as other IDSM programs. TTC statewide coordination – TTC will engage in SW coordination with IOU labs to ensure avoidance of redundant testing in most applications through effective communications for effective utilization of SW lab resources.

ii. TTC coordination with IDSM – Test facilities will be open to DSM programs where applicable. Results from all projects will be shared with DSM staff and will educate about potential EE opportunities.

iii. TTC Coordination with External Organizations and Entities - TTC will maintain continuous contact with researchers, manufacturers, distributors, and end-users. Relationships will continue to be such that information and advice can be shared freely.

TTC Marketing & Outreach/Education & Training

TTC will produce formal test reports for all technology evaluation projects conducted in the laboratories. Results and lessons learned will be incorporated into many information dissemination activities to diverse audiences. Information will be used in presentations at energy centers, joint IOU events, industry conferences, training classes for SCE employees and contractor groups, fact sheets, and industry publications.

TTC will maintain a website with results of completed projects and updates of projects in-progress.

Quality Assurance and Evaluation Activities

a) Timeframe of process evaluations and quality assurance activities

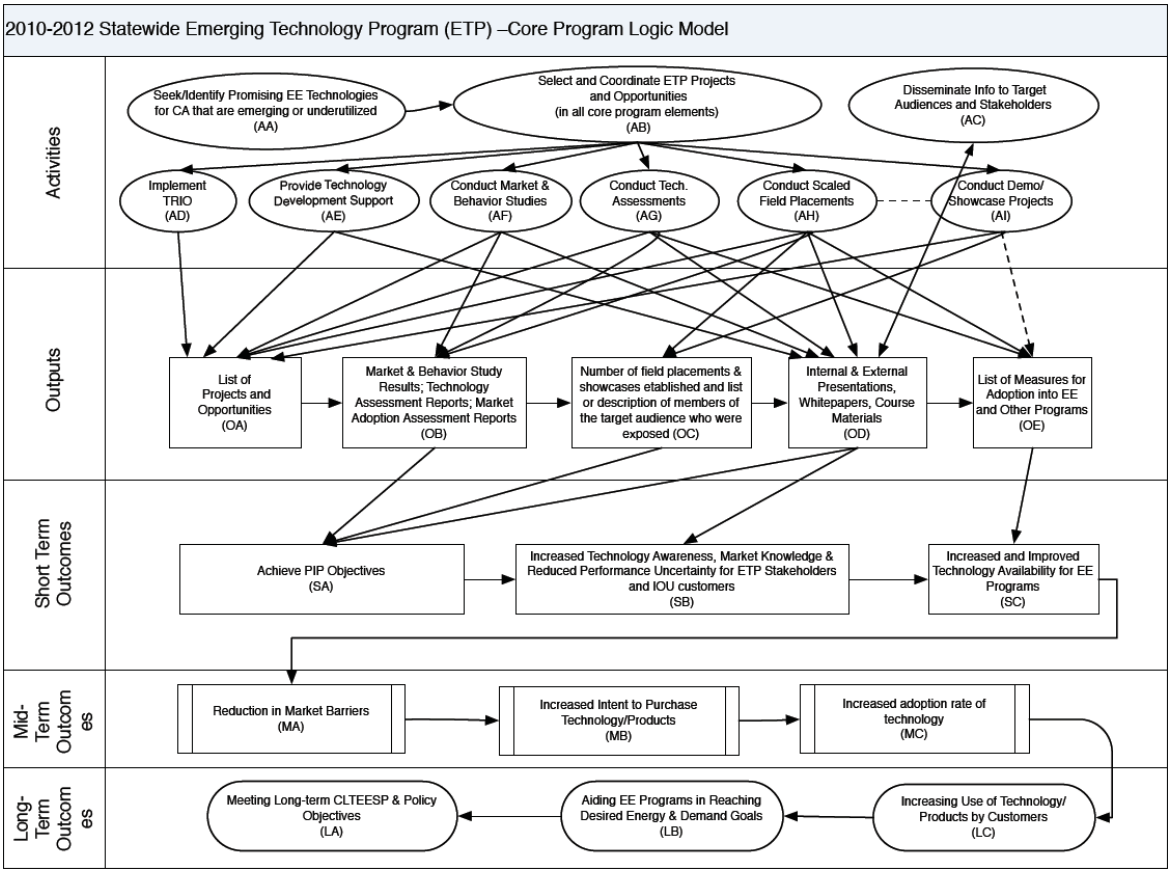
The utilities are proposing to work with the Energy Division to develop and submit a comprehensive EM&V Plan for 2013-2014 after the program implementation plans are filed. This will include process evaluations and other program-specific studies within the context of broader utility and Energy Division studies. More detailed plans for process evaluation and other program-specific evaluation efforts cannot be developed until after the final program design is approved by the CPUC and in many cases after program implementation has begun, since plans need to be based on identified program design and implementation issues.

The four IOUs will coordinate a statewide process evaluation to ensure that new program elements are being implemented as designed. This evaluation may be supplemented by specifically targeted activities that IOU program managers identify for purposes of continuous program improvement. These evaluations will be planned and launched on an as-needed basis.

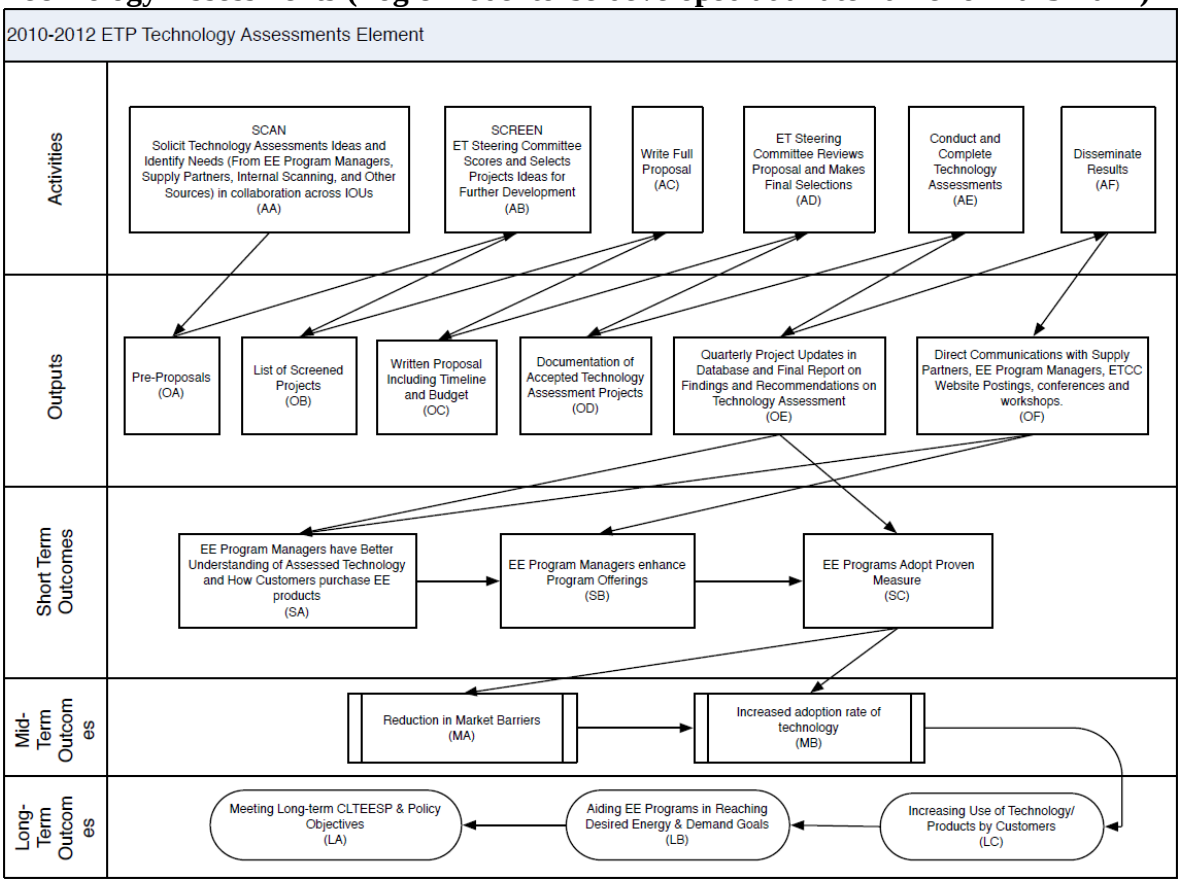
10. Program Logic Model and Performance Indicators (Logic model to be developed at a later time for 2013-2014)

On December 2, 2010, the Commission issued Resolution E-4385, approving Program Performance Metrics (PPMs) for Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company and San Diego Gas and Electric Company for 2010-2012 statewide energy efficiency programs and subprograms. In addition, this Resolution approved updated logic models for the statewide programs. Below are the approved logic models for the Emerging Technologies Program.

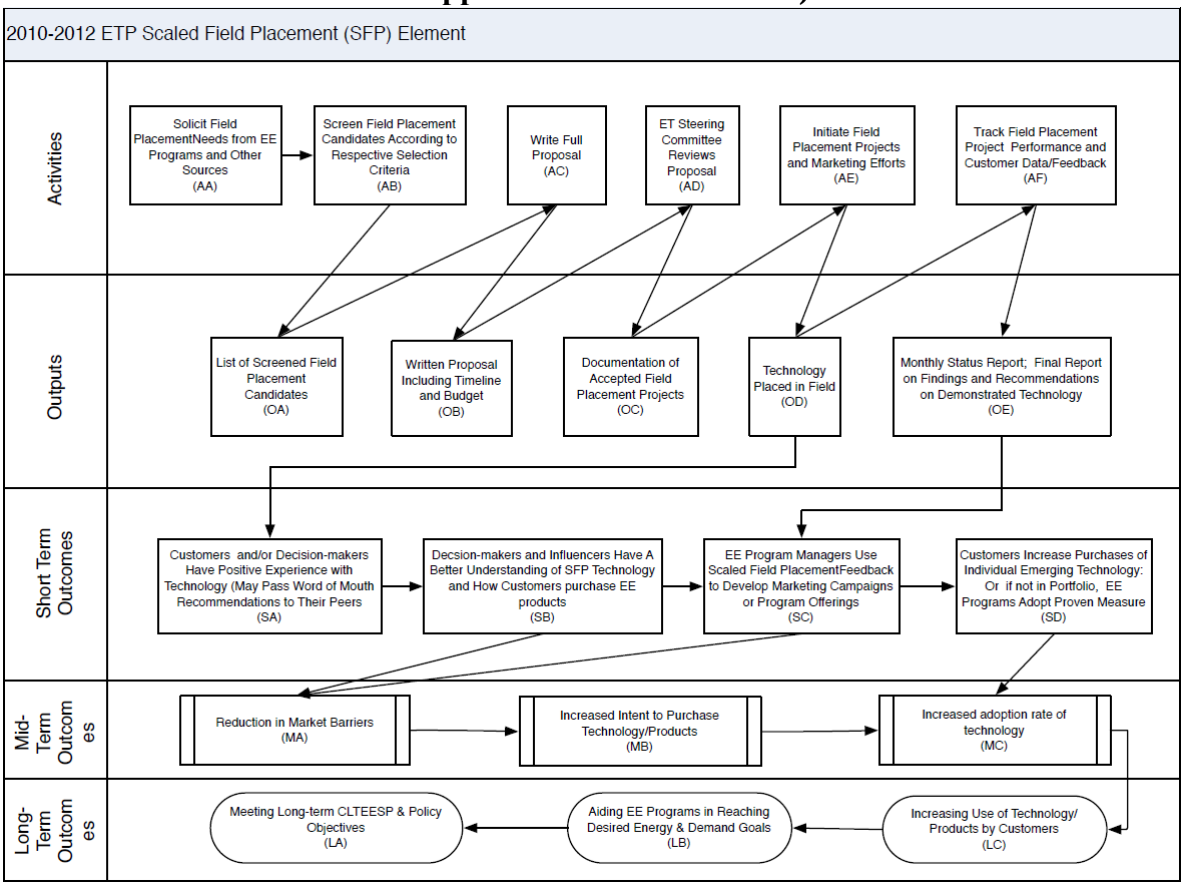
ETP


2010-2012 Statewide Emerging Technology Program (ETP) –Core Program Logic Model
Activities
Seek/Identify Promising EE Technologies for CA that are emerging or underutilized (AA)
Select and Coordinate ETP Projects and Opportunities (in all core program elements) (AB)
Disseminate Info to Target Audiences and Stakeholders (AC)
Implement TRIO (AD)
Provide Technology Development Support (AE)
Conduct Market & Behavior Studies (AF)
Conduct Tech. Assessments (AG)
Conduct Scaled Field Placements (AH)
Conduct Demo/ Showcase Projects (AI)
Outputs
List of Projects and Opportunities (OA)
Market & Behavior Study Results; Technology Assessment Reports; Market Adoption Assessment Reports (OB)
Number of field placements & showcases etablished and list or description of members of the target audience who were exposed (OC)
Internal & External Presentations, Whitepapers, Course Materials (OD)
List of Measures for Adoption into EE and Other Programs (OE)
Short Term Outcomes
Achieve PIP Objectives (SA)
Increased Technology Awareness, Market Knowledge & Reduced Performance Uncertainty for ETP Stakeholders and IOU customers (SB)
Increased and Improved Technology Availability for EE Programs (SC)
Mid-Term Outcomes
Reduction in Market Barriers (MA)
Increased Intent to Purchase Technology/Products (MB)
Increased adoption rate of technology (MC)
Long-Term Outcomes
Meeting Long-term CLTEESP & Policy Objectives (LA)
Aiding EE Programs in Reaching Desired Energy & Demand Goals (LB)
Increasing Use of Technology/ Products by Customers (LC)

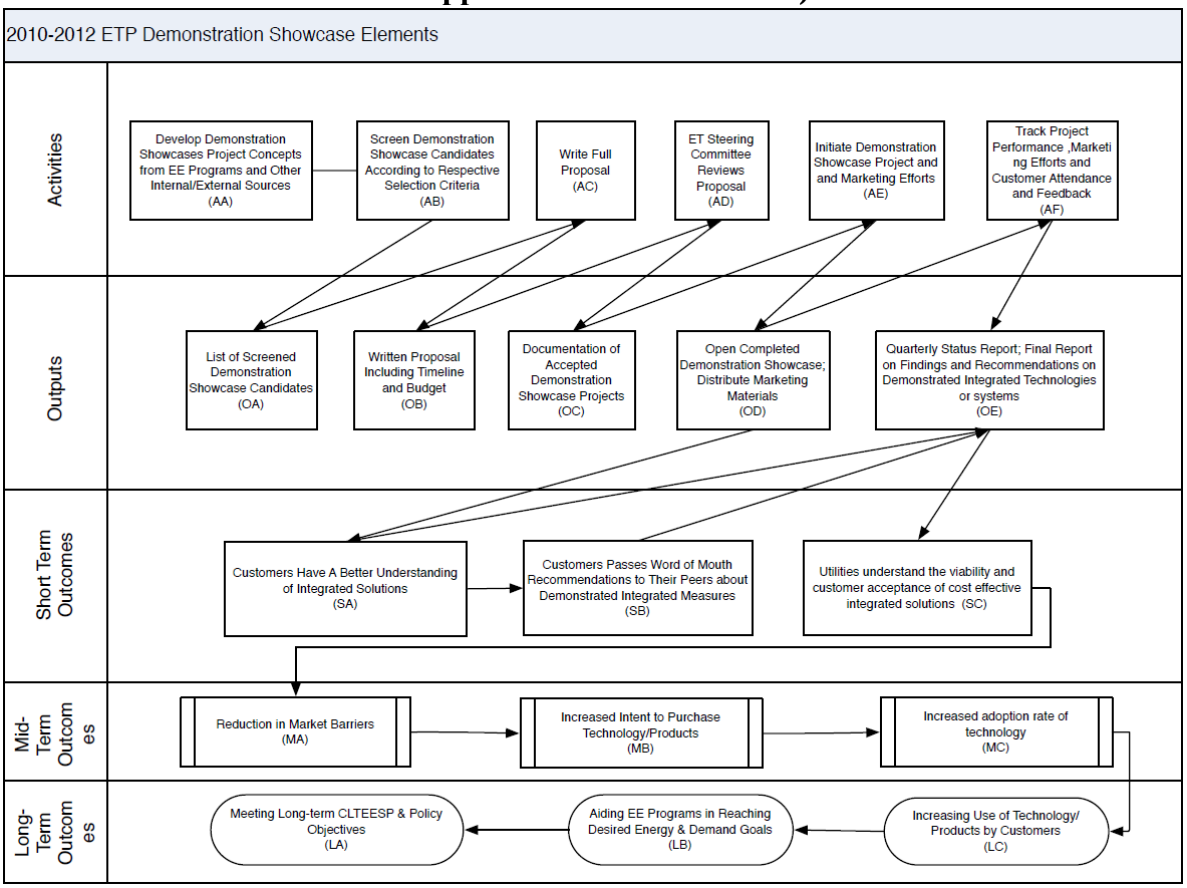
Technology Assessments (Logic model to be developed at a later time for 2013-2014)



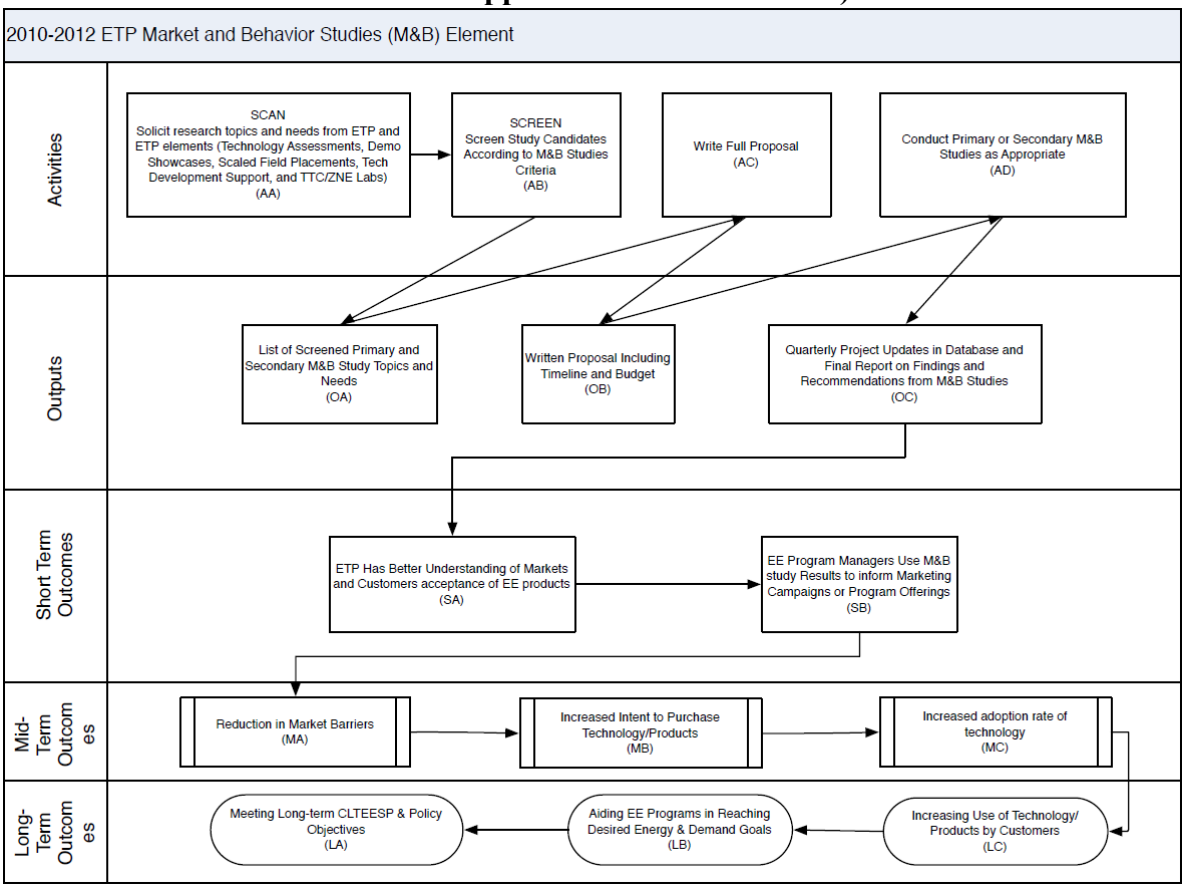
Scaled Field Placements (2013-2014: No longer a sub-program; Changed to an "element" that can be used to support more than one Goal)



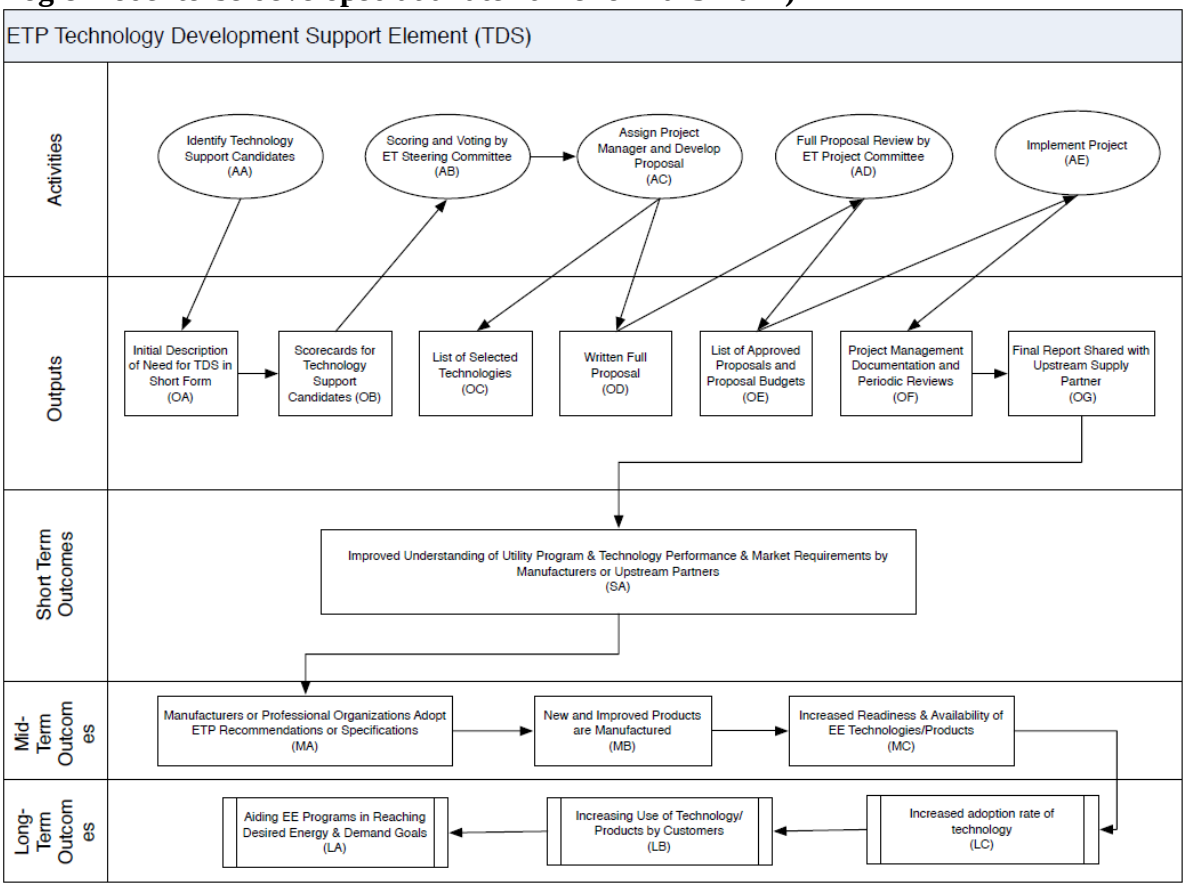
Demonstration Showcases (2013-2014: No longer a sub-program; Changed to an "element" that can be used to support more than one Goal).



