



**Evaluation of the PY2010-2012 California  
Statewide Emerging Technologies  
Program (ETP)**

**Presentation at AESP-NEEC 12<sup>th</sup> Annual  
Conference  
October 2, 2012**

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## A note on this presentation

This is a two-part presentation:

- Part 1 discusses the California Energy Efficiency Strategic Plan to provide context to what is going on within emerging technologies within the state.
- Part 2 briefly describes the statewide emerging technology program and provides draft high-level findings and recommendations as part of the PY2010-2012 Emerging Technologies Program (ETP) evaluation.
  - The Evaluation Team is working with the CPUC-ED and IOUs to finalize the Interim Report, and results may be revised as part of the review process.

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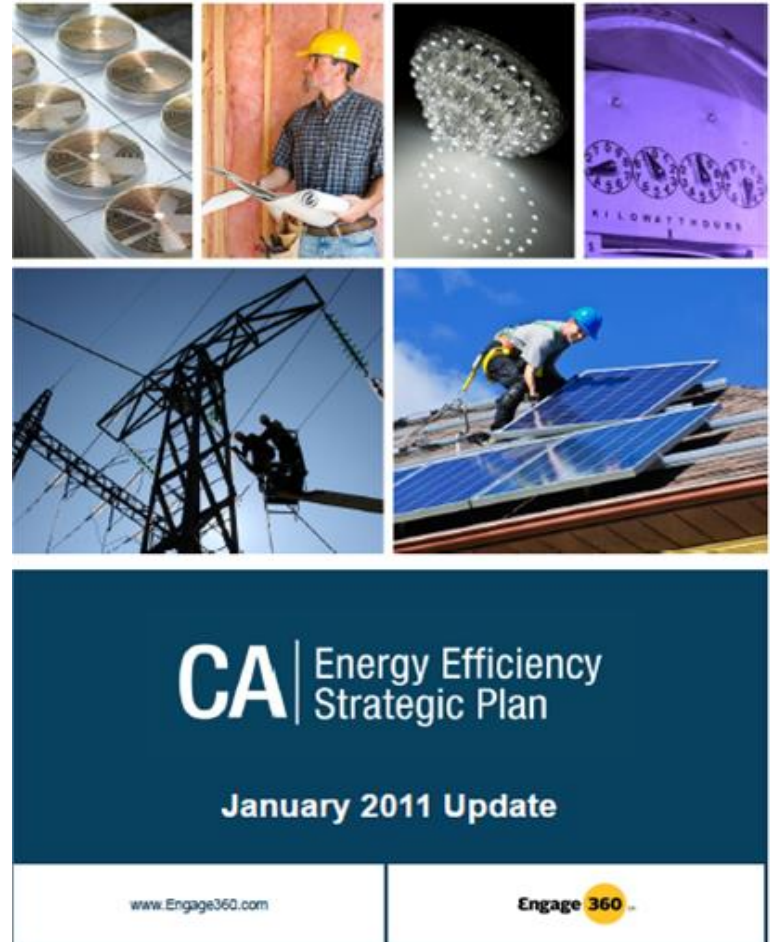
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## Table of Contents

- **The California Long Term Energy Efficiency Strategic Plan**
- Emerging Technologies Program (ETP) Overview
- PY2010-2012 ETP Evaluation Overview
- Key Interim Report Opportunities

# California Long Term Energy Efficiency Strategic Plan (CEESP)

- In September of 2008, the CPUC adopted California's first Long Term Energy Efficiency Strategic Plan presenting
  - A single roadmap to achieve maximum energy savings across all major groups and sectors in California.
  - Comprehensive Plan for 2009 to 2020 and beyond is the state's first integrated framework of goals and strategies, covering government, utility, and private sector actions, and holds energy efficiency to its role as the highest priority resource in meeting California's energy needs.
- Updated in January 2011.



# Big Bold Energy Efficiency Strategies



**(1) All new residential construction in California will be zero net energy by 2020**

**(2) All new commercial construction in California will be zero net energy by 2030**

**(3) Heating, Ventilation, and Air Conditioning (HVAC) industry will be transformed to ensure that its energy performance is optimal for California's climate**



50% of existing commercial buildings will be equivalent to zero net energy buildings by 2030

Energy consumption in existing homes will be reduced by 20% by 2015 and 40% by 2020 through universal demand for highly efficient homes and products.

\*These are not big bold strategies, but are an important goal of the CEESP



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## ETP made changes in PY2010-2012 to support CA's long-term policy goals

- Created five new program elements in PY2010-2012 as an expansion to earlier offerings
  - Elements attempt to address long-term policy goals of supporting increased demand and supply of innovative energy efficiency technology in support of the California Energy Efficiency Strategic Plan (CEESP)
- Budget increased from approximately \$30 million (PY2006-2008) to \$43 million



# Seven Elements to PY2010-2012 Program

N	Element	Description
1	<b>Technology Assessments</b>	<p>This program element focuses on emerging technologies that are new to a market or under-utilized for a given application. The technology assessment includes verification of the manufacturer's performance claims and overall effectiveness in reducing energy consumption and peak demand. The assessment function plays the largest role in determining whether to the transfer promising emerging technologies into the IOUs EE portfolio.</p>
2	<b>Scaled Field Placements</b>	<p>Scaled field placements work under the premise that end-users or stakeholders with adoption influence (installers, builders, and procurement officers) will be positively influenced by first-hand experience with 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. Additionally, scaled field placements provide additional information regarding the acceptance and use of specific measures in the market. This additional information allows the ETP to provide better information to EE portfolio program managers.</p>