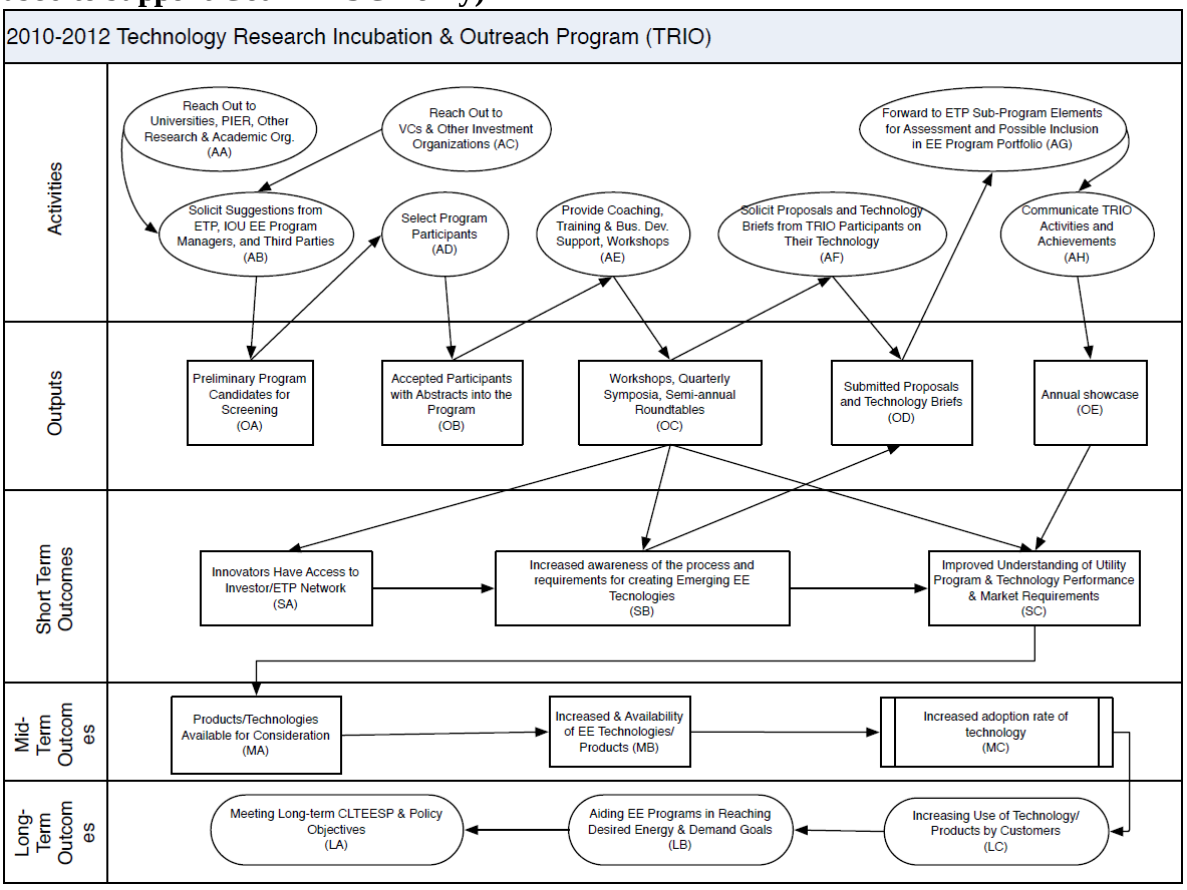
Market and Behavioral Studies (2013-2014: No longer a sub-program; Changed to an "element" that can be used to support more than one Goal).



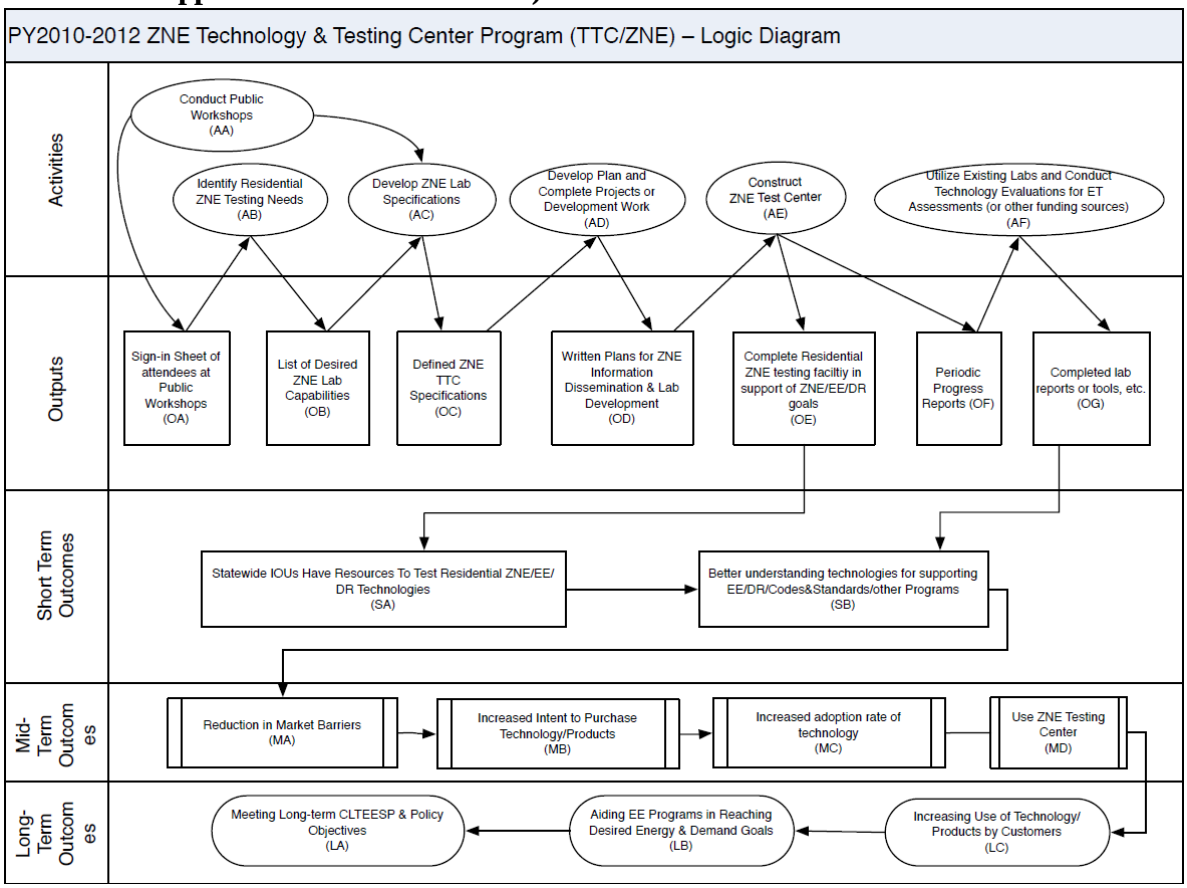
Technology Development and Support (2013-2014: Merged into Sub-program #1. Logic model to be developed at a later time for 2013-2014)



TRIO (2013-2014: No longer a sub-program; changed to a "element" that can be used to support Goal #1- SCE only)



TTC (2013-2014: No longer a sub-program; changed to a strategic resource that can be used to support more than one Goal).



Attachment 1

ET Program 2013-2014 Planning Budget

Tables A and B below represent ETP's Direct Implementation Budget Breakdown Per 2013-2014 portfolio guidance decision. The budget allocation will encompass both short-term and long-term focus activities. In general, activities under Technology Development Support are intended to support long-term focused efforts. Long-term efforts refer to efforts that are intended to yield result in three or more years. For the Technology Assessment and Technology Introduction Support, the allocation of budget is approximately 50% short-term and 50% long-term. For Technology Assessments of new advanced and/or unproven technologies versus emerging and/or under-utilized technologies, the program intends to allocate its budget equally to both categories of technologies.

The information provided is for planning purposes only. Performance against budget allocations will not be tracked; however, reporting CPUC's ET database will be possible provided that capability is built by CPUC.

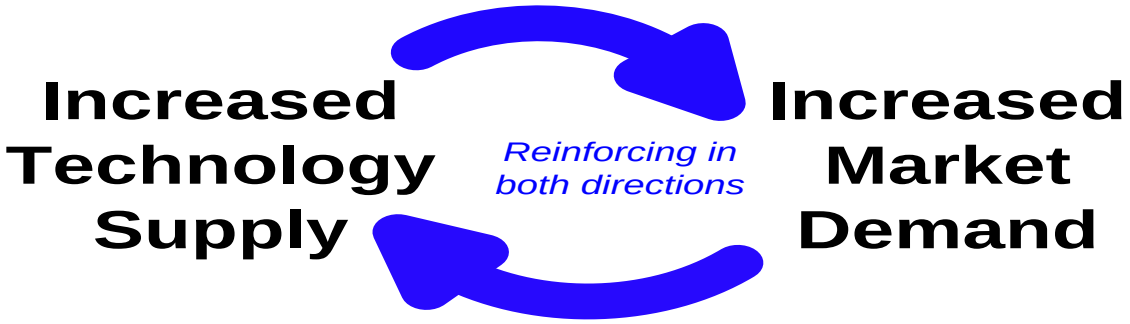
Table A – Project ETP Budget Breakdown by Segment

	Residential	Commercial	Industrial	Agricultural	Total
Technology Development Support	$ 47,788	$ 50,303	$ 18,864	$ 8,803	$ 125,757
Technology Assessment Support	$ 382,293	$ 402,414	$ 150,905	$ 70,422	$ 1,006,034
Technology Introduction Support	$ 526,276	$ 553,974	$ 207,740	$ 96,946	$ 1,384,936
Total	$ 956,356	$ 1,006,691	$ 377,509	$ 176,171	$ 2,516,727

Table B – Project ETP Budget Breakdown by End-Use

	HVAC	Water Heating	Controls	Other	Total
Technology Development Support	$31,439	$31,439	$31,439	$31,439	$ 125,757
Technology Assessment	$251,509	$251,509	$251,509	$251,509	$ 1,006,034
Technology Introduction Support	$346,234	$346,234	$346,234	$346,234	$ 1,384,936
Total	$629,182	$629,182	$629,182	$629,182	$ 2,516,727

Attachment 2



Activities Increasing Technology Supply

- **Basic Research (Not ET)**
  - Perform technology research
  - Fund universities and labs
- **Support Technology Development (ET)**
  - Provide /collect market intelligence
  - Access to testing facilities
  - Contacts for customer testing/feedback
  - Establish standard test procedures
  - Establish baseline performance levels
  - Access to utility personnel for input
- **Outreach (ET)**
  - General outreach efforts
  - Lend credibility to select companies/ technologies
- **FORESEEABLE market demand (ET collaborates w/ EE)**
  - Future codes/stds announcements
  - Communicate future rebate programs (w/specs)
  - Other future adoption incentives

Activities Supporting Increasing Market Demand

- **Assessments – reduce risk (ET)**
  - Work paper data
  - Software updates
- **Scaled Field Placements (ET)**
- **Demonstration Showcases (ET)**
- **Market and Behavioral Studies (ET)**
- **Rebate Programs (EE)**
- **Education / Training (EE)**
- **TOU Rates / Cost Incentives (Regulatory)**
- **Codes & Standards (Codes & Standards)**
- **Social "Green" Marketing (IOU or other)**

Attachment 3

ETP Database Project Naming Convention

The ETP database project naming convention will be as follows:

ETYYUUUNNNN

YY is the project initiation or funding year (e.g., 13 for 2013)

UUU is a three- letter utility descriptor (e.g., SCE, PGE, SCG, SDG, SEM)

NNNN is a four-digit numerical identification code for the project assigned by the IOU.

- The first N is for Program Element (1-Technology Assessments, 7-Technology Development Support,8-Technology Introduction Support)
- The second and third Ns are 01-99 project number sequence
- The fourth N is for project phase
- NOTE - 0 is considered the first phase

Example: ET13SCE1050 - This is a first phase 2013 Technology Assessments project with a project sequence number five.

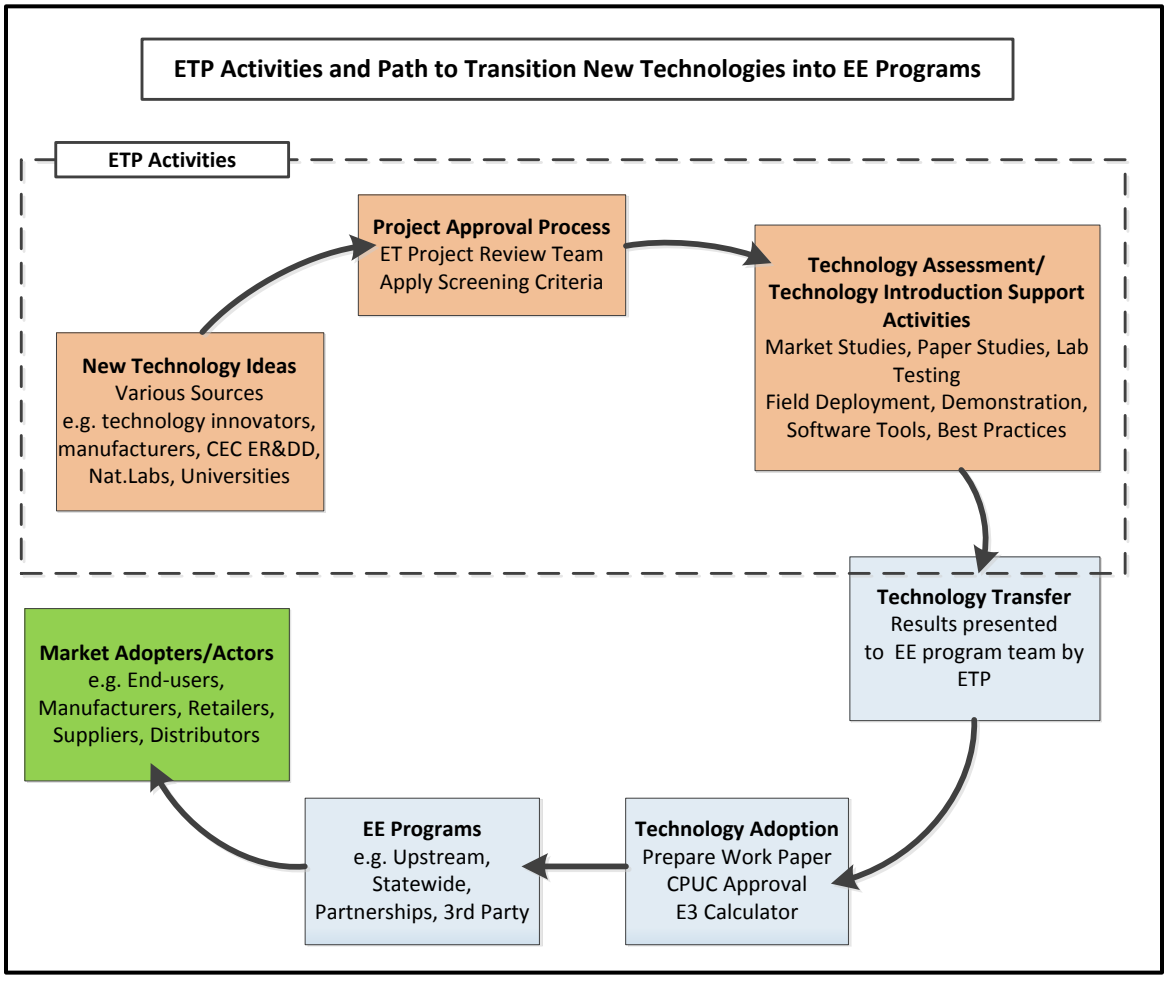
Note that project names will be issued during or after the initial project screening.

The data from these project databases will be extracted and sent to the CPUC under the same naming convention.

Attachment 4

ETP Activities and Path to Transition New Technologies into EE Programs

The diagram below depicts the activities to transition new technologies into utility EE programs. These activities would help transition technologies from various sources, including national labs, universities, manufacturers and technology innovators. The initial review of a technology idea's viability as a rebated measure will be conducted by ETP staff. Following this initial review, ETP staff may determine that additional information is needed and undertake further studies and demonstrations as appropriate. After a technology meets the initial program requirements for rebates, further information must be gathered on the technology's energy savings performance in order to provide the CPUC-required Work Paper that will be used to support energy savings claims.



2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

1. **Program Name:** Emerging Technologies Program (ETP)
   Program ID: SCG3721 – SW-ET-Technology Development Support
   SCG3722 – SW-ET-Technology Assessment
   SCG3723 – SW-ET-Technology Introduction Support
   Program Type: Statewide Core Program

~~1. **Program Name:** Emerging Technologies Program (ETP)~~
~~**Program ID:** SCE-SW-009~~
~~**Program Type:** Core~~

~~Note: The projected program budget shown in Table 1 below was approved in SCE's 2010-2012 EE Compliance Advice Letter 2410-E effective March 24, 2010, per the Energy Division's disposition letter dated April 8, 2010.~~

Comment [SC1]: Include updated language. Regulatory to provide detail.

2. Projected Program Budget Table

Formatted: Indent: Left: 0.25"

Table 1~~: Projected Program Budget Estimates~~

Formatted: Indent: Left: 0.25"

Program #	Main/Sub Program Name	Administrative Amount	Marketing Amount	Direct Implementation Amount	Incentive Amount	Total Program Budget Amount
	SW Emerging Technologies Programs					
3721	SW-ET-Technology Development Support	$9,051	$600	$116,106	$0	$125,757
3722	SW-ET-Technology Assessment	$72,403	$4,800	$928,831	$0	$1,006,034
3723	SW-ET-Technology Introduction Support	$99,831	$6,600	$1,278,505	$0	$1,384,936
	TOTAL:	**$181,285**	**$12,000**	**$2,323,442**	**$0**	**$2,516,727**

3. Program Mission

The mission is to support "increased energy efficiency market demand and technology supply" (the term supply encompassing breadth, depth, and efficacy of product offerings) by contributing to development, assessment, and ~~deployment~~ introduction of new and under-utilized energy efficiency (EE) measures (that is, technologies, practices, and tools), and by facilitating their adoption as measures supporting California's aggressive energy and demand savings goals.

Increased market demand and increased technology supply are reinforcing effects – each working to spur the other. As market demand increases, market-pull leads to technology supply increases. As technology supply increases, changes in perceptions and attitudes, work to stimulate increased market demand.

Increased market demand works to address energy efficiency goals in both the near term and longer term. In the near term, increased market demand will lead to higher adoption rates of currently available energy efficiency measures. Market demand can be increased by either reducing barriers to adoption or through increasing incentives to adopt. In either case, as barriers (disincentives) shrink relative to incentives, adoption rates will

grow. One example of a barrier to EE measure adoption is performance uncertainty, where an incentive example is an environmental concern.

A longer-term effect of increased market demand for EE measures is the spurring of market pull for yet-to-be-developed EE measures. Generally, market-pull product development usually takes place when some specific need is discovered in the marketplace that currently is either being ignored, not well served, or just not recognized. As technology developers become aware of unmet consumer needs for EE measures, development will be undertaken to fulfill those needs in the future. Market pull created by increased market demand will result in longer-term increases in technology supply.

Increased technology supply also works to address energy efficiency goals in both the near term and longer term. In the near term, increased technology supply will lead to more EE measure adoption at current levels of market demand. Factors contributing to this increase would be more applications for which EE measures are available, lower prices due to competition, and increased measure effectiveness. Technology can generally be increased through improving incentives to invest in new measures or decreasing the difficulty of developing and launching new measures. In either case, as difficulty shrinks relative to incentive, development of new technology supply will grow. One example of decreasing the difficulty of developing an EE measure is a pre-existing testing protocol. An example of incentive to invest in a new technology is a building code driving future customer purchases.

A longer-term effect of increased technology supply of EE measures is the development of future market demand. Generally, as breadth, depth, and efficacy of available products in a new market segment increases, consumer perceptions and attitudes will change. Items previously viewed as niche become more mainstream. Energy usage considerations will become a more expected aspect of the products consumers purchase. In this way, increases in technology supply will result in longer-term increases in market demand. ~~The ETP has established three goals and eleven objectives as the means to achieve its mission. Section 5 of this PIP elaborates these goals in detail.~~

~~**ETP Goal #1:** Increased adoption of EE measures as defined in the Program Performance Metrics in Section 5 (increased market demand)~~
- ~~**ETP Objective 1.1:** Perform technology assessments~~
- ~~**ETP Objective 1.2:** Transfer measures into EE programs~~
- ~~**ETP Objective 1.3:** Conduct scaled field placements~~
- ~~**ETP Objective 1.4:** Develop demonstration showcases~~
- ~~**ETP Objective 1.5:** Perform market and behavioral studies~~

~~**ETP Goal#2:** Increased EE technology supply (increased technology supply)~~
- ~~**ETP Objective 2.1:** Support technology development~~
- ~~**ETP Objective 2.2:** Perform business incubation~~

~~**ETP Goal #3:** Support of the Strategic Plan and related solutions, including zero net energy (ZNE)~~
~~**ETP Objective 3.1:** Advance innovative measures and/or strategies~~
~~**ETP Objective 3.2:** SCE Technology Test Centers activities including create ZNE test facility~~

By advancing these goals and objectives, the ETP supports California's energy and demand savings targets as defined by the following regulatory and legislative documents:

- The Energy Efficiency Rulemaking 09-11-014 providing guidance for 2013-2014 portfolios (2013-2014 Decision)
- The 2010-2012 Energy Efficiency (EE) Application 08-07-021, et. al. and related CPUC guidance in Rulemaking 06-04-010;
- The California Long Term Energy Efficiency Strategy (Strategic Plan), with particular focus on the big, bold initiatives in the domains of residential and commercial ZNE buildings, HVAC industry transformation, as well as lighting innovation; and
- The California Global Warming Solution Act of 2006 (Assembly Bill 32).

The ETP will leverage all complementary efforts and entities in support of its mission, including other statewide and local IOU EE programs; statewide utilities' emerging technologies programs; and EE innovation activities by external organizations such as private industry, industry trade organizations, corporate laboratories, CEC Energy Research & Development Division (ER&DD), U.S. DOE and national laboratories, and regional, national and international ETP partners including utility, academia, non-governmental organizations, and other market stakeholders.

Section 4 of this PIP describes the rationale for and expected outcome from the ETP in relation to market and technology barriers and the Strategic Plan. ~~Six~~ Three sub-programs ~~elements~~ central to the ETP's ability to address its mission and achieve its goals and objectives are also described in Section 4, below. These sub-programs ~~elements~~ drive the process of evaluating the application of energy-saving measures in real-world settings and building a pipeline of measures to consider for deployment through utility EE programs.

4. Program Rationale & Expected Outcome

California consumers report they are eager for solutions to climate change and other environmental issues, and California's IOUs have implemented a vast array of programs to support the purchase and use of EE measures. Many of these programs have seen tremendous success, yielding energy and demand savings that have reduced the need for new generation, transmission, and distribution facilities, lowered ratepayer energy bills, and avoided tons of greenhouse gas emissions.

To meet California's ambitious EE goals, new measures must be added to ensure program success in ~~2009-2011 2010-2012~~ 2013-2014 and beyond. However, a host of market barriers can delay new measure introduction and adoption. Delayed adoption in

turn diminishes, slows, or even eliminates the potential energy and environmental benefits of new measures, as well as the attractiveness of investing in and developing these measures.

To achieve success, the ETP will focus its operations on ~~six~~three core sub-programs ~~s elements~~. ~~This is a change from the 2010-2012 in consolidation effort from six sub-programs (also described as "elements" in the 2010-2012 PIP).~~ Each of the ~~the new~~ sub-programs~~se elements~~ is~~are~~ briefly presented within this section (Section 4) of the program implementation plan. Note: With the experience gained from implementing the 2010-2012 program, it becomes clear that the 2010-2012 program "elements" are better understood as *tactics*, or tools, that can be utilized to address more than one ETP goal; there is not a one-to-one mapping of tactic to goal. A tactic or a set of tactics may be applied in coordination to advance overall ETP goals. Accordingly, the descriptions of the old elements have been refreshed for 2013-2014 to reflect broader program elements. Please see Table 2 for a depiction of how the 2010-2012 elements have been distributed. Please also refer to each section's subheading for the updated 2013-2014 categorization of these approaches.

Formatted: No bullets or numbering

1. **Technology Development Support (TDS)**
2. **Technology Assessments (TA)**
3. **Technology Introduction Support (TIS)**

Table 2. Mapping of the 2010-2012 "elements" into the new 2013-2014 sub-programs

2013-2014 Subprogram	Goal	*Merged 2010-2012 ETP "Elements"
Sub-program #1 Technology Development Support Sub-program	Increased EE technology supply (Support the development of new technologies)	• Technology Development & Support • TRIO • Market Studies and Behavioral Studies
Sub-program #2 Technology Assessments Sub-program	Increased number of measures offered by EE programs (Identify promising technologies for EE programs)	• Technology Assessments • Demonstration Showcases • Market Studies and Behavioral Studies • Technology Test Center (SCE only)
Sub-program #3 Technology Introduction Support Sub-program	Support technology introduction and whole-building deep-energy reduction solutions ("Seed" market demand among targeted end users)	• Scaled Field Placements • Demonstration Showcases • TRIP Solicitations (Implemented ~~starting~~ in 2012 by SCE only. New to ETP in 2013-2014.) • Market Studies and Behavioral Studies

~~* HVAC Statewide Program's HTSDA Subprogram has been integrated in to the ETP program in 2013-2014 and will be implemented in the new three ETP subprograms.~~

The ETP has established three goals and seven objectives as the means to achieve its mission. Section 5 of this PIP elaborates these goals in detail.

ETP Goal#1: Increased EE technology supply
ETP Objective 1.1: Support technology development
ETP Objective 1.2: Conduct technology developer outreach through TRIO

ETP Goal #2: Increased number of measures offered by EE programs
ETP Objective 2.1: Perform Technology Assessments
ETP Objective 2.2: Transfer measures into EE programs

ETP Goal #3: Support technology introduction and whole-building deep-energy reduction strategies
ETP Objective 3.1: Conduct field deployments

Comment [SC2]: Removed reference to HTSDA in the table and added footnote. Also modified header.

Formatted: Font: Georgia, Font color: Black, Kern at 12 pt

Formatted: Font: Not Bold

Formatted: Font: Not Bold, Highlight

Comment [SC3]: (Additonal language needed for PG&E's ZNE piece)

Formatted: Highlight

Formatted: Font: Not Bold

Formatted: Font: 12 pt

Formatted: Font: 12 pt

Formatted: Font: 12 pt

ETP Objective 3.2: Conduct technology demonstrations

ETP Objective 3.3: Conduct Technology Resource Innovation Program (TRIP) Solicitations

~~1. Technology Assessments~~

~~Scaled Field Placements~~

~~Demonstration Showcases~~

~~Market and Behavioral Studies~~

~~Technology Development Support~~

~~Business Incubation Support~~

Table 3 highlights the various parameters to highlight the distinctions between the new three ETP subprograms for 2013-2014

Table 3. Distinction Between ETP Sub-programs

Parameter	**Technology Development Support**	**Technology Assessments**	**Technology Introduction Support**
Purpose	specifications, outreach → mid- to long-term EE technology supply	performance, cost data, market potential → EE programs	market exposure
Theme	spur technology development	evaluation	first-hand experience/exposure
Units installed	none to one lab evaluation in some cases	one to a few (exceptionally, many) or entire floor/building/facility	a few to many (or entire floor/building/facility)
Number or sites	none to one	one to a few (exceptionally, many)	one to a few (exceptionally, many) as strategically valuable
Unique measures	one up to whole system	one up to whole system	one up to whole system or whole building

Formatted: Font: 12 pt

Formatted Table

Customer involvement	none	one or a few users	few to many users or viewers
Duration	short to medium	medium to long	as needed (typically long)
Data collection	detailed	detailed	none to moderate
Preferred Dissemination mechanism	printed report, outreach, & other media	printed report & other media	printed report & other media along with first-hand experience and word of mouth

Formatted: Font:11.5 pt
Formatted: Font:11.5 pt
Formatted: Font:11.5 pt
Formatted: Font:11.5 pt
Formatted: Indent:Left: 0"
Formatted: Font:12 pt, Highlight

~~Note: Although a key element, SCE's Technology Test Centers are not presented within this PIP as a core element. Please refer to Section 8e for narrative of this subprogram element~~resource.

Program Design to Overcome Barriers

The ETP focuses on ~~overcoming~~ four priority market and technology barriers:

A. Information or search costs - the value of time spent identifying, learning about, and locating EE measures.

B. Performance uncertainties – the difficulties and costs of acquiring the information needed to evaluate performance claims for EE measures.

C. Organizational practices or customs – behavior by companies, departments, professional groups, and government entities that has been institutionalized and may discourage forward thinking and proactive implementation of EE measures.

D. Product or service unavailability – limited supply and/or distribution of EE measures. For instance, a customer may want to buy task lights using solid-state lamp technology, but finds that vendors and distributors cannot meet the customer's volume requirements or other specifications.

In addition, other EE programs and market factors will have responsibility for, and ETP will contribute to, actions to overcome the following customer barriers.

- **Hidden costs** – unexpected costs emerging after the initial decision to implement an EE measure. For instance, a hidden cost under the Big, Bold strategies would be the expense of training contractors on new types of lighting or HVAC measures.
- **Asymmetric information and opportunism** – concerns about reliability/applicability of measure developer and vendor claims. Collaborating with the work of universities and technical information providers, such as E Source, the ETP can act as a resource to assist EE programs in addressing these claims.

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

The statewide IOUs' ~~expansion~~ revision of the ETP scope for 2013-2014~~0 2012~~ to include ~~six~~ three sub-programs ~~elements~~ represents a response mindful of insights from previous ETP program years and past ETP EM&V studies. The IOUs will ~~apply~~ utilize these sub-program elements in a comprehensive effort to address the range of EE market barriers that ETP can either influence directly or through efforts supporting other EE and IDSM programs. Following are descriptions of the 2010-2012 six ETP elements and how they have been re-characterized as sub-programs ~~or tactics~~ in 2013-2014. Descriptions include ~~with~~ supporting rationale, how each contributes to overcoming one or more market or technology barriers, and expected outcomes.

1. **Technology Assessments Subprogram** – (2013-2014: Changed to Subprogram #2; please see Table 2)

   a. Energy efficient measures that are new to a market or under-utilized for a given application will be evaluated for performance claims and overall effectiveness in reducing energy consumption and peak demand. ET assessments may utilize data/information from ~~three~~ different sources including: *in situ* testing (customer or other field sites), laboratory testing, or paper studies may be used to support assessment findings. In addition to other findings and/or information, assessments typically would generate the data necessary for EE rebate programs to construct a work paper estimating energy and demand savings over the life of the measure. Assessment proposals are screened before an assessment is initiated. The screening process considers:
      - The measure's alignment with EE program strategy and Strategic Plan goals;
      - The measure's projected magnitude of contribution towards kWh and kW reduction and/or Strategic Plan goals. This includes both the effectiveness of an individual measure and the potential number of adopted measures;
      - The degree to which the assessment output will incrementally impact the measure's adoption rate;
      - Information necessary to be generated for EE program inclusion and the effectiveness of an assessment in producing this information; and
      - Resources (expense, labor) necessary to execute the assessment.

      To ensure that technology lab assessments can be conducted properly, state-of-the-art test facilities staffed with knowledgeable engineers and scientists will be available to ETP project managers. These facilities will be focused toward broad initiatives like ZNE, as well as specific end-uses, such as refrigeration, lighting, water heating, and air conditioning. In all respects, they will allow independent verification of performance claims and quantification of energy and demand savings.

b. Rationale
The assessment function is a contributor to the transfer of promising measures into the utility portfolio.

c. Barriers addressed
Assessments address information or search costs, performance uncertainties, organizational practice or customs, as well as contributing to efforts by others to overcome hidden costs and asymmetric information and opportunism. For instance, assessment reports reduce the time that IOU customers must spend looking for and confirming the performance of EE measures – either directly when the customer reads the ETP report, or indirectly, when the customer receives education or marketing material through EE channels based on ETP assessment findings.

Similarly, ETP communications on measures that are being transferred or have been transferred to EE programs will assist companies, departments, and governmental entities in understanding EE measures' actual performance, thereby breaking down barriers to proactive implementation.

d. Expected outcomes
Technology assessments will contribute to increased measure awareness, market knowledge and reduced performance uncertainties for ETP stakeholders and IOU customers. Studies will aid in the acceptance and adoption of new technologies, especially those technologies which will be used in EE portfolios. This will lead to changes in organizational practices and customs that may otherwise limit EE measure procurement and application.

Technology assessments will also contribute to increased and improved technology supply, leading to further reductions in market barriers, increased intent to purchase/employ measures, and more EE rebates issued. Over time, they will support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

Formatted: Font: 12 pt

2. **Scaled Field Placements** – (2013-2014: no longer a sub-program, but considered one of many possible "elements" to support Subprogram #3, Technology Introduction Support. Please see Table 2).

a. These projects consist of placing a number of measures at customer sites as a key step to gain market traction and possibly gain market information. The measures will typically have already undergone an assessment or similar evaluation to reduce risk of failure. While the number of units in scaled field placements will vary widely, numbers typically larger than in an assessment of the technology are expected. A very simple example of a scaled field placement is to give 50 office managers an LED task light. Monitoring activities on each scaled field placement will be determined, as appropriate.

~~The following table highlights the distinctions between technology assessments, scaled field placements, and demonstration showcase.~~

~~*Parameter*~~	~~Technology Assessments~~	~~Scaled Field Placements~~	~~Demonstration Showcases~~
~~*Purpose*~~	~~performance, cost data → EE programs~~	~~market traction~~	~~Visibility~~
~~*Theme*~~	~~evaluation~~	~~first-hand experience~~	~~Exposure~~
~~*Units installed*~~	~~one to a few (exceptionally, many)~~	~~a few to many~~	~~one (or entire floor/building/facility)~~
~~*Number*~~	~~one to a~~	~~a fe~~	~~One or more as~~

Formatted: Left, Indent: Left: 1"

Formatted: Left, Indent: Left: 1"

Formatted: Left, Indent: Left: 1"

Formatted: Left, Indent: Left: 1"

Formatted: Left, Indent: Left: 1"

~~*or sites*~~	~~few (exceptionally, many)~~	~~w to many~~	~~strategically valuable~~
~~*Unique measures*~~	~~One~~	~~one~~	~~more than one measure up to whole systems (exceptionally, just one)~~
~~*Customer impact*~~	~~one or a few users~~	~~few to many users~~	~~large number of viewers~~
~~*Visibility*~~	~~very little~~	~~targeted~~	~~Public~~
~~*Duration*~~	~~as needed for data collection~~	~~life of measure~~	~~duration of public interest / impact~~
~~*Data collection*~~	~~Detailed~~	~~none to moderate~~	~~none to moderate~~
~~*Dissemination mec*~~	~~printed report & othe~~	~~first-hand ex~~	~~short-term exposure and word of mouth~~

Formatted: Left, Indent: Left: 1"

Formatted: Left, Indent: Left: 1"

Formatted: Left, Indent: Left: 1"

Formatted: Left, Indent: Left: 1"

Formatted: Left, Indent: Left: 1"

Formatted: Left, Indent: Left: 1"

Formatted: Indent: Left: 1"

~~*hanism*~~	~~r media~~	~~perience and word of mouth~~	

b. Rationale

Scaled field placements work under the premise that end-users or stakeholders with adoption influence (installers, builders, procurement officers) will be positively influenced by first-hand experience utilizing a measure and that this first-hand experience will lead to future measure purchases/use. This method of influence is fundamentally different from assessments that influence through information dissemination via a report or other results media.

Scaled field placements will be most effective when:

- The stakeholder gaining exposure has the potential to influence a large number of future purchases/uses. Example: Placing a high-efficiency air conditioning unit with several large HVAC contractors. "Potential to influence" is a broad term. Influence of the participant stakeholder could stem from purchase decision power, high frequency of interactions with other potential adopters, or status as a thought leader; and
- First-hand experience is projected to be more influential for a measure than less costly dissemination mechanisms such as printed information or media. Technology complexity and concern regarding human factors are potential causes for first-hand experience to be more influential than printed media. Example: Placing energy efficient retail lighting at a Wal-Mart, Target, and Home Depot store.

c. Barriers addressed

Scaled field placements address Information or search costs, performance uncertainties, organizational practice or customs, as well as contributing to efforts by others to overcome hidden costs and asymmetric information and opportunism. For instance, scaled field placements reduce the time that large-scale decision makers and decision influencers must spend looking for and confirming the performance of EE measures – as first-hand experience eliminates these needs.

d. Expected outcomes
Scaled field placements will contribute to increased measure awareness, market knowledge and reduced performance uncertainties for ETP stakeholders and large-scale customer decision makers and decision influencers. This will lead to changes in organizational practices and customs that may otherwise limit EE measure procurement and application.

Scaled field placements can also contribute to a market tipping point, in which an influential buyer or decision maker responsible for large volume purchase decides to specify the EE measure – thus creating a spike in market demand and exposure for many people who experience the measure once it is implemented. Over time, scaled field placements may support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

3. **Demonstration Showcases** – (2013-2014: no longer a sub-program, but considered a "elements" that can support multiple sub-programs as needed. Please see Table 2).

Formatted: Font: 12 pt, Not Bold

a. These possibly large-scale projects will expose measures to various stakeholders utilizing *in situ*, real-world applications and installations. Monitoring activities on demonstration showcases will be determined, as appropriate. For instance, a demonstration showcase for ZNE residential or commercial new construction or for a ZNE existing building could take a form similar to projects performed as part of the Advanced Customer Technology Test for Maximum Energy Efficiency (ACT2) project in California 1990, creating broad public and technical community exposure. Another example would be a demonstration showcase residential or commercial building highlighting LED lighting technologies to create visibility and market awareness for building contractors, architects, and electricians.

Key attributes of a demonstration showcase is that it is open to the public or to an interest group (for example, a super-low energy data center that is open to data center industry professionals), that many viewers are encouraged to visit, and that may highlight a systems approach rather than an individual measure (this last point is optional, as in the case of the previously cited LED lighting showcase). The actual number of customers or viewers exposed to the showcase will depend on the technologies being demonstrated, market segment and other variables.

b. Rationale

Demonstration showcases provide a unique opportunity for measures and systems to receive broad exposure, and for numerous visitors to "kick the tires," or at least experience the measure in an informal, real-world setting. The combination of large numbers of customers and other stakeholders experiencing the measure with the opportunity to return to the showcase with friends, family, and professional associates, creates a powerful "conversion" experience that enhances diffusion and market penetration. Note that this is very different from the experience of being marketed to or being sold the measure in a purchasing environment.

c. Barriers addressed

Demonstration showcases address information or search costs, performance uncertainties, organizational practice or customs, as well as contributing to efforts by others to overcome hidden costs and asymmetric information and opportunism. For instance, demonstration showcases reduce the time that IOU customers must spend looking for and confirming the performance of EE measures – either directly, when the customer visits the demonstration showcase site, or indirectly, when the customer receives educational or marketing material through word-of-mouth or EE channels.

Similarly, in-person exposure, word-of-mouth, media or ETP/EE communications on demonstration showcase features, performance, and impressions will assist representatives of companies, departments, and governmental entities in gauging EE measures' actual performance thereby breaking down barriers to proactive implementation.

d. Expected outcomes
Demonstration showcases will contribute to increased measure awareness, market knowledge and reduced performance uncertainties for ETP stakeholders and IOU customers. This will lead to changes in organizational practices and customs that may otherwise limit EE measure procurement and application.