# Seven Elements to PY2010-2012 Program

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3	<b>Demonstration Showcases</b>	<p>These projects strive to expose stakeholders (including the public) to various measures utilizing in situ, real-world applications and installations that may highlight a systems approach rather than an individual measure. Key attributes of a demonstration showcase are that the measures installed at sites that are accessible to stakeholders for a specific period and these stakeholders are encouraged to visit.</p>
4	<b>Market and Behavioral Studies</b>	<p>Market and behavioral studies 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. Used by ETP managers to help with decisions, studies may involve primary research that focuses on economic potential of selected measures, market barriers, customer needs and wants, measure usability and technology performance gaps. Studies can also focus on identifying potential measures and sites for scaled field placements and demonstration showcases.</p>

# Seven Elements to PY2010-2012 Program

N	Element	Description
5	<b>Technology Development Support</b>	Technology Development Support looks for targeted opportunities to support energy efficiency product development. As described in the PIP, product development is the process of taking an early-stage technology or concept and transforming it into a saleable product and 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. Technology development support can aid these efforts.
6	<b>Business Incubation Support (TRIO)</b>	Technology Resource Incubator Outreach (TRIO) is a statewide program that focuses on providing training and networking for entrepreneurs and companies providing energy saving technologies.
7	<b>Technology Test Center</b>	In the 2010-2012 program cycle, SCE will add a fourth test facility to help meet California's new ZNE goal for residential construction, with potential to also address commercial needs. SCE expects this facility to contribute to the Strategic Plan goal of ZNE residential construction by 2020, and commercial ZNE, including existing buildings, by 2030. SCE staff will use this facility 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. They will design the test facility 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 the TTCs will assess individual benefits.

## ETP is a unique program

- Non-resource program
- Portfolio combines the distinct program elements in an attempt to support both IOU and long-term CA policy goals
- New program elements have differing program theories, objectives, and implementation processes
- Unique program requires different evaluation efforts

Evaluation activities are unique given program design

## Evaluation assessed

1. Alignment with implementation plan
2. Support of California Energy Efficiency Strategic Plan (CEESP)

...and determined opportunities for the program

## Overall, ETP has opportunities to provide more support to CEESP goals

- ETP projects have tended to focus on internal IOU needs, while CEESP requires a broader focus
- Expert panel identified both general market tactics needed to support CEESP, followed by areas where ETP could support CA
  - ETP alone is not expected to meet CEESP goals
- The current ETP design and implementation supports some tactics and activities to increase adoption and supply of emerging EE technologies, but still room for improvement
- Additional research is required to determine effective implementation approach

## Overall, ETP has opportunities to provide more support to CEESP goals

Perform verification and demonstration of technology performance and energy savings claims for EE technologies

• ✓

Test products and practices to determine feasibility and potential energy savings in advance of (Reach) Codes & Standards

• ✓

Identify and provide emerging energy efficiency performance specifications

• ✓

Increase visibility of emerging energy efficient technologies

• ✓

Gather, improve, and disseminate data on performance of systems from past pilots, assessments, and technology demonstrations

• Opportunity exists

Disseminate knowledge to encourage energy efficient product development and delivery

• Opportunity exists

Collectively choose a high-profile collaborative activity

• Opportunity exists



## Opportunities exist for broadening dissemination and the intended target of ETP efforts

- Reports are primarily intended for internal audience
- Expand dissemination efforts
  - Post findings to ETCC website and target email blasts to key participants and stakeholders
  - Email list serve groups by key end-use or targeted newsletters to identified stakeholders

## Opportunities exist to build coalitions to foster collaboration

- Develop coalitions with partners across:
  - Product development stage
  - Key end-use areas
  - Market segments
- Develop large collaborative activity in support of emerging technologies
  - Identify partners to develop coalitions
  - Convene players to work on big picture projects to demonstrate and deploy emerging technolog(ies)
  - Direct coalition
  - Focus on key CEESP end-uses
    - Advanced HVAC Technologies (CA climate appropriate)
    - Advanced Lighting
    - Plug Load and Smart Appliances
    - Integrated Building Design and Operations

**In support of additional CEESP and longer-term efforts,  
create overarching and unifying action plan**

- Set up a collaborative “planning group” to create the action plan and determine best level of engagement for ETP
  - ETP alone can’t meet all of the CEESP goals, but can play a stronger role
  - Collaborate with organizations such as EPRI, Labs, CEC, Universities, WCEC, DOE, others working outside of CA

## Summary of Opportunities

- Focus outcomes
  - Projects can still draw on design and outcomes of multiple elements
- Enhance selection and screening of projects
- Broaden dissemination efforts and intended audience of ETP efforts
- Build coalitions to foster collaboration
  - Including developing collaborative activities in support of emerging technologies
- Be proactive and strategic to support longer-term (as well as some short-term) efforts to advance CEESP goals
  - Draw on collaborations to create an overarching and unifying plan to help be proactive and strategic

## Questions and Contact

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