Demonstration showcases, like scaled field placements, can contribute to a market tipping point, in which one or more influential "connectors" or "mavens" experiences and recommends the EE measure to many friends and colleagues – thus creating a spike in market demand and exposure for many more people who experience the measure once it is implemented. Over time, they will support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long-term Strategic Plan and policy objective.

4. **Market and Behavioral Studies** – (2013-2014: no longer a sub-program, but considered a "element" that can support multiple sub-programs as needed. Please see Table 2).

Formatted: Font: 12 pt, Not Bold

a. These projects involve targeted research on customer behavior, decision making, and market behavior to gain a qualitative and quantitative understanding of customer perceptions, customer acceptance of new measures, and market readiness and potential for new measures.

Studies may involve primary research, such as studies of potential measure impacts and barriers, market segment needs and gaps, technology performance gaps, pre-studies to qualify potential measures and sites for scaled field placements and demonstration showcases, measure usability studies, long-term market potential studies for the ETP, and the like.

Specific examples of primary market and behavioral research include:
- User feedback gathered on high-efficiency HVAC units at big-box stores;
- Ethnographic studies to see how automated building system diagnostic applications would fit into daily operations at customer site;
- Lab-based observational studies of user behavior while using LED task lighting under controlled conditions;
- Usability studies for home energy monitoring and control systems; and
- Survey-based discrete choice analysis of features that customers prefer in high-efficiency appliances or industrial process controls.

Studies may also include secondary research based on the wealth of studies being conducted in the rapidly growing energy behavior field.

b. Rationale

Measure adoption is often impacted by customer/market perception and acceptance. Market and behavioral analysis may identify potential barriers to adoption early in the process. Results can provide crucial insights at multiple points in technology development, assessment justification, and transfer to and deployment by EE programs. Additionally, market and behavioral studies may be executed independently of a specific measure where this information is valuable to identify new markets or segment opportunities, or to advance one or more of the ETP objectives in other ways.

c. Barriers addressed

Market and behavioral studies address information or search costs, performance uncertainties, organizational practice or customs, as well as contributing to efforts by others to overcome hidden costs and asymmetric information and opportunism. For instance, market and behavioral study reports reduce the time that IOU customers must spend looking for and confirming the human factors performance aspects of EE measures – either directly, when the customer reads the ETP report, or indirectly, when the customer receives educational or marketing materials through EE channels based on ETP market and behavioral study findings.

Similarly, ETP communications about market and behavioral studies for measures that are being transferred or have been transferred to EE programs will assist companies, departments, and governmental entities in understanding EE measures' actual performance, including human factors, breaking down barriers to proactive implementation. They can also help product developers and manufacturers identify and target unmet customer needs, thus enabling development and deployment of new or better products, such as efficient consumer electronics or CFLs that better meet customer expectations.

d. Expected outcomes

Market and behavioral studies will contribute to increased measure awareness, market knowledge and reduced performance uncertainties for ETP stakeholders and IOU customers. This will lead to changes in organizational practices and customs that may otherwise limit EE measure procurement and application. Market and behavioral studies will also contribute to increased and improved technology supply leading to further reductions in market barriers, increased intent to purchase/employ measures, and more EE rebates issued. Over time, they will support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

5. **Technology Development Support** – (2013-2014: Merged into Subprogram #1, see Table 2)

   a. The ETP will look for targeted opportunities to support energy efficiency product development. Product development is the process of taking an early-stage technology or concept and transforming it into a saleable product. (Early-stage technologies are often the output of R&D work, hence product development bridges the gap between R&D and the market.) An example of an early-stage technology is a light-emitting diode. The product development process has resulted in televisions, computer monitors, illuminated signs, and lighting fixtures.

   b. Rationale

   Product development is best performed by private industry. There are opportunities, however, where the IOUs are well qualified or in a strong position to undertake ~~very~~ targeted, cost-effective activities which provide value in support of private industry product development efforts. (Examples of activities include providing customer contacts for field evaluations, making lab testing facilities available to companies without this capability, or developing standard testing protocols. See Section 5, Goal #2, Objective 2.1 for a complete description of potential opportunities.) California has a vested interest in seeing EE products create positive impressions on consumers in the areas of performance and quality, as consumers may project a poor experience with one EE measure onto other EE measures. Technology development support can aid these efforts. As private industry is generally best positioned to perform product development, it is important during the screening process to establish the incremental value-added of these ETP activities for these opportunities. Attributes of potential opportunities which would lead to ET / IOU efforts being most necessary, cost-effective, and/or impactful are as follows:

   - Issuing rebates or setting rebate program requirements.
   - A cost (capital, labor, or expense), the resulting benefit of which would be shared by multiple stakeholders. (Example: making certain expensive pieces of equipment available to test targeted technologies in development by small companies.);
   - An investment of funds or resources, said investment being justified from the perspective of the ET mission, but being unattractive when viewed by a single technology developer. (Example: developing a hot-dry AC testing protocol.); and
   - Knowledge, equipment, information, or facilities that are very specific to the business of the IOU and may not be easily attainable by private industry without the IOU help. (Example: non-private IOU customer data.)

Formatted: Font: 12 pt, Not Bold

c. Barriers addressed
Technology development support focuses primarily on product or service unavailability. it also helps overcome organizational practices or customs by guiding a new measure to market that is tailored to specific segment or business needs. Finally, it may address Hidden Costs, a secondary market barrier for ETP, by assisting in development of a measure that minimizes maintenance or installation costs that would otherwise hamper adoption.

d. Expected outcomes
Technology development support will contribute to increased readiness and availability of EE measures for customers and EE program managers and reduced uncertainties for program participants. It also contributes to engagement in product development decision-making by ETP stakeholders and large-scale customer decision makers and decision influencers. This will lead to changes in organizational practices and customs and can lead to reduced maintenance and installation costs that may otherwise limit EE measure procurement and application.

The increased and improved technology supply, due to technology development support, will also lead to further reductions in market barriers, increased intent to purchase/employ measures, and more EE rebates issued. Over time, this will support increasing use of measures by customers, aiding EE programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

6. Business Incubation Support - (2013-2014: no longer a sub-program, but considered a "element" that can supports all ~~multiple~~ sub-programs as needed; please see Table 2).

a. Technology Resource ~~Incubator~~ Innovation Outreach (TRIO) is a statewide program that focuses on providing training and networking for entrepreneurs and companies providing energy saving technologies.

b. Rationale
During a solicitation process review by the PRG, it was mentioned that the utilities need to generate new innovative program ideas "through more outreach and non-traditional methods." In response to this request, more outreach was conducted via investor forums, university settings, and solicited abstracts.
Venture capitalists (VC) were notified of the potential TRIO program and were very interested in technologies that had a utility interest. The VCs were interested in learning how to do business with the utilities, what the utilities expected from entrepreneurs, how to utilize the utility emerging technologies department, and how to go about obtaining a purchase order with an IOU.

From this research the IOUs concluded that more outreach and non-traditional methods to generate new ideas could be generated by providing training workshops and mentoring on participating in IOU programs and the IDSM~~EE~~ business environment.
~~Significant screening activity will be conducted by the IOUs to decide which entrepreneurs and companies will be provided with this training and networking assistance.~~

TRIO is designed to accelerate the successful development of technologies through an array of engineering support, resources and services, developed and orchestrated by TRIO and offered both through TRIO and its network of contacts. There will be significant coordination with existing clean tech programs (such as the California Cleantech Open and various clean tech business clusters throughout California).

c. Barriers addressed
Business incubation support focuses primarily on product or service unavailability. It supports and accelerates market introduction for new measures (increased technology supply), and a particular form of information and search costs for businesses seeking to obtain recognition in IOU incentive and educational programs, as part of their business model. It also helps overcome organizational practices or customs by guiding new measures to market that are tailored to specific segment or business needs.

d. Expected outcome
Business incubation support will engender improved understanding of utility programs, as well as technology and business performance and market requirements for small entrepreneurs or large enterprises seeking to develop and/or introduce new EE and DR measures successfully into the market. It will reduce uncertainties for program participants, increase the readiness and availability of EE and DR measures, and increase participation in TRIP solicitations as well as ~~the IDEEA program as well as~~ in EE and DR incentive and education programs.

Business outreach support will also contribute to increased and improved technology supply over the mid- and long-term, leading to reductions in other market barriers, increased intent to purchase/employ measures, and more EE rebates issued. Over time, it will support increasing use of measures by customers, aiding EE or IDSM programs in achieving energy and demand savings targets, and meeting long term Strategic Plan and policy objectives.

~~a)~~ **Advancing Strategic Plan goals and objectives**

Formatted: Indent: First line: 0.5", No bullets or numbering

The ETP fully supports the goals, strategies and near-team plans of the Strategic Plan. This support will be demonstrated through both: a) the types of technologies that are selected for the ETP, and b) the approach that is employed to address longer term goals of the strategic plan by having a well-diversified portfolio of technologies under development, assessment, or deployment.
~~The tables included as Appendix 2 summarize how ETP objectives and action strategies contribute to fulfillment of the Strategic Plan near-term action steps toward the Plan's longer term goals.~~

~~One key step that the IOUs are taking to support the goals, strategies and near-team plans of the Strategic Plan is to define ETP Goal 3 as support for the Strategic Plan Big and Bold goals and related solutions, blending market demand and technology supply approaches to move the relevant suites of measures needed to attain the Big and Bold goals and related solutions more quickly. ETP Goal 3 is elaborated in Section 5 below.~~

A~~nother~~ key step that the IOUs are taking to increase ETP impact in support of the Strategic Plan is strengthening the linkages and feedback loops between ETP and other EE programs, as well as with leading market actors, to help advance development and implementation of new measures that support the Strategic Plan goals and strategies for Research and Technology, the Big, Bold initiatives, and related solutions, such as advanced lighting measures.

These linkages and feedback loops incorporate key EE, IDSM, and other IOU competencies such as EM&V, market research, behavioral, and potential studies, marketing, training, and regulatory support to ensure the deployment of new measures supporting the Strategic Plan will receive the full benefits of the IOUs' enterprise-wide resources.

The ETP organizational linkages and feedback loops will ensure a more cohesive approach to delivery of emerging technology products that in turn will lead to greater success in measure introduction, market adoption, and the overarching goal of energy savings. These linkages and feedback loops are further described in Section 6, below.

Furthermore in support of the Strategic Plan's goals and pursuant to the 2013-2014 guidance decision, the HVAC's Technologies and System Diagnostics Advocacy (HTSDA) 2010-2012 activities ~~sub-program goals and objectives~~ will be ~~merged with~~incorporated into ETP's goals and objectives.

Formatted: Font: 12 pt

Formatted: Font: 12 pt

The vision is to make a difference in the HVAC industry by addressing equipment reliability, performance, and integration/application challenges, in alignment with California's energy policies (i.e., California's Strategic Plan). These efforts will ensure that residential and light commercial HVAC

technologies, installations, and maintenance practices are of the highest quality, and optimized for California's varying climates. These efforts are focused on coordination and advocacy that addresses the priority need for immediate and comprehensive action addressing elements critical to increasing, optimizing and maintaining the energy and peak electricity efficiency performance of direct expansion (DX)/vapor-compression–based cooling equipment and accelerating the market introduction of a range of advanced evaporative-based climate appropriate cooling technologies as well as research/advocacy supporting automated fault detection and diagnostic maintenance procedures. Efforts include unprecedented participation by HVAC industry stakeholders in research, development, and design, continuous review and updating, and operation of HVAC-related IOU programs. This unprecedented cooperation and collaboration with the HVAC industry has the purpose of substantially advancing HVAC-related program quality and effectiveness.

5. Program Goals, Objectives, Action Strategies & Performance Metrics

ETP operations will apply the ~~six~~ three ~~core~~ sub-programs ~~elements~~ described in Section 4 to achieve the ETP goals, objectives, and action strategies.

- ETP Subprogram 1 - Technology Development Support
- ETP Subprogram 2 - Technology Assessments
- ETP Subprogram 3 - Technology Introduction Support
- ~~ETP Element 1 - Technology Assessments~~
- ~~ETP Element 2 - Scaled Field Placements~~
- ~~ETP Element 3 - Demonstration Showcases~~
- ~~ETP Element 4 - Market and Behavioral Studies~~
- ~~ETP Element 5 - Technology Development Support~~
- ~~ETP Element 6 - Business Incubation Support~~

Formatted: Bullets and Numbering

Each ETP sub-program ~~element~~ corresponds to one ~~or more Program Objectives, and each Program Objective supports one~~ of the three ETP goals. In high-level terms, the ETP goals are to increase adoption of measures (market demand), to increase measure supply (technology supply), and to advance Strategic Plan Big, Bold initiatives and related integrated energy solutions. These approaches are complementary and reinforce each other by helping new measures become available in the market and gain stronger market traction sooner than otherwise possible. Collectively, they coordinate with other EE programs and with interventions by non-utility market actors to market transformation efforts aimed at increasing the adoption of EE measures in California, nationwide and internationally.

Actions that increase market demand make developing and launching new measures less expensive, less risky, and generally more attractive to manufacturers and vendors seeking

to increase sales and profitability. This increased market demand inherently drives increased technology supply.

Actions that increase technology supply by resulting in more high-quality EE measures in the market encourage existing entrepreneurs and attract new ones to form or join enterprises in the EE market. These actions also attract progressive policy makers, consumers seeking financial and intangible benefits, and investors and others willing to fund innovative measures. This increased technology supply inherently drives increased market demand.

Actions supporting Strategic Plan Big, Bold initiatives and related solutions combine market demand and technology supply approaches. All actors involved in creating technology supply and market demand benefit from interventions by the ETP and complementary efforts.

ETP Goal #~~1~~ 2 (2013-2014 Goal #2: Increased number of measures offered by EE programs) Contribute to EE/DR market transformation efforts by accelerating stakeholder adoption of measures through transfer of available ETP measures into IOU EE programs or through other implementation channels. The focus of this Goal is increased market demand.

Comment [SC4]: Sequence of goals needs to be reordered. It was not done to avoid appearance of major modifications.

Formatted: Indent: Left: 0"

Objective ~~2~~1.1: Perform Technology Assessments
During the ~~2009-2011~~ 2010-~~2012~~ 2014 funding cycle, assess ~~thirty (30)~~ EE measures, including integrated demand-side management (IDSM) measures as defined by the EE Policy Manual[1].

Formatted: Indent: Left: 0", First line: 0.25"

Formatted: Indent: Left: 0.25"

Action Strategy ~~1~~2.1.1a: Scan a wide variety of sources for measures that could help IOUs meet customer needs and achieve energy savings, demand reduction, and other IDSM targets. Following are representative measures for ETP scanning in ~~2009-2011~~ 2010-~~2012~~2014.

Formatted: Indent: Left: 0.75"

Lighting

Task/ambient lighting designs
LED/SSL lighting applications (internal, external)
Dual relay occupancy sensor
Self commissioning dual loop daylight harvesting
Simplified daylight and occupancy controls
HID electronic ballasts
LED fixtures and systems

[1] ETP assessments are expected to complete in or before the fourth year after the year in which the assessment is initiated. This window may go well beyond the ~~2009-2011~~-2010-~~2012~~ 2014 funding cycle, especially for ETP assessments initiated in ~~2012~~2014. ~~2009-2011~~-2010-~~2012~~ 2014 funding cycle expenditures will occur throughout the project, meaning that some ETP expenditures could extend through ~~2016~~2018.

Dimmers for CFLs and ~~Leeds~~ LEDs
Super CFL
Small HID
Smart occupancy sensor systems
Solid state street lights
~~Exterior p~~Plasma lighting

HVAC

Climate Appropriate Technologies ~~Hot/Dry Air Conditioning (HDAC)~~
Automated Fault Detection & Diagnostics
Retrofit technologies
Behavioral studies
Quality Maintenance
Adiabatic cooling
Geothermal heat pumps
Natural gas driven heat pumps
Electric heat pumps

Other

Industrial process technologies
Advanced gas water heating technologies
Super Boiler
Consumer and commercial electronics
Plug loads and associated technologies
Energy Management Systems (all sectors including residential)
AMI/HAN integrated technologies
Data center technologies (air handling and hardware)

Action Strategy ~~1~~2.1.1b: ~~Request the results from the 2008 internal DOE assessment of priorities for DOE support of~~Review national and state priorities for HVAC technologies as part of the scanning efforts. The statewide HVAC program plans within the Residential and Commercial Programs ~~Technologies and System Diagnostics Advocacy sub-~~program outline~~s~~ a process around HVAC program design, implementation, technology assessment, ETP, and codes & standards. The framework includes an engaged industry stakeholder collaboration group, the Western HVAC ~~Leadership Task Force~~Performance Alliance (WHPA), ~~the~~ IOU HVAC Management ~~Steering Technology~~ team that includes participation from HVAC program/ETP/Codes & Standards managers, and the Western Cooling Efficiency Center (WCEC).

Action Strategy ~~1~~2.1.1c: Coordinate with statewide lighting initiatives (including the CLTC, state regulatory organizations, and other key stakeholders) to receive input to the scanning process.

Output for Action Strategy ~~1~~2.1.1: ET scanning will provide broad technology and market knowledge as a precursor to the ETP screening process.

Action Strategy ~~1~~2.1.2: Execute a screening process for assessment candidates designed to ensure that the ET team most effectively focuses its time and resources on measures. Utilize the Residential and Commercial HVAC subprograms and statewide lighting initiatives as resources for providing information utilized in the screening process.

Output for Action Strategy ~~1~~2.1.2: The ET screening process will produce a list of scored, approved, and funded measures for assessment. Ideas that pass the screening criteria will proceed to the next step of the ET process ~~(Action Strategy 1.1.3).~~

Action Strategy ~~1~~2.1.3: Conduct ET assessments to evaluate performance uncertainties and/or other attributes potential effectiveness / impact in reducing energy consumption and peak demand of new and/or under-utilized measures.

Formatted: Font: 12 pt
Formatted: Font: 12 pt, Strikethrough
Formatted: Font: 12 pt
Formatted: Indent: Left: 0"
Formatted: Indent: Left: 1"
Formatted: Indent: Left: 0"
Formatted: Indent: Left: 1"

Output for Action Strategy ~~1~~2.1.3: The ETP will produce a report describing results and conclusions from each ETP assessment. Ideas that pass the assessment criteria will proceed to the next step of the ET process ~~(Action Strategy 1.2)~~.

Action Strategy ~~1~~2.1.4: Develop and maintain a project tracking database containing the variables and attributes to be tracked by all ETCC programs statewide, and data will be reported to the CPUC on a regular basis. The naming convention shown in Attachment 3 will be used by all parties for tracking assessments.

Output for Action Strategy 2~~1~~.1.4: The ETP will update the CPUC database quarterly.

~~**Action Strategy 1.1.5:** Develop a user guide specifying information required for the ETP screening process for internal and external application to potential candidate measures for ETP assessment.~~

~~**Output for Action Strategy 1.1.5:** The ETP will produce the user guide for the ETP screening process.~~

Action Strategy ~~1~~2.1.~~6~~5: (SCE Only) Maintain testing capability to support technology assessments.

Output for Action Strategy ~~1~~2.1.6: (SCE Only) ETP will ~~fund~~ contribute to maintenance of existing TTC facilities ~~and will establish a new ZNE Test Center by 2012~~. All test facilities will have sufficient technical capability and intellectual capital to assess technologies.

Action Strategy ~~1~~2.1.~~7~~6: In addition, ETCC will host input sessions (Open Forum) to promote exchange of knowledge, perspectives and ideas two times per year. Like the ET Summit, these sessions will be organized by the ETCC and will be separate from quarterly ETCC business meetings. Increased access to ideas from outside organizations and entities will help the ETP maximize innovation and energy savings.

Output for Action Strategy 2~~1~~.1.~~7~~6: Minutes capturing assessment suggestions will be recorded for each session and used as an input to the scanning process.

Formatted: Indent:Left: 0"
Formatted: Indent:Left: 1"
Formatted: Indent:Left: 0"
Formatted: Indent:Left: 1"
Formatted: Indent:Left: 0"
Formatted: Indent:Left: 0"
Formatted: Indent:Left: 1"
Formatted: Indent:Left: 0"

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

Objective ~~1~~2.2: Transfer Measures into EE Programs
During the ~~2009-2011-2010~~2013-201~~4~~2 funding cycle, transfer ~~fifteen (15)~~ measures from the ETP into the EE programs, with the goal of producing energy savings and/or demand reduction.
Tr~~a~~ansfers may include measures from assessments initiated or completed in previous ETP cycles, as well as those from the current ~~2009-2011-2010~~2013-201~~4~~2 program cycle.

Action Strategy ~~1~~2.2.1: Evaluate program activity to assess the market acceptance two years, and potentially three years, after the launch of a measure transferred from ET. Review these findings with EE Program staff regarding potential improvement to both ET and EE program activities.

Output for Action Strategy ~~1~~2.2.1: The ETP will track EE program activity for measures assessed in the ET program.

Action Strategy ~~1~~2.2.2: The ETP will provide information to internal stakeholders from assessments that could help IOU's IDSM resource acquisition programs create new measures, or revise/integrate existing measures, that increase energy savings in a variety of market sectors. Specific activities will include ensuring final reports are distributed and made available, discussing results with EE program managers and IDSM clients, and assisting with communications and program documentation, as needed.

Output for Action Strategy ~~1~~2.2.2: Internal stakeholders will receive ETP final reports, discussion of ETP results, and other communication and documentation when relevant.

Action Strategy ~~1~~2.2.3: Communicate information on high-potential ET assessment findings to external stakeholders. Consult with internal and external partners to determine appropriate outreach activities for select specific measures. Possible outreach activities include:

- Post reports and results on the ETCC website;
- Debrief assessments partners on findings through a meeting, memo, or podcast;
- Execute public relations efforts, such as development and dissemination of press releases and articles for trade publications;
- Present findings at industry and community meetings/conferences, with a focus on promoting IDSM efforts;
- Submit articles to industry publications;
- Provide technical information to, and support information dissemination by the energy centers operated by each of the IOUs;

Formatted: Indent: First line: 0.25"
Formatted: Indent: Left: 0.25"
Formatted: Indent: Left: 1"
Formatted: Indent: Left: 1"

- Meet with market actors, including technology owners, manufacturers, allies, channel partners, trade association members, utilities, investors, and technology developers; and
- Utilize the bi-annual ET Summit Conference as a forum to communicate assessment results.

Output for Action Strategy ~~1~~2.2.3: The ETP will post reports and results on the ETCC web site (http://www.etcc-ca.com) when the results/findings are appropriate for external dissemination. Due to high tracking costs, some line item outreach activities in Action Strategy 1.2.3 are not mentioned here.

Action Strategy ~~1~~2.2.4: Proactively serve as subject matter experts and advisors to EE and IDSM program managers. Support transfer and development of EE measures based on assessments and market and behavioral studies. Coordinate with EE programs and other IOU resources needed for successful EE measure roll-out.

Output for Action Strategy ~~1~~2.2.4: Increased EE program manager knowledge and understanding.

Action Strategy 2.2.5: Conduct research for EE measures in accordance with guidance decision to support the development of energy savings ex-ante values

Output for Action Strategy 2.2.5: Increased number of measures in the EE portfolio.

ETP Goal #3: Support technology introduction and whole-building deep-energy reduction strategies.

The action strategies used in these projects may include but are not limited to scaled field placements, demonstrations, and/or showcases. The specific action strategy for each project will be specified in each project's plan.

Objective ~~1~~3.~~3~~1: Conduct field deployments (2013-2014: Changed to an element in support of ETP Goal#3)
Conduct ~~at least four (4)~~ scaled field placements during the program period to increase market understanding[2] and traction for new and under-utilized measures[3].

[2] It should be noted that unlike assessments, the primary information dissemination mechanism for scaled field placements is first hand experience utilizing the measure.

[3] ETP scaled field placements are expected to complete in or before the fourth year after the year in which the scaled field placement is initiated. Therefore, expenditures for scaled placements initiated and funded for the ~~2009-2011 2010~~2013 ~~2012~~ 2014 program cycle may be incurred through ~~2016~~2018.

Formatted: Indent: Left: 1"
Formatted: Indent: Left: 1"
Formatted: Font: 12 pt, Not Bold
Formatted: Font: 12 pt, Not Bold
Formatted: Indent: Left: 1"
Formatted: Font: 12 pt
Formatted: Indent: Left: 0", First line: 0"
Formatted: Indent: Left: 0"
Formatted: Font: 12 pt

Action Strategy ~~1~~3.~~3~~1.1: Scan a wide variety of sources for measures for scaled field placements that could help IOUs to increase market understanding and traction for new and under-utilized measures.

Output for Action Strategy ~~1~~3.~~3~~1.1: ET scanning will provide broad technology and market knowledge as a precursor to the ETP screening process to identify opportunities for scaled field placements.

Action Strategy ~~1~~3.~~3~~1.2: Execute a screening process for scaled field placements candidates designed to ensure that the ET team focuses its time and resources on measures most effectively.

Output for Action Strategy ~~1~~3.~~3~~1.2: The ET screening process will produce a list of scored, approved, and funded measures for scaled field placements. Ideas that pass the screening criteria will proceed to the next step of the ET process (Action Strategy 1.3.3)

Action Strategy ~~1~~3.~~3~~1.3: Conduct scaled field placements to increase market acceptance and traction for new and under-utilized measures[4].

Output for Action Strategy ~~1~~3.~~3~~1.3: At a minimum, the following data will be tracked for each scaled field placement: documents supporting the funding decision, number of measures installed, and EE program activity for programs where the installed measures would qualify.

Action Strategy ~~1~~3.~~3~~1.4: Evaluate program activity to assess the market acceptance at one year and two years, and potentially at three years after the launch of a scaled field placement. Review these findings with EE Program staff regarding potential improvement to both ET and EE program activities.

Output for Action Strategy ~~1~~3.~~3~~1.4: The ETP will track EE program activity for EE measures utilized in scaled field placements.

Objective ~~3~~1.~~2~~4: Conduct technology demonstrations (2013-2014: Changed to a element that can be used to support more than one ETP Goal)
~~Develop~~ Conduct ~~five (5)~~ IOU demonstrations and showcases to expose stakeholders to the performance of measures or systems. Highlight real-world applications and installations for market actors and end users[5,6]. An example of these projects could

[4] Note: Measures in scaled field placements will almost exclusively be measures already included in EE programs or a measure that has undergone technology assessment.

[5] It should be noted that unlike assessments, the primary information dissemination mechanism for demonstration showcases is first hand exposure to the measure.

Formatted: Indent: Left: 1"
Formatted: Indent: Left: 1"
Formatted: Indent: Left: 1"
Formatted: Indent: Left: 1"
Formatted: Indent: Left: 0.25", First line: 0"
Formatted: Font: 12 pt, Bold
Formatted: Font: 12 pt, Bold
Formatted: Font: Bold
Formatted: Indent: Left: 0.25", Adjust space between Latin and Asian text, Adjust space between Asian text and numbers
Formatted: Font: 12 pt
Formatted: Font: 12 pt

include supporting the construction of a high-performance residential building to demonstrate how multiple measures integrate to deliver near-ZNE performance.

Action Strategy 3~~1~~.2~~4~~.1: Scan a wide variety of sources for measures for demonstration showcases that could expose technology to various stakeholders and demonstrate technology performance and applicability in real world applications.

Output for Action Strategy 3~~1~~.2~~4~~.1: ET scanning will provide broad technology and market knowledge as a precursor to the ETP screening process to identify opportunities for demonstration showcases.

Formatted: Indent: Left: 1"

Action Strategy 3~~1~~.2~~4~~.2: Execute a screening process for demonstration showcases candidates designed to ensure that the ET team most effectively focuses its time and resources on measures.

Output for Action Strategy 3~~1~~.2~~4~~.2: The ET screening process will produce a list of scored, approved, and funded measures for demonstration showcases. Ideas that pass the screening criteria will proceed to the next step of the ET process (Action Strategy 1.4.3)

Formatted: Indent: Left: 1"

Action Strategy 3~~1~~.2~~4~~.3: Conduct demonstration showcases to expose technology to various stakeholders and to demonstrate technology performance and applicability in real world applications.

Output for Action Strategy ~~1~~3.2~~4~~.3: At a minimum, the following data will be tracked for each demonstration showcase: documents supporting the funding decision, location of installed measures, and any available data regarding people who viewed/attended/participated.

Formatted: Indent: Left: 1"

ETP Objective 3.3: Conduct Technology Resource Innovation Program (TRIP) Solicitations.

Action Strategy 3.3.1 TRIP will solicit a competitive bidding process to fund third party programs that leverage innovative EE and/or IDSM technologies and approaches. The awarded TRIP Programs will be transferred and administered by

[6] ETP Demonstration Showcases are expected to complete in or before the fourth year after the year in which the Demonstration Showcase is initiated. Therefore, expenditures for demonstration showcases initiated and funded for the ~~2009 2011 2010~~2013-~~2012~~ 2014 program cycle may be incurred through 201~~8~~6.

the utility's EE third party portfolio group. TRIP Programs will follow standard third party policies and procedures. For these details, please see the Third Party Program Implementation Plans.

Output for Objective 3.3.1: TRIP will solicit and award new third party programs.

~~**Objective 1.5**~~

Market and Behavioral Studies: (2013-2014: Changed to a element that can be used to support all ETP Goals) Perform targeted studies of customer behavior, decision making, and market behavior to gain understanding of customer/market perception and acceptance, and to identify potential barriers to measure adoption.

~~**Action Strategy 1.5.1:**~~ Perform primary IDSM related market and behavioral studies to enhance market intelligence of customer needs and "decision triggers" to improve acceptance of new or under-utilized energy efficiency technology.

~~**Output for Action Strategy 1.5.1:**~~ All market and behavioral studies will be captured in a final report.

~~**Action Strategy 1.5.2:**~~ Review and analyze secondary research as found, for example, from IOU subscription market research services such as E Source and Energy Insights, and from such organizations as Energy Information Administration, National Technical Information Services, and CALMAC, as well as in reports such as the Residential Appliance Saturation Survey and Commercial End-Use Survey.

~~**Output for Action Strategy 1.5.2:**~~ Secondary research findings will be captured in a final report.

~~**Action Strategy 1.5.3:** Complete one or more of~~Conduct the following types of studies:

- Perform market research studies to assess the potential impact of and barriers to implementation of proposed measures;
- Investigate specific technology gaps for a given market segment;
- Conduct an Energy Technologies/RD&D gap analysis for agricultural EE as included in the Strategic Plan; Identify and prioritize needed RD&D/ET projects;
- Perform customer research to assess the need for and optimal design of scaled field placements and demonstration showcases;
- Perform usability studies to assess how easily customers can adapt to and benefit from new measures; For instance, in-home monitoring and display technologies;

Formatted: Font: 12 pt, Strikethrough
Formatted: Indent: Left: 0"
Formatted: Font: 12 pt
Formatted: Font: 12 pt, Strikethrough
Formatted: Font: 12 pt, Strikethrough
Formatted: Indent: Left: 0", First line: 0.5"
Formatted: Font: 12 pt, Strikethrough
Formatted: Font: 12 pt, Strikethrough
Formatted: Indent: Left: 0", First line: 0.5"
Formatted: Font: 12 pt, Strikethrough
Formatted: Indent: Left: 0", First line: 0.5"
Formatted: Indent: Left: 0.5", Tab stops: Not at 0.92"

- Perform a scoping study, including findings from the Commission's potential and goals studies, of the overall long-term market potential for Emerging Technologies with estimates on targeted technologies and systems;
- Perform customer research to identify approaches to making new measures more attractive to customers;
- Perform customer research on the potential impact of social network software and other behavioral tools in expanding the impact of EE programs; and
- Perform market research to identify approaches for accelerating the pace of deployment of new EE and IDSM measures and programs.
- Develop roadmaps in accordance with 2013-2014 portfolio guidance decision.

~~**Output for Action Strategy 1.5.3:**~~ Produce reports summarizing study findings.

Develop residential and commercial roadmaps that encompass existing building retrofit and new construction programs by the end of the fourth quarter of 2013, in preparation for their inclusion in their 2015 and later energy efficiency portfolios. Ensure collaboration with Energy Division staff and other EE programs for the development of the scope for these roadmaps.

~~**Action Strategy 1.5.4:**~~ Disseminate market and behavioral reports.

~~**Output for Action Strategy 1.5.4:**~~ Post all market and behavioral reports on ETCC web site, where results/findings are appropriate for dissemination.

Formatted: Font:12 pt
Formatted: Font:12 pt
Formatted: Font:12 pt, Strikethrough
Formatted: Indent:Left: 0", First line: 0.5"
Formatted: Indent:Left: 1"
Formatted: Font:12 pt, Strikethrough
Formatted: Font:12 pt, Strikethrough
Formatted: Indent:Left: 0"

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

ETP Goal #~~2~~1: Increased EE Technology Supply

Formatted: Indent:Left: 0"

Contribute to EE/DR market transformation efforts by assisting technology developers and manufacturers to create technology supply with respect to emerging technologies, including supply for the Big Bold Initiatives ~~described in ETP goal 3 below~~, thereby increasing the number of EE measures that are available for adoption. The focus of this Goal is increased technology supply.

Objective ~~2~~1.1 Support technology development

Formatted: Indent:Left: 0.25"

~~Technology Development Support —~~During the ~~2009-2011~~ **~~2010~~2013-201~~4~~2** program cycle, the ETP will screen, select, and implement ~~two (2)~~ targeted technology development support projects to benefit EE product development.

Action Strategy ~~2~~1.1.1: Identify targeted opportunities to develop forward looking product specifications which could be used by a multitude of product developers. This effort could be most effective if the opportunity exists to tie future rebates or other incentives to the specifications. This may include development of an open source or proprietary product specification for entrepreneurs to build to – possibly with incentives. This may also contribute to competitions to develop new product concepts/meet specifications.

Output for Action Strategy ~~2~~1.1.1: Produce open source or proprietary specifications.

Formatted: Indent:Left: 1"

Action Strategy ~~2~~1.1.2: Look for targeted opportunities to establish product baseline performance levels. As an independent entity, the utilities may be in a position to establish baseline performance levels. This baseline information would serve as an input to product development efforts. Often, it is expensive and time consuming for developers to establish baseline performance in a product segment.

Output for Action Strategy ~~2~~1.1.2: Distribute baseline performance level reports to targeted product developers and partner entities.

Formatted: Indent:Left: 1"

Action Strategy ~~2~~1.1.3: Look for targeted opportunities to develop standard test protocols for energy efficient products, in support of statewide Codes & Standards Program.

Output for Action Strategy ~~2~~1.1.3: Develop and disseminate standard EE product test protocols in conjunction with statewide Codes & Standards Program.

Formatted: Indent:Left: 1"

Action strategy ~~2~~1.1.4: Look for targeted opportunities to provide customer contacts for testing and focus groups. Utilities may be in a unique position to help connect product developers with customers willing to participate in field tests of measures and provide feedback.

Output for Action Strategy ~~2~~1.1.4: A list of customers who have agreed to have their contact information shared with a technology developer.

Formatted: Indent: Left: 1"

Action strategy ~~2~~1.1.5: Look for targeted opportunities to conduct market or behavioral studies and otherwise provide and/or collect market intelligence. Utilities may have access to or the ability to collect market intelligence that would help justify product development investment and guide product development targets.

Output for Action Strategy ~~2~~1.1.5: Any market or behavioral studies will be captured in a final report.

Formatted: Indent: Left: 1"

Action strategy ~~2~~1.1.6: Look for targeted opportunities to make expertise/knowledgeable personnel available as resources to product developers. Utilities may be in a position to advise on certain subject matter.

Output for Action Strategy ~~2~~1.1.6: Produce an activity report for time charges incurred by ETP, while providing support to product developers.

Formatted: Indent: Left: 1"

Action Strategy ~~2~~1.1.7: Look for targeted opportunities to make testing facilities and/or other infrastructure available to multiple product developers. Utilities may be in a position to facilitate the sharing of capital intensive testing facilities or other infrastructure across parties developing energy-efficient products. Often, these resources serve as a barrier to product development or as a barrier to product quality and performance success.

Output for Action Strategy ~~2~~1.1.7: Produce an activity report for testing and other infrastructure support provided to product developers

Formatted: Indent: Left: 1"

Objective ~~2~~1.2. Conduct technology developer outreach through TRIO

Formatted: Indent: First line: 0.25"

Incubate businesses developing or selling EE or DR measures. TRIO focuses on providing training and networking for entrepreneurs and companies providing energy saving technologies. This will include providing training workshops and mentoring on participating in IOU programs and the ~~EE~~ IDSM business environment. ~~There is significant screening activity to decide which entrepreneurs and companies will be provided with this training and networking assistance.~~

Formatted: Indent: First line: 0"

~~As a sub-program component, m~~More detailed information regarding the TRIO efforts are included in Section 8 of this PIP.

ETP Goal #2~~3~~: (2013-2014: Incorporated into the project selection criteria for each Sub-program) Support achievement of the Strategic Plan Big, Bold initiatives for ZNE New Residential Construction, ZNE New Commercial Construction, ZNE for Existing Buildings, HVAC Industry and Market Transformation, and related solutions, such as advanced lighting measures, through programs and initiatives aimed at each. As the Strategic Plan is prominent in the activities of the ETP, a significant portion of the efforts undertaken towards goals 1 and 2 will contribute towards goal 3.

Objective ~~3~~2.1: (2013-2014: Incorporated into the project selection criteria for each Sub-program)

Help advance ~~at least 12~~ innovative measures and/or strategies to support ZNE New Residential Construction, ZNE New Commercial Construction, ZNE for Existing Buildings, HVAC Industry and Market Transformation, and related solutions during ~~2009 2011 2010~~2013-~~2012~~2014.

Action Strategy 2~~3~~.1.1: ~~:~~ (2013-2014: Incorporated into the project selection criteria for each Sub-program) Scan, screen and execute emerging technology projects in the areas of assessments, scaled field placements, demonstration showcases, market and behavioral studies, and/or technology development support to support ZNE New Residential Construction, ZNE New Commercial Construction, ZNE for Existing Buildings, HVAC Industry and Market Transformation, and related solutions during ~~2009 2011 2010~~2013-~~2012~~2014. (Projects in this action strategy will be considered to fulfill objectives in multiple Goals where relevant.)

Output for Action Strategy ~~3~~2.1.1: (2013-2014: Incorporated into the project selection criteria for each Sub-program) Outputs for these projects would be as stated for the corresponding projects under goals 1 and 2.

Objective 2~~3~~.2 (SCE Only) ((2013-2014: Incorporated into the project selection criteria for each Sub-program)

SCE's TTC is a ~~n SCE only program~~ resource that provides state-of-the-art testing facilities for conducting ETP projects and evaluating new IDSM technologies in support of the Strategic Plan's Big, Bold initiatives.

The TTC will maintain testing capabilities to specifically ~~address~~ support the Big, Bold ~~residential~~ ZNE and HVAC initiatives. ~~Lessons learned from residential ZNE may also be used to support the Big, Bold commercial ZNE initiative.~~ Additional important end uses, including lighting and refrigeration, will be the focus of distinct TTC test facilities. ~~As a sub-program component, M~~more detailed information regarding the TTC efforts are included in Section 8 of this PIP.

Formatted: Font:TimesNewRomanBold, 12 pt
Formatted: Font:TimesNewRomanBold, 12 pt
Formatted: Font:TimesNewRomanBold, 12 pt
Formatted: Font:TimesNewRomanBold, 12 pt
Formatted: Font:TimesNewRomanBold, 12 pt
Formatted: Font:TimesNewRomanBold, 12 pt
Formatted: Font:TimesNewRomanBold, 12 pt
Formatted: Font:TimesNewRomanBold, 12 pt
Formatted: Indent:Left: 0"

~~Section 5~~ Numerical Deliverables

The ~~2009 2011 2010~~2013-~~2012~~ 2014 ETP brings an expanded set of tools to the complex task of supporting Strategic Plan's goals, while assisting EE and IDSM programs in achieving maximum impact. As certain objectives involve activities that are new to the ETP, there is some degree of inherent uncertainty with regards to numerical deliverable levels. (An example of a numerical deliverable is "Conduct ~~XX 7scaled field placements~~Technology Introduction Projects~~.~~")

To account for this inherent uncertainty, while allowing the use of numerical deliverables, the ETP may need to substitute additional assessments in place of other program deliverables, if necessary, in order to meet numerical deliverable levels described ~~in this PIP~~in the Table 4. For instance, if projections for a demonstration showcase for an "Office of the Future" are significantly more costly than anticipated, the ETP may substitute one or more technology assessments to assure a successful, timely, and cost-effective outcome from all objectives that contribute to the ETP Goals.

Table 4. 2013-2014 Numerical Goals

2013-2014 Subprogram	Objective	Cycle Numeric Goal
Sub-program #1 Technology Development Support Subprogram	Screen, select, and implement targeted technology development support projects to benefit EE measure development.	~~18~~2
	Conduct technology developer outreach through workshops	2
Sub-program #2 Technology Assessments Subprogram	Assess EE measures, including integrated demand-side management (IDSM) measures	~~34~~10
	Transfer measures from the ETP into the EE programs, with the goal of producing energy savings and/or demand reduction.	~~10~~4
Sub-program #3 Technology Introduction Support Subprogram	Conduct technology introduction activities	~~6~~2
	Conduct Technology Resource Innovation Program (TRIP) Solicitations	~~3~~1

Formatted: Font: 12 pt, Highlight

Formatted: Font: 12 pt

Formatted: Font: 12 pt, Highlight

Formatted: Font: 12 pt, Highlight

Formatted: Indent: Left: 0"

Program Performance Metrics (PPMs)

Comment [SC5]: Question for regulatory/M&E: Should this section be here at all?

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

On December 2, 2010, the Commission issued Resolution E-4385, approving Program Performance Metrics (PPMs) for Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company and San Diego Gas and Electric Company for 2010-2012 statewide energy efficiency programs and subprograms. The Commission gave each PPM a metric type which indicated the reporting frequency: Metric type 2a indicates that the IOUs should report on the metric on an annual basis (unless indicated otherwise) Metric type 2b indicates the IOUs should report on the metric at the end of the program cycle.

~~Below~~ Table 5 below ~~are~~ lists the approved PPMs and metric types for the Emerging Technologies Program (Resolution E-4385, Appendix A, pp. 39-40):

NOTE: For 2013-2014, the "elements" have been re-characterized to support more than one ETP Goal.

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

Table 5. 2013-2014 Program Performance Metrics

Formatted: Font: 12 pt, Bold

SW PROGRAM/ *Sub-program*	PROGRAM PERFORMANCE METRIC (PPM)	Metric Type
EMERGING TECHNOLOGIES (ET)		
	1. The number of new "proven" ET measures adopted* into the EE Portfolio. * "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	2b
	2. Potential energy impacts* (energy savings and demand reduction) of the adopted ET measures into the EE portfolio. * Potential energy impacts to be reported based on ET project findings and estimated market potential (reported through quarterly ET database updates)	2b
Technology Assessment (TA)	1. 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 * "Adoption" means measure is available to end-use customers through IOU programs.	2b
Scaled Field Placement (SFP)	1. 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.	2b
Demonstration Showcases (DS)	1. 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.	2b
Market and Behavioral (M&B) Studies	1. Self-reported increased in knowledge among internal ET stakeholders about the technologies targeted by the M&B studies.	2b
Technology Development Support (TDS)	1. Number of new performance specifications and/or Use Cases* produced as a result of TDS sub-program. * "Use Cases" describe the need for a technology or application.	2b
	2. Number of new performance specifications and/or Use Cases presented to manufacturers/private industry for possible action.* * "Possible action" means that the manufacturer/private industry considered TDS results in their product development efforts.	2b

Technology Resource Incubation and Outreach	1. Percent of attendees who voluntarily respond and self-report increased understanding on how to do business with utilities.	2b
Technology and Testing Center (TTC)	1. Number of ETP measures evaluated at the TTCs in support of ET Assessments Sub-Program that are adopted* into the EE portfolio (and/or available in the market). * "Adoption" means measure is available to end-use customers through IOU programs.	2b

Market Transformation Indicators (MTIs)

Per Resolution E-4385, a subset of market transformation indicators (MTIs) for statewide energy efficiency programs and subprograms were presented at a public workshop on November 7, 2011, to allow for public comments and discussion before being finalized. Per Energy Division Guidance on June 19, 2012, the MTIs to be found in Attachment "H" are approved for this sub-program as applicable.

6. Coordination and Integration

~~a)~~ **IOU coordination efforts are described below**

6.1 - ETP Statewide Coordination

~~i.~~

A key strength of the ETP is the value created through ongoing collaboration among the statewide IOUs. Continuing and enhancing this statewide collaboration will contribute to the successful accomplishment of the ETP goals and objectives.

6.1.1 – Leveraging role of the Emerging Technologies Coordinating Council (ETCC): The ETCC plays a central role in statewide ETP coordination. The ETCC membership consists of the IOUs, the CEC, and CPUC staff. During ~~2009-2011-2010~~2013-201~~2~~4, the ETCC will meet at least four times per year to coordinate activities, exchange information, and define new and enhanced collaboration strategies.

Discussion at ETCC business meetings may touch on privileged customer information, business strategic and operational details, and privileged manufacturer product details that are too sensitive to discuss in an open forum. For this reason, ETCC business meetings will not be open to the general public.

The ETCC also convenes sub-groups to address statewide ETP collaboration opportunities that require additional time beyond what is available during regular ETCC meetings. For instance, a standing lighting sub-group meets quarterly, and

Formatted: Font: Bold

Comment [SC6]: Need guidance from regulatory or EM&V regarding this section

Formatted: Font: 12 pt, Bold

Formatted: List Paragraph, Outline numbered + Level: 2 + Numbering Style: 1, 2, 3, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Tab after: 0.63" + Indent at: 0.63"

Formatted: Font: Bold

Formatted: No bullets or numbering

the ETCC will host an upcoming hot, dry air conditioner meeting with the Western Cooling Efficiency Center at UC Davis.

In accordance with 2013-2014 guidance decision, ETCC membership will be expanded to research organization including research universities, national labs, energy centers, and other research organization. A new "collaborative" membership category will be developed. Potential new members will be invited to join.

6.1.2 – Collaboration with Municipal Utilities: As over 300 California municipal utilities launch or expand EE efforts, they are becoming increasingly aware of the need for, and potential benefits of, new and under-utilized measures to meet EE program goals. The ETCC is responding by promoting coordination and information sharing between ETCC members and municipal utilities.

This collaboration will include sharing information and results connected with upcoming IOU and CEC market studies, measure assessments, and scaled field placement activities. The IOUs will also provide recommendations to municipal utilities that have their own ET programs or are considering launching ET efforts, and may encourage municipal utility ET program staff to attend quarterly ETCC meetings.

Due to the large number of municipalities, their geographical range and varying stages in EE program development, the ETCC will work with convenoers such as the largest and most advanced municipalities (SMUD, LADWP, City of Palo Alto, etc.) and municipality-coordinating entities like the Northern California Power Agency and Southern California Public Power Authority.

6.1.3 – Forums and Training: The ETCC will support the Incubation objective under ETP Goal 2 by holding three training sessions every year for researchers to educate them about utility and investor perspectives, challenges, and needs.

6.1.4 – Knowledge Sharing: On a strategic level, the statewide ETP is committed to developing and implementing practices and tools to maximize collaboration and integration among the IOU ETPs. This will include comparing ETP local plans and identifying opportunities to reinforce and maximize statewide coordination and integration, keeping in mind the distinct resources, expertise, and customer base for each IOU.

6.1.5 – Coordination with non-IOU entities: Finally, the statewide ETP will expand statewide emerging technology projects and projects that leverage funding from non-IOU entities. The IOU ETPs will continue to identify and participate in collaborative projects that are co-funded by federal agencies or other large funders and that meet ETP criteria.

6.2 - ETP Coordination with EE Resource & Non-Resource Programs

~~ii.~~

The ETP maintains crucial touch points with EE resource programs and many non-resource programs, which serve as key clients for the measures that ETP assesses and makes available for implementation. Coordination with these EE programs occurs throughout the ETP screening, selection, assessment, and transfer process.

6.2.1 – Idea Generation Coordination: Ideas for new measures often come from EE program staff or through the professional networks of EE staff. At the screening stage, the ETP relies on input from EE program managers to score measures for assessment. EE program staff also plays a key role in identification of host sites for field assessment projection, scaled field placements, and demonstration showcases. The transfer of new measures from the ETP into EE programs takes place through a close collaboration between the programs.

6.2.2 – Feedback Loop with IOUs and M&V Community: In ~~2009-2011 2010~~2013-~~2012~~2014, the ETP will expand feedback loops with program staff and M&V consultants to increase the understanding by ETP and EE program staff of impacts from each new measure that has been transferred EE programs, including those that do not achieve projected levels of market penetration, energy savings, or demand reduction.

This will take the form of an initial meeting 12 months after a measure is transferred from ETP to an EE program, with a second meeting 24 months after transfer. An additional follow-up meeting will be scheduled three years after transfer, as needed.

6.3 - ETP Coordination with Cross-cutting Programs (Codes & Standards, Statewide M&O, WE&T etc.)

~~iii.~~

The ETP has a history of productive connections with cross-cutting programs including Codes & Standards and Energy Centers, and has successfully demonstrated that collaboration can maximize the impact achieved by all parties. In addition, SCE's TTC serves as a resource to ETP project managers, providing a unique venue to perform in-house testing of technologies to support ETP goals.

6.3.1 – Assessment Synchronization: In ~~2009-2011-2010~~2013-2014~~2~~, ETP staff will hold regular conversations with Codes & Standards staff to exchange methods for estimating the impacts of new measures through analysis and testing, and support the advancement of technologies that may be included in future codes and standards and reach codes. ~~–~~Where practical, the ETP will collaborate with Codes & Standards on measure assessments, and will seek to identify and transfer measures with potential to go directly from ETP to Codes & Standards.

Formatted: Font:12 pt, Bold
Formatted: Font:Bold
Formatted: List Paragraph,Outlinenumbered + Level:2 + NumberingStyle:1, 2, 3, … + Startat: 1 + Alignment:Left + Alignedat: 0.25" + Tabafter: 0.63" + Indentat: 0.63"
Formatted: No bullets or numbering
Formatted: Font:12 pt, Bold
Formatted: List Paragraph,Outlinenumbered + Level:2 + NumberingStyle:1, 2, 3, … + Startat: 1 + Alignment:Left + Alignedat: 0.25" + Tabafter: 0.63" + Indentat: 0.63"
Formatted: Font:Bold
Formatted: No bullets or numbering
Formatted: Font:12 pt

6.3.2 – Collaboration with Energy Centers: ETP will continue to grow its multi-faceted collaboration with Energy Centers, where new measures for potential assessment may be suggested by visitors or staff, where some assessments may be conducted in a controlled field environment, and where successful assessments are often showcased in exhibits that educate hundreds to thousands of interested customers.

6.3.3 – Cross-cutting Programs Coordination: The statewide Workforce Education & Training (WE&T) and statewide Marketing, Education & Outreach (ME&O) programs will offer new coordination opportunities. ETP assessments and market and behavioral research may pinpoint marketing and education needs that these two cross-cutting program can deliver. Conversely, these programs can identify opportunities for new or under-utilized measures, and may find potential limitations in EE measures that lend themselves to action by ETP. For instance, a new type of fan that is featured in a WET program could elicit comments by contractors about installation or maintenance issues that the ETP can address or can relay to the product developer or manufacturer. ETP will help identify workforce training needs, as appropriate, for advanced technologies in their early stages of development.

6.3.4 – Feedback Loop with Cross-cutting Programs: As with statewide and local IOU EE Resource and Non-Resource programs, the ETP will expand feedback loops with cross-cutting programs to increase the understanding by ETP and EE program staff of impacts from selected new measure that are relevant to the audiences, staff, and information gathering capabilities of the cross-cutting programs.

6.4 ~~iv.~~ - ETP Coordination with IDSM

ETP has long-standing and strong connections with energy efficiency and demand response (DR) programs, and is poised for broader IDSM integration. In ~~2010~~2013-201~~4~~2, ETP will undertake a coordinated effort to support innovation in EE, DR, renewable and combined heat and power programs. Among the many examples of this, ZNE new commercial construction, ZNE new residential construction, and ZNE for existing buildings stand out as opportunities to integrate on-site or neighborhood generation, co-generation, EE, and DR opportunities. Under the ETP demonstration showcases Objective 1.4 and Goal 3 described in Section 5 above, residential and commercial sites will be developed featuring integrated energy systems for proof-of-concept, technology and usability assessment, and market exposure.

ETP brings a strong aptitude for IDSM integration, since assessment results for lighting and HVAC control strategies are equally applicable to EE and DR programs. It is natural to expand an ETP assessment to investigate both options

Formatted: Font: 12 pt
Formatted: Font: 12 pt
Formatted: Font: 12 pt
Formatted: Font: 12 pt, Bold
Formatted: List Paragraph,Outlinenumbered + Level: 2 + NumberingStyle: 1, 2, 3, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Tab after: 0.63" + Indent at: 0.63"
Formatted: Font: Bold
Formatted: Indent: Left: 0.25", No bullets or numbering

with relatively modest incremental efforts, compared to an assessment for just EE or DR. Several control strategies listed under Action Strategy 1.1.1 in Section 5, above, can potentially be part of such an IDSM assessment.

Similarly, ETP has experience with EE – DR – on-site generation/cogeneration applications. For instance, ETP led efforts in 2007-2008 to obtain a CPUC waiver of EE Policy Manual requirements that might have disallowed incentive payments for the SolarBee water treatment technology, which uses integral onsite solar electric generation to operate.

Going forward, the EE Policy Manual should be revised to reflect a bias towards IDSM and to disambiguate issues like the one that raised questions about the SolarBee technology.

Finally, ETP IDSM coordination will benefit from the existing ETP network of partners described in Section 6.~~v~~5., below, and elsewhere in Section 6. The statewide IDSM PIP provides additional information on these issues.

The IOUs will coordinate program efforts with the local utility integration teams and the Statewide Integration Task Force to identify successful integration approaches and offerings, potential pilot programs and metrics.

6.5 - ETP Coordination with External Organizations and Entities ~~v.~~

Collaboration with external partners and allies plays an essential role in virtually all aspects of ETP operations, from screening and selecting measures for assessment, to performing assessments and scaled field placements, developing demonstration showcases, communicating ETP results, and transferring measures to the market through EE programs and other implementation channels.

6.5.1 – Alliances External Organization: To ensure successful coordination with the full range of external organizations and entities involved in developing new measures, ETP staff will receive explicit assignments and budgets for outreach and conference attendance to maintain a high level of awareness of research and development (R&D) activities across government, utilities, including those located in the Pacific Northwest, agricultural extension and university programs, and private industry, including selected proprietary efforts.

This interaction provides both ideas for new ETP measures and access by the ETP to propose new concepts or modifications to existing research that will result in measures for future ETP assessment and EE deployment. In this way, ETP uses its alliances with external R&D entities to leverage private industry and federally funded technology research and investment for the benefit of California ratepayers.

Formatted: Font: 12 pt, Bold

Formatted: List Paragraph,Outlinenumbered + Level: 2 + NumberingStyle: 1, 2, 3, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Tab after: 0.63" + Indent at: 0.63"

Formatted: Font: Bold

Formatted: Indent: Left: 0.5", No bullets or numbering

For instance, CEC ~~PIER~~ ER&DD and The Watt Stopper, Inc. have provided valuable new measures to the ETP and have also been receptive partners, incorporating ideas from the ETP for their new measure R&D.

6.~~5.~~6 – Codes and Standards Integration~~:~~

Formatted: Indent: Left: 0"

When ETP has completed review of a measure, external organizations play a crucial role in disseminating the results before, during, and after the transfer of the measure into EE programs or other implementation channels. For instance, ETP collaborates with industry trade organizations, large tech companies, entrepreneurs, UC Berkeley Center for the Build Environment, consultants, and others on educational outreach for building envelope EE measures.

Another example is ETP work on HVAC measures that may go directly to building standards. In these cases, ETP supports the Statewide Codes & Standards program through at all stages of measure development and evaluation through alliances with the California Building Standards Commission, American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) technical committee members to accelerate building design standards.

On lighting measures, ETP works with the DOE, Environmental Protection Agency (EPA), Illuminating Engineering Society of North America (IESNA), CEC, including the CEC PIER program, and leading lighting manufacturers and consultants.

~~Finally, the ETP partners with TRIO, a new statewide program described in Section 8, below, that helps bridge the gap between entrepreneurs, utilities, and the investment community.~~

Formatted: Font: 12 pt, Highlight

7. Marketing and Outreach/Education & Training

To maximize the benefits of its work, the ETP delivers information in many forms to many different groups. (The primary means for the ETP to disseminate information is through EE programs, including the Energy Centers.)

Among these benefits, ETP communications on measures that are being transferred or have been transferred to EE programs will assist companies, departments, and governmental entities in understanding EE measures' actual performance, breaking down barriers to proactive implementation.

7.1 – Sharing of Information through ETCC: The ETP partners will continue to utilize the ETCC as a central medium for the delivery of ET information. The ETCC website (www.etcc-ca.com) provides an overview of the ET program, a database of ETP project reports and fact sheets, information on upcoming meetings, and information on hosting an emerging technology project or proposing a measure for consideration.

7.2 – Distribution of Information through Other Sources: The ETCC website is just one of ways the ET program transfers information. Findings, results, and analyses are delivered to a variety of audiences through one or more of the following mechanisms:

- Providing technical information to Energy Centers run by each of the IOUs, supporting Energy Center information dissemination;
- Providing technical information to utility energy efficiency programs, supporting energy efficiency program information dissemination;
- Speaking opportunities with community organizations;
- Presenting open houses at ETP demonstration showcase sites for key stakeholders and the public at large;
- Meetings and coordination with technology owners, manufacturers, allies, channel partners, trade association members, utilities, investors, and technology developers;
- Presentations at state, local, and national meetings and conferences;
- Analysis and design tools intended for utility energy efficiency program and product developers, technology owners and manufacturers, and others;
- Public relations efforts, such as development and dissemination of press releases, media kits, and articles for trade publications; and
- Organizing and producing the bi-annual Emerging Technology Summit Conference, a collaborative effort among the IOUs with the CEC PIER Program.

8. TRIO and SCE's Technology Test Centers Description ~~Sub-Program Components~~

~~Components of Emerging Technologies that have specific functions, budgets and targets and that employ unique delivery mechanisms are listed as sub-categories below.~~

a) (2013-2014: Changed to a element that can be used to support Goal #1) Technology Resource ~~Incubator~~ Innovation Outreach (TRIO) ~~ProgramTactic~~

TRIO is a statewide ~~program~~ element that aims to draw a greater number of providers of desired, energy saving measures into the utility EE and DR programs -by:

- Providing training workshops;
- Providing energy ~~efficiency~~ efficiency and demand response "mentoring"; and
- Coordinating with existing clean tech programs (such as the California Cleantech Open and various clean tech business clusters).
-

~~TRIO Goal 1:~~ TRIO c~~C~~ontribute to the market transformation with efforts that help accelerate the commercialization of energy-efficient measures by r~~.~~

~~TRIO Objective 1.1~~

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.5" + Indent at: 0.75"

Formatted: Font: Not Bold

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.5" + Indent at: 0.75"

Formatted: Indent: Left: 0"

- ~~R~~eaching out to ~~five~~ universities, PIER, ~~three~~ investors, and other research organizations to ~~solicit~~ encourage innovative EE and DR concepts. ~~, then screen those measures and bring them in as potential program participants.~~

  ~~**Action Strategy 1.1.1:** Select a sufficient number of promising measures within these organizations that meet the screening criteria for a utility EE program. This utility interest in a specific energy efficient measure will leverage investor participation.~~

  ~~**Output for Action Strategy 1.1.1:** The statewide team, with a representative from each IOU, will visit a range of different organizations per year. A hand-off document will be generated for PIER specific technologies that have an energy efficient and demand response component.~~

~~**Action Strategy 1.1.2:** Score the selected measures with criteria that meet current EE requirements. An early score based review of each measure will allow for incubation of measures that will meet program requirements in the future.~~

~~**Output for Action Strategy 1.1.2:** Due diligence questionnaire must be completed and reviewed by ET staff. After a pass/fail review by the Emerging Technology engineer, the contact (entrepreneur, engineer, university student, or investor) of that due diligence questionnaire will attend the workshops listed in Goal 2.1~~

- ~~**Action Strategy 1.1.3:** TRIO also r~~Reaches ~~out~~ to investor deal flows to find potential energy efficient measures. ~~Create a screening process for investors so they are aware of utility requirements for an energy efficient measure. Find out~~ Determine what technologies the market is demanding.

- ~~**Output for Action Strategy 1.1.3:** Participate and hold roundtable meetings with investors.~~

~~**TRIO Goal 2:** Provide transparency of each IOU's demand side management rebate and incentive processes by providing :~~

~~**TRIO Objective 2.1**~~
~~Provide three (3) workshops per year~~statewide workshop ~~,~~ rotating between IOUs, on "how to" do business with utilities.

- ~~**Action Strategy 2.1.1:** These workshops are geared toward third party implementers and the requirements necessary to be awarded a purchase order by a utility. These workshops will educate the investor and technology communities on the requirements necessary for doing business with utilities.~~

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.5" + Indent at: 0.75"

Formatted: Indent: Left: 0.5"

Formatted: Font: 12 pt, Highlight

Formatted: Indent: Left: 0"

Formatted: Font: 12 pt, Highlight

Formatted: Font: Not Bold

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.5" + Indent at: 0.75"

Formatted: Font: 12 pt, Highlight

Formatted: Font: Not Bold

Formatted: Font: Not Bold

Formatted: Indent: Left: 0"

Formatted: Indent: Left: 0", Keep with next

Formatted: Indent: Left: 0"

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.5" + Indent at: 0.75"

- These workshops will include the requirements of measure selection, DSM integration, technical documentation (for example, E-3 calculator, DEER etc.), energy efficient and demand response definitions, and the California Solar Initiative. Investors, entrepreneurs, and manufacturers will become educated about what a utility qualifies as an EE and demand response measure. This qualification will make the measure more viable for investment purposes.

~~**Output for Action Strategy 2.1.1:** Hold three workshops per year, rotating between each IOU.~~

~~**b)**~~ **TRIO Coordination & Integration**

Formatted: Indent: First line: 0.25", No bullets or numbering

Statewide IOU coordination will include planning meetings to discuss the workshops and roundtables. Each utility will designate a TRIO contact person to coordinate the workshops. Each workshop is held at a different utility to support statewide participation. Each utility will manage their specific budgets. The criteria used to evaluate measures will be developed through a statewide ETP effort:

- TRIO statewide coordination - There will be planning meetings attended by all California IOUs to discuss workshops and roundtables. ~~with investors.~~

Formatted: Font: 12 pt, Highlight

- TRIO coordination with statewide and local EE programs - Meetings will be conducted and include program managers from statewide and local programs to assist in reviewing innovative measures.
- TRIO coordination with cross-cutting - Workshops and roundtables will state the need for cross-cutting programs. Any cross-cutting measure that comes to the TRIO program will be evaluated by cross-cutting program managers.
- TRIO coordination with IDSM - There will be DSM coordination during the workshops, educating the candidates about demand response, California Solar Initiative, and energy efficiency. Training materials will be created that include an explanation of how to incorporate IDSM. The roundtables discussions will also include these materials.
- TRIO Coordination with External Organizations and Entities - TRIO will invite PIER, CalCEF, Cleantech Open, ~~CalStart,~~ and various universities to education workshops on how to do business with utilities. Workshops will be sponsored by utilities 3 times per year.
  ~~Example: SCE will have a workshop in September 2009, PG&E will have a workshop in October, and SEMPRA will have a workshop in November. Venture capitalists and angel investors will be invited to roundtable meetings. In these roundtables, PIER will also be invited to discuss measures in their portfolio. There will be yearly measure showcases of the top three TRIO~~

Formatted: Font: 12 pt, Highlight

~~candidates.~~ ~~The audience will include Cleantech Open representatives, university staff, investors and other opinion leaders.~~

TRIO Marketing & Outreach/Education & Training

- TRIO will provide three workshops per year for all stakeholders and roundtables with investors and government programs to provide education. TRIO will outreach by attending and judging innovative competitions at universities and Cleantech Open. ~~TRIO will also market the program in Entrepreneur Magazine, Fast Company, and various innovative forums.~~

- ~~A statewide website will be developed for the TRIO program. This website will provide workshop and roundtable schedules for each utility. The TRIO website will also link to the ETCC website.~~The TRIO program workshops and roundtable schedules will be posted on the ETCC website. Presentation material from the events will also be posted on the website after the event is held.

~~c)~~b) **(2013-2014: To be considered a strategic shared resource for ETP and other IDSM programs; no longer a sub-program of ETP) SCE Technology Test Center~~s~~**

SCE's Technology Test Center~~TCs~~ is a suite of testing facilities focused on evaluating IDSM technologies in controlled laboratory environments using sophisticated monitoring equipment. The TTC also provides unique capabilities for evaluating performance of ~~new~~ emerging technologies. Located in Irwindale, the TTC is currently comprised of several controlled environment chambers and advanced lighting test stands, each equipped with high-tech data acquisition systems ~~three test facilities~~ and focused on distinct end uses such as: r~~R~~efrigeration, a~~A~~ir ~~C~~conditioning, and ~~L~~lighting. Established in 1996, t~~T~~hese facilities are widely known for their past accomplishments in testing and promoting energy efficient technologies and strategies.~~In the 2009-2011 2010-2012 program cycle, a fourth test facility will was intended to be added to the portfolio to help meet California's new ZNE goal for residential construction, with potential to also address commercial needs. Construction of this new facility was explored, however, the ZNE test center will not be constructed and will no longer be part of TTC portfolio.This facility, the ZNE Test Center, will be used to investigate the viability of energy efficiency, demand response, smart meters, and on-site renewable generation in ways that meet the needs of builders and occupants. It will be designed as a flexible facility to accommodate a range of different envelope, space conditioning, lighting, plug load, and renewable technologies. The ZNE Test Center will provide the opportunity to examine these technologies on a system level, while individual benefits can be assessed in the existing TTCs.~~

~~All four~~The TTC test facilities will provide critical services to a wide range of SCE's ~~EE~~ IDSM programs. The main function is to provide impartial laboratory testing and analysis of technologies in support of various IDSM goals~~, especially~~ and serve as a

resource for Emerging Technology project managers. These activities will be used to expand the portfolio of EE/IDSM measure offerings, quantify energy savings for EE measures, alleviate concerns about performance uncertainties, and verify the feasibility and validity of proposed codes and standards enhancements. A laboratory setting allows for the performance of detailed and replicable tests which are realistic, impartial, and uninfluenced by variables. Tests may be conducted according to industry standard test procedures or based on particular environmental conditions experienced by SCE customers.

TTC staff will also serve a secondary function as a repository of technical information and expertise. The unique knowledge obtained from actually installing and working with equipment will be shared with ~~EE~~ IDSM program staff, SCE customers, regulatory bodies, industry groups, and other interested parties ~~to~~ including IOU laboratories to ensure that ~~EE~~ IDSM activities are practical.

Outcomes

TTC ~~Goal 1:~~will c~~C~~ontribute to the technology evaluation efforts that accelerate the commercialization of ~~energy efficient~~IDSM measures by~~.~~

~~TTC Objective 1.1~~
~~Perform~~ performing independent, unbiased lab testing of existing products, new technologies and control schemes in support of IDSM and EE goals.

~~Action Strategy 1.1.1:~~ To ensure testing is conducted in the most relevant areas, TTC will a~~A~~ctively participate in key industry forums to collect input from major actors including manufacturers, academia, regulatory agencies, EE program staff, and SCE customers to determine areas where testing is needed. Tests will be ~~D~~designed and conducted ~~tests~~ to deliver results which address the identified needs.

~~Output for Action Strategy 1.1.1~~ ~~Share~~ TTC will share findings with interested parties via technical reports, fact sheets, conference papers, presentations, and training classes. Interested parties may include product designers and manufacturers, installation contractors, ~~EE~~ IDSM programs, and end-users.

~~Action Strategy 1.1.2:~~TTC will ~~s~~Support IDSM programs including Emerging Technologies, ~~y and~~ Codes & Standards, and Demand Response programs by providing in-house testing capabilities. Many of the projects associated with these ~~Emerging Technology and Codes & Standards~~ projects have testing components that must be conducted in a laboratory environment to reduce the risk of uncontrollable variables affecting the final results. The TTC has unique testing capabilities and few testing facilities in the U.S. have comparable competencies.

Formatted: Font: 12 pt, Bold
Formatted: Indent: Left: 0.25"
Formatted: Font: Bold
Formatted: Font: 12 pt, Not Bold
Formatted: Font: 12 pt, Not Bold

~~**Output for Action Strategy 1.1.2**: By 2012, complete construction of ZNE Test Center and begin performing technology evaluations. Also, ensure continued maintenance and availability of existing lighting, HVAC and refrigeration test centers.~~

~~**Action Strategy 1.1.3:** Reach out to investor deal flows to find potential energy efficient measures. Create a screening process for investors so they are aware of utility requirements for an energy-efficient measure. Find out what technologies the market is demanding.~~

Formatted: Indent: Left: 0"

~~**Output for Action Strategy 1.1.3:** Participate and hold round table meetings with investors.~~

~~**TTC Goal 2:** Contribute to the Strategic Plan goal of ZNE residential construction by 2020, commercial ZNE, including existing buildings, by 2030.~~

~~**TTC Objective 2.1**~~
~~Expand test capabilities to include a ZNE Test Center.~~

~~**Action Strategy 2.1.1:** The ZNE Test Center will be built as a state-of-the-art full-functioning laboratory. It will be designed in a modular fashion so that various technologies and equipment can be tested, then replaced with other competing technologies.~~

~~**Output for Action Strategy 2.1.1:** Complete construction of the ZNE Test Center and begin technology evaluations.~~

TTC will ~~Goal 3: cC~~ontribute to increased ~~EE~~ IDSM awareness of California residents~~.~~

Formatted: Font: 12 pt, Not Bold

Formatted: Font: 12 pt, Not Bold

~~**TTC Objective 3.1**~~
~~E~~ by effectively disseminate findings of test projects and lessons learned regarding IDSM benefits and proper application of ~~EE~~ technologies with diverse audiences.

Formatted: Keep with next

~~**Action Strategy 3.1.1:** Share findings with diverse audiences.~~

~~**Output for Action Strategy 3.1.1:**~~ Most test projects will result in formal test reports posted on statewide websites. In addition to these reports, information will be incorporated into fact sheets, journal publications, conference presentations and proceedings, training classes, industry handbooks, regulatory proceedings, and ~~EE~~ IDSM program materials.

TTC Coordination & Integration

In addition to technology testing, TTC's lab activities will support coordination with SW IOUs, and integration with multitude of IDSM programs. Projects conducted at TTC will be funded by various IDSM programs including Emerging Technologies, Codes & Standards, and Demand Response as well as other IDSM programs. ~~Although the TTC is an SCE only component of the ETP, the other statewide IOUs have similar test facilities.~~

i. TTC statewide coordination – TTC will engage in SW coordination with IOU labs to ensure avoidance of redundant testing in most applications through effective communications for effective utilization of SW lab resources.

~~i. est facilities will coordinate to ensure there is no duplication of test efforts.~~

~~ii. TTC coordination statewide and local EE – Meetings will be conducted and include program managers from statewide and local EE programs to determine where testing is most needed. Lab activities will include Emerging Technology and Codes & Standards funded projects.~~

~~iii. TTC coordination with cross cutting – Meetings will be conducted and include program managers from cross-cutting programs to determine where testing is most needed.~~

~~iv.~~ii. TTC coordination with IDSM – Test facilities will be open to DSM programs where applicable. Results from all projects will be shared with DSM staff and will educate about potential EE opportunities.

~~v.~~iii. TTC Coordination with External Organizations and Entities - TTC will maintain continuous contact with researchers, manufacturers, distributors, and end-users ~~for the relevant four classes of products~~. Relationships will continue to be such that information and advice can be shared freely.

TTC Marketing & Outreach/Education & Training

TTC will produce formal test reports for all technology evaluation projects conducted in the laboratories. Results and lessons learned will be incorporated into many information dissemination activities to diverse audiences. Information will be used in presentations at energy centers, joint IOU events, industry conferences, training classes for SCE employees and contractor groups, fact sheets, and industry publications.

TTC will maintain a website with results of completed projects and updates of projects in-progress. ~~This site will be open to the public.~~

Formatted

9. Quality Assurance and Evaluation Activities

a) Timeframe of process evaluations and quality assurance activities ~~(TBD)~~

The utilities are proposing to work with the Energy Division to develop and submit a comprehensive EM&V Plan for ~~2009-2011~~ ~~2010-2012~~ 2013-2014 after the program implementation plans are filed. This will include process evaluations and other program-specific studies within the context of broader utility and Energy Division studies. More detailed plans for process evaluation and other program-specific evaluation efforts cannot be developed until after the final program design is approved by the CPUC and in many cases after program implementation has begun, since plans need to be based on identified program design and implementation issues.

Formatted: Font: 12 pt, Strikethrough

~~Because the 2009-2011 2010-2012 ETP will contain new program activities, a statewide process evaluation will be conducted as soon as possible during the first full year of the program cycle, as recommended by the California Evaluation Framework for new programs.~~

The four IOUs will coordinate a statewide process evaluation to ensure that new program elements are being implemented as designed. This ~~statewide process~~ evaluation may be supplemented by ~~utility specific process evaluations,~~ specifically targeted ~~to~~ activities that ~~the~~ IOU program managers identify ~~as needing timely feedback~~ for purposes of continuous program improvement. These ~~utility specific process~~ evaluations will be planned and launched on an as-needed basis.

~~Quality assurance activities are separate from the process evaluations. Quality assurance activities will consist of regular checking and monitoring processes.~~

~~Near the beginning of the third full program year, a follow-up statewide process evaluation will assess how well first year process evaluation recommendations were adopted, and to provide lessons learned and recommendations for planning of post-2012 programs.~~

~~**Statewide process evaluation scope(TBD)**~~

~~The statewide process evaluations will be driven by the researchable issues based upon activities and expected outcomes described in the ETP theory and logic model. The process evaluation will also provide early feedback as to how well the 2009-2011 2010-2012 ETP is progressing toward meeting the goals and objectives stated earlier in this PIP.~~

~~The specific researchable issues chosen for the process evaluation will be determined with consultation from the ETP's stakeholders, and will include assessing how effectively adoption information is fed back to the ETP from the EE program's deployment efforts, as requested by the CPUC. The process evaluation tasks will include an update (if needed) of the program theory and logic model. Methods for the process evaluations will include commonly used methods such as stakeholder interviews, but may also use less common techniques such as communication/social network analysis.~~

~~All process evaluation activities will be guided by the Process Evaluation Protocols in the Evaluators' Protocols (2006, CPUC).~~ **~~Quality assurance activities~~ ~~(TBD)~~**

~~As part of the quality assurance activities, the ETP managers will provide support for future impact evaluations by increasing documentation activities and creating an evaluation database at the CPUC's request. This database will be accessible to the CPUC and the IOUs, but not the public.~~

~~The following reports will be provided on a quarterly basis, at the time the ETP evaluation database is updated:~~

~~Documentation tasks:~~

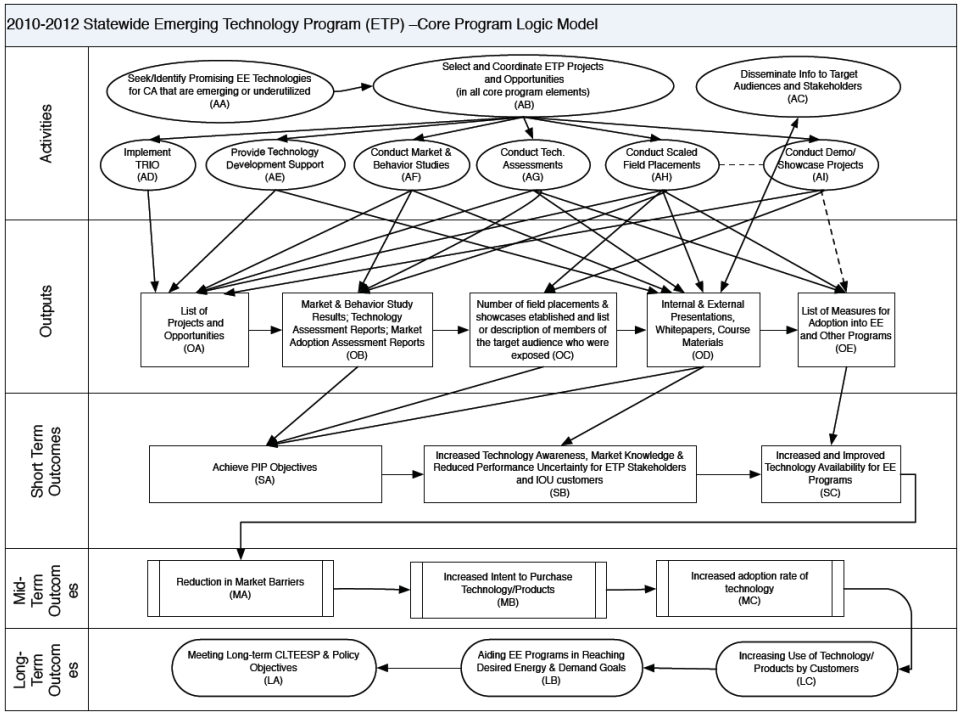
~~1) Use unique measure names to track the adoption of measures deployed through the EE resource programs;~~
~~2) Update the ETP evaluation database (accessible to the CPUC and the IOUs but not to the public) on a quarterly basis;~~
~~3) Completed ETP assessment forms and reports electronically compiled into the ETP evaluation database; and~~
~~4) Metrics for performance indicators will be gathered on a quarterly basis and uploaded into the ETP evaluation database. The specific metrics used will be drawn from metrics used for the aggregate analysis portion of the 2006-2008 ETP impact evaluation.~~

10. Program Logic Model and Performance Indicators **(Logic model to be developed at a later time for 2013-2014)**

On December 2, 2010, the Commission issued Resolution E-4385, approving Program Performance Metrics (PPMs) for Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company and San Diego Gas and Electric Company for 2010-2012 statewide energy efficiency programs and subprograms. In addition, this Resolution approved updated logic models for the statewide programs. Below are the approved logic models for the Emerging Technologies Program.

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

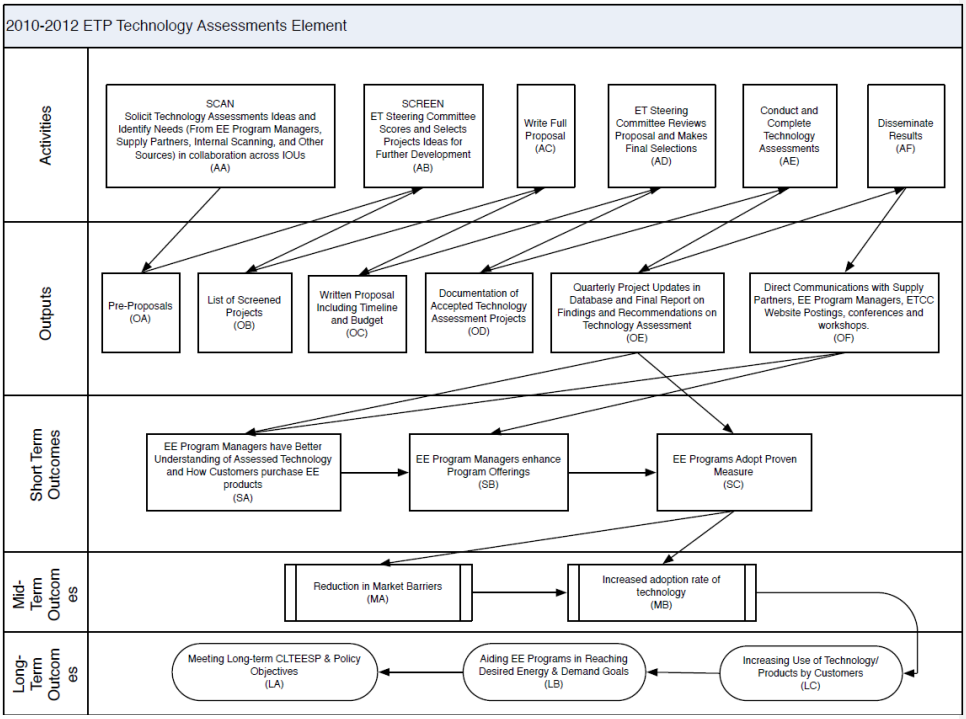
ETP



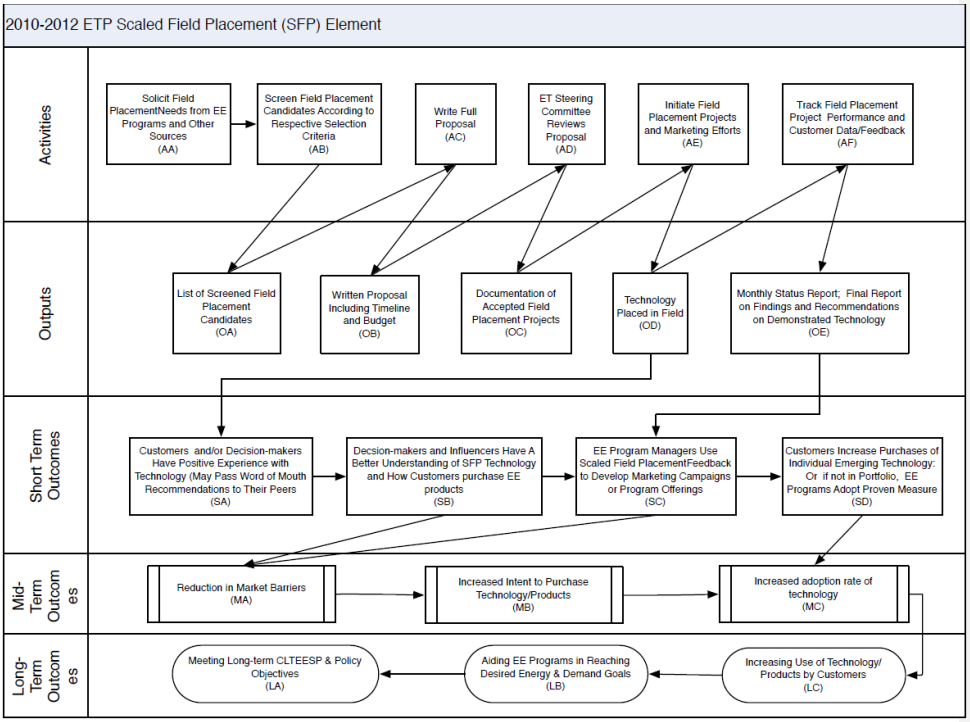
2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

Technology Assessments (Logic model to be developed at a later time for 2013-2014)

Comment [SC7]: When should Logic Models be developed?

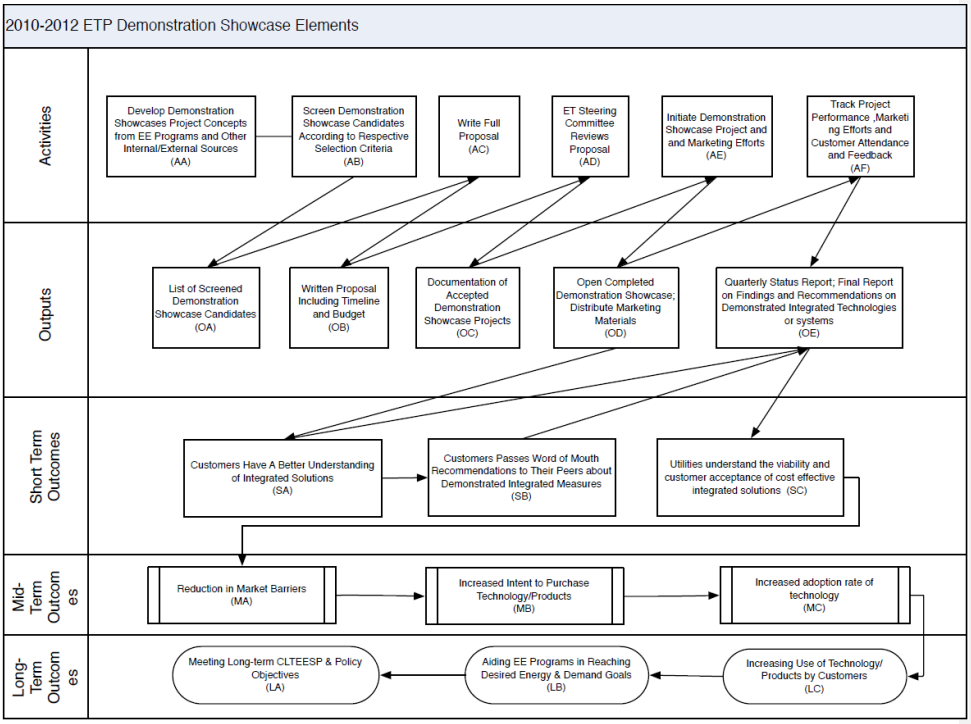


Scaled Field Placements (2013-2014: No longer a sub-program; Changed to an "element" that can be used to support more than one Goal)



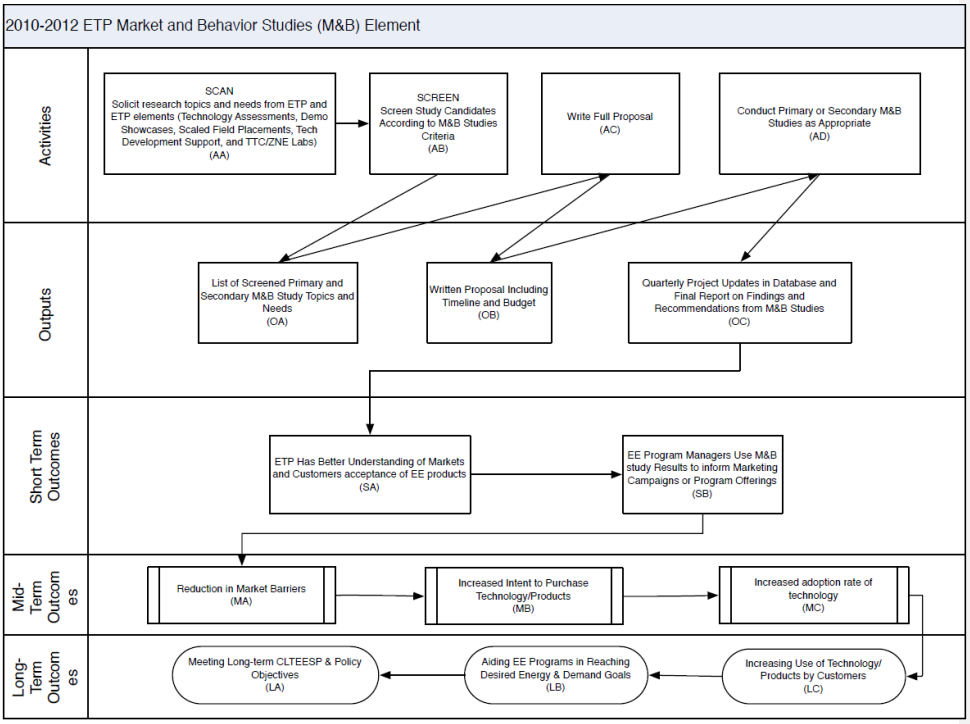
2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

Demonstration Showcases (2013-2014: No longer a sub-program; Changed to an "element" that can be used to support more than one Goal).



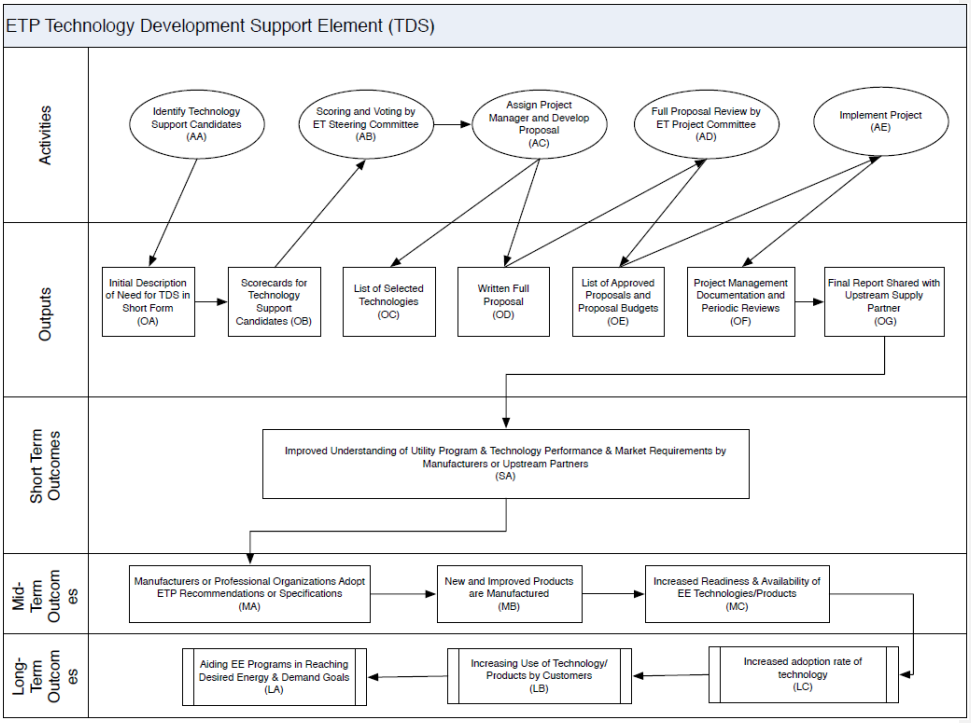
2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

Market and Behavioral Studies (2013-2014: No longer a sub-program; Changed to an "element" that can be used to support more than one Goal).



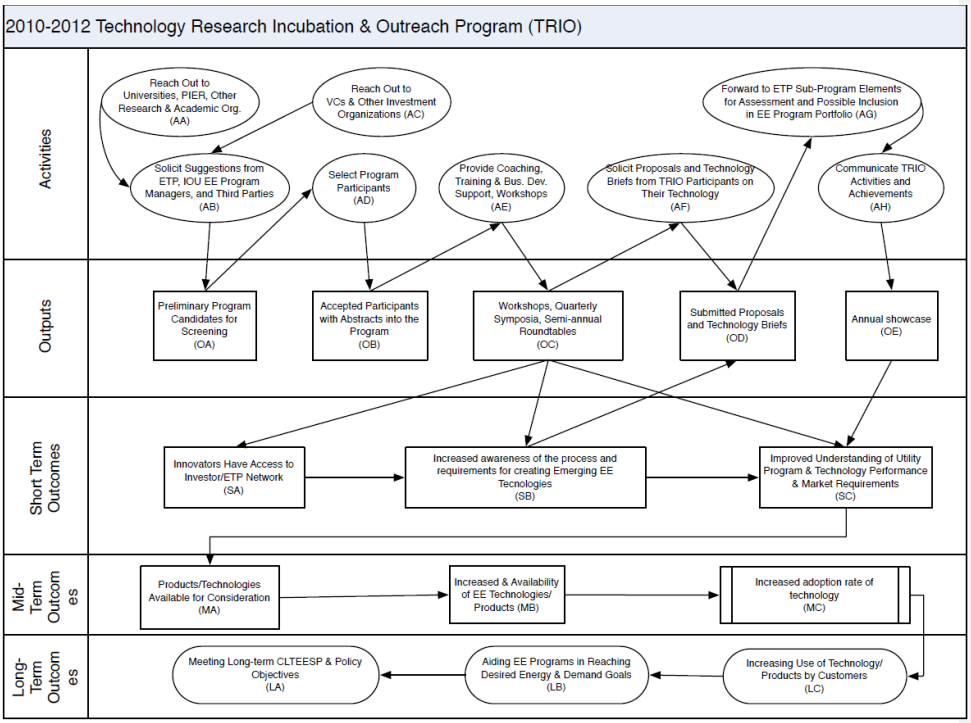
2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

Technology Development and Support **(2013-2014: Merged into Sub-program #1. Logic model to be developed at a later time for 2013-2014))**

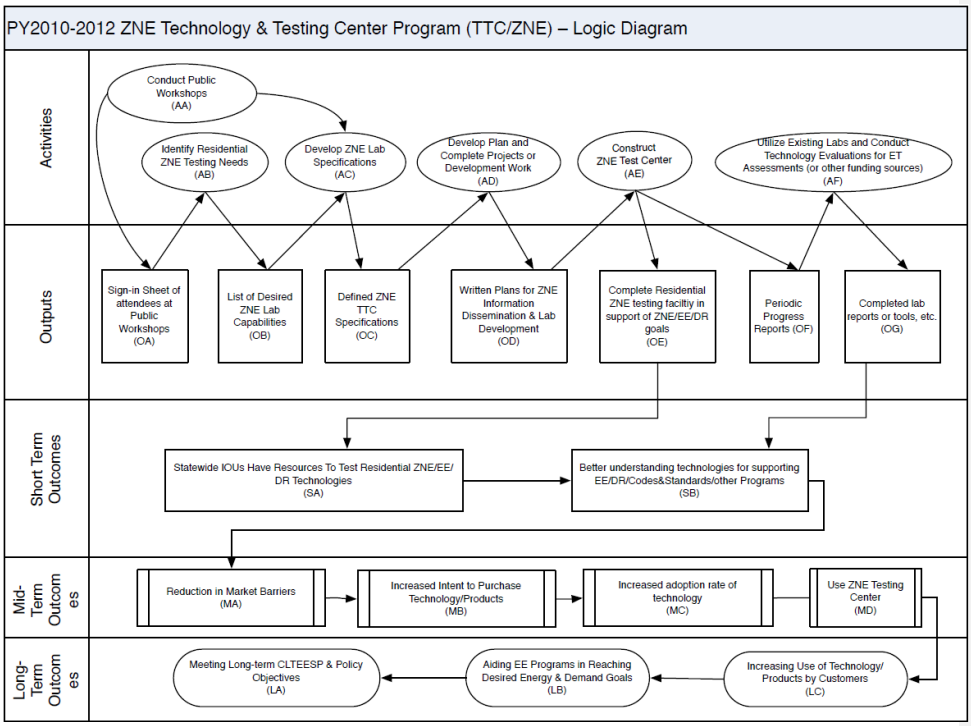


2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

TRIO (2013-2014: No longer a sub-program; changed to a "element" that can be used to support Goal #1- SCE only)



TTC **(2013-2014: No longer a sub-program; changed to a strategic resource that can be used to support more than one Goal).**



Formatted: Right: 0", Tab stops: Not at 4.85"

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

~~Appendix 1~~
~~Key Changes to 2010-2012 for 2013-2014~~

~~This section will include a table of changes made to the PIP as a result of the new directive~~

Formatted: Centered

Formatted: Right: 0", Tab stops: Not at 4.85"

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

Attachment ~~2~~1

ET Program 2013-2014 Planning Budget

Tables A and B below represent ETP's Direct Implementation Budget Breakdown Per 2013-2014 portfolio guidance decision. The budget allocation will encompass both short-term and long-term focus activities. In general, activities under Technology Development Support are intended to support long-term focused efforts. Long-term efforts refer to efforts that are intended to yield result in three or more years. For the Technology Assessment and Technology Introduction Support, the allocation of budget is approximately 50% short-term and 50% long-term. For Technology Assessments of new advanced and/or unproven technologies versus emerging and/or under-utilized technologies, the program intends to allocate its budget equally to both categories of technologies.

The~~I~~ information provided is for planning purposes only. Performance against budget allocations will not be tracked; however, reporting CPUC's ET database will be possible provided that capability is built by CPUC.

Table A – Project ETP Budget Breakdown by Segment

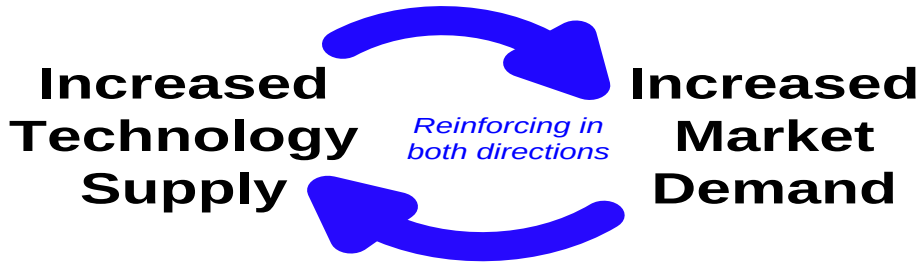
	Residential	Commercial	Industrial	Agricultural	Total
Technology Development Support	$ 47,788	$ 50,303	$ 18,864	$ 8,803	$ 125,757
Technology Assessment Support	$ 382,293	$ 402,414	$ 150,905	$ 70,422	$ 1,006,034
Technology Introduction Support	$ 526,276	$ 553,974	$ 207,740	$ 96,946	$ 1,384,936
Total	$ 956,356	$ 1,006,691	$ 377,509	$ 176,171	$ 2,516,727

Table B – Project ETP Budget Breakdown by End-Use

	HVAC	Water Heating	Controls	Other	Total
Technology Development Support	$31,439	$31,439	$31,439	$31,439	$ 125,757
Technology Assessment	$251,509	$251,509	$251,509	$251,509	$ 1,006,034
Technology Introduction Support	$346,234	$346,234	$346,234	$346,234	$ 1,384,936
Total	$629,182	$629,182	$629,182	$629,182	$ 2,516,727

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

Attachment 2



Activities Increasing Technology Supply

- **Basic Research (Not ET)**
  - Perform technology research
  - Fund universities and labs
- **Support Technology Development (ET)**
  - Provide /collect market intelligence
  - Access to testing facilities
  - Contacts for customer testing/feedback
  - Establish standard test procedures
  - Establish baseline performance levels
  - Access to utility personnel for input
- **~~Incubation~~ Outreach (ET)**
  - General ~~incubation~~ outreach efforts
  - Lend credibility to select companies/ technologies
- **FORESEEABLE market demand (ET collaborates w/ EE)**
  - Future codes/stds announcements
  - Communicate future rebate programs (w/specs)
  - Other future adoption incentives

Activities Supporting Increasing ~~Market~~ Market Demand

- **Assessments – reduce risk (ET)**
  - Work paper data
  - Software updates
- **Scaled Field Placements (ET)**
- **Demonstration Showcases (ET)**
- **Market and Behavioral Studies (ET)**
- **Rebate Programs (EE)**
- **Education / Training (EE)**
- **TOU Rates / Cost Incentives (Regulatory)**
- **Codes & Standards (Codes & Standards)**
- **Social "Green" Marketing (IOU or other)**

~~The California Long-Term Energy Efficiency Strategic Plan (CLTEESP) sets forth a statewide roadmap to maximize achievement of cost- effective energy efficiency in California's electricity and natural gas sectors between 2009 and 2020, and beyond. Appendix 2 summarizes how the ETP objectives and strategies during the 2009-2011~~

Formatted: Indent: Left: 0.05"
Formatted Table
Formatted: Indent: Left: 0", Hanging: 0.24", Tab stops: Not at 0.1"
Formatted: Tab stops: Not at 0.14"
Formatted: Indent: Left: 0.05", Hanging: 0.19"
Formatted: Tab stops: Not at 0.14"

~~2010-2012 program cycle contribute to the fulfillment of the Strategic Plan near-term action and steps toward the plan's longer term goals.~~
~~NOTE: Obsolete due to remapping of 2010-2012 "elements" into "tactics".~~

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

~~Appendix 3~~

~~**ETP Database Project Naming Convention**~~

Attachment 3

ETP Database Project Naming Convention

The ETP database project naming convention will be as follows:

ETYYUUUNNNN

YY is the project initiation or funding year (e.g., 13 for 2013)

UUU is a three- letter utility descriptor (e.g., SCE, PGE, SCG, SDG, SEM)

NNNN is a four-digit numerical identification code for the project assigned by the IOU.

- The first N is for Program Element (1-Technology Assessments, 7-Technology Development Support,8-Technology Introduction Support)
- The second and third Ns are 01-99 project number sequence
- The fourth N is for project phase
- NOTE - 0 is considered the first phase

Example: ET13SCE1050 - This is a first phase 2013 Technology Assessments project with a project sequence number five.

Note that project names will be issued during or after the initial project screening.

The data from these project databases will be extracted and sent to the CPUC under the same naming convention.

Formatted: SpaceBefore: 0 pt, After: 0 pt, Line spacing: single

Formatted: Indent:Left: 0"

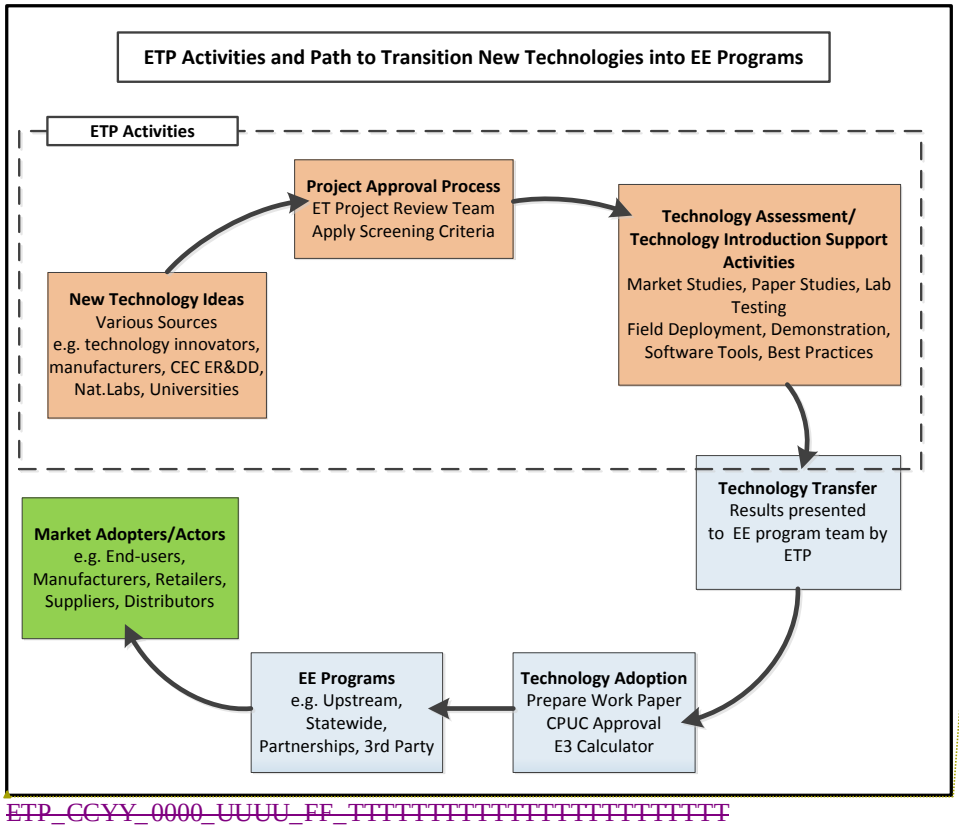
2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

~~Appendix 3~~

~~**ETP Database Project Naming Convention**~~
Attachment 4

ETP Activities and Path to Transition New Technologies into EE Programs

The diagram below depicts the activities to transition new technologies into utility EE programs. These activities would help transition technologies from various sources, including national labs, universities, manufacturers and technology innovators. The initial review of a technology idea's viability as a rebated measure will be conducted by ETP staff. Following this initial review, ETP staff may determine that additional information is needed and undertake further studies and demonstrations as appropriate. After a technology meets the initial program requirements for rebates, further information must be gathered on the technology's energy savings performance in order to provide the CPUC-required Work Paper that will be used to support energy savings claims.



~~ETP_CCYY_0000_UUUU_FF_TTTTTTTTTTTTTTTTTTTTTTT~~

Formatted: SpaceBefore: 0 pt, After: 0 pt, Line spacing: single

Formatted: Font: 12 pt

2013-2014 Energy Efficiency Programs
Statewide Emerging Technologies Program
Program Implementation Plan

~~Appendix 3~~

~~ETP Database Project Naming Convention~~

Formatted: SpaceBefore: 0 pt, After: 0 pt, Line spacing: single

~~CCYY is the year when the project was initiated (funding approved)~~
~~0000 is a four-digit numerical identification code for the project.~~
~~Four-digit identification codes beginning with 1, 2, or 3 will be assigned by SCE; 4, 5, or 6 by PG&E; and 7, 8, 9 by Sempra. These IOU-specific identification code assignments will eliminate duplicate codes, they do not indicate or imply project leadership or initiation.~~

~~UUUU is a four letter IOU code. Legend as follows:~~
~~C*** - Any project SCE executed alone or collaborated on with other utilities~~
~~*G** - Any project PG&E executed alone or collaborated on with other utilities~~
~~**M* - Any project Sempra executed alone or collaborated on with other utilities~~
~~Unused "*" slots should be replaced by an "x"~~

~~Example: "CxMx" would indicate a collaboration between SCE and Sempra. The fourth character is included for potential non-IOU tracking in the database, if ever desired.~~

~~FF is a code for type of fuel. First letter is for baseline, second letter is for measure. Use "E" for electric, "G" for gas, "S" for solar, "W" for wind, "O" for other, "R" for other renewable.~~

~~The 24 T's represent a project technology / subject descriptor using up to 24 alpha-numeric characters.~~