Energy Division Staff Review of Utility

2009-2011 Energy Efficiency

Portfolio Filings,

dated March 2, 2009

June 5, 2009

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Residential: Energy Division Program Findings

	Budget in millions	Savings	Findings
Statewide Programs			
SW Residential (existing)	**$772.9**	**kWh= 4,076,066,881 kW= 1,121,925 therm= -(15,629,018)**	**See below**
Home Energy Efficiency Survey (HEES)	$48.5	kWh= 55,432,632 kW= 479,040 therm= 0	Meets requirements in Oct 30 Ruling. Program could consider expanding to include MF in PG&E territory. Could have differentiation ability to feed appropriate participants to Whole House program for full diagnostic testing – not just online audit.
Basic CFLs	$147.5	kWh= 2,287,538,575 kW= 303,266 therm= -(31,296,501)	*See Party comments*
Advanced Consumer Lighting	$52.3	kWh= 347,851,441 kW= 31,397 therm- 0	*See Party comments*
Home Energy Efficiency Rebates (HEER)	$263.8	kWh= 314,068,453 kW= 156,222 therm= 22,605,314	Program could include inclining incentive to promote comprehensiveness.
Appliance Recycling	$99	kWh= 615,326,116 kW= 108,777 therm= -(9,752,584)	Savings logic needs further review.
Business and Consumer Electronics (BCEP)	$58.6	kWh= 231,472,772 kW= 22,931 therm= -(5,051,002)	Great support for plug load strategy
Multi-Family Energy Efficiency Program (MFEER)	$102.9	kWh= 224,376,891 kW= 20,293 therm= 7,829,755	Program needs inclining incentive to promote comprehensiveness. Could consider new opportunity to coordinate with AB 811 assessment districts.
SW Residential (new construction)	**$120.1**	**kWh= 97,048,274 kW= 75,232 therm= 2,124,951**	**See below**
CA Advanced Home Program (CAHP)	$114.6	kWh= 89,045,094 kW= 71,033 therm= 1,949,451	Major improvement from 06-08. Consider adjustments to CEESP interim milestone market penetration logic. Incentive levels could be justified in new market conditions.
Energy Star Manufactured Homes (ESMF)	$5.5	kWh= 8,003,180 kW= 4,199 therm= 175,500	Program addresses major lost opportunity in manufactured housing for relatively little cost.

Local & Third Party Programs – Joint IOU Reviews		
Program	**Budget (millions*)**	**Findings**
Whole House Home Performance	$13.6	Program design is good. Could add contractor tools package and discuss development of SW stakeholder team. Workshop necessary to discuss CEESP goal achievement given game changing ARRA and AB 811.
Sustainable Communities	$27.8	Program could incorporate local government planning staff, and clearly define "case study" (main 09-11 deliverable).
Local & Third Party Programs – Individual IOU Reviews		
SDGE	**Budget (millions*)**	**Findings**
MicroGrid Program	$5.1	Exciting innovation! This iDSM program with a substation geography perspective brings locational value to EE – may need to scale with MRTU
Res HVAC Tune Up/ Quality Installation	$1.5	No detailed review. No glaring issues.
Electric Resistance Heating	$2.2	No detailed review. No glaring issues.
K-12 Energy Efficient Education	$1.16	No detailed review. No glaring issues.
Multi-Family <30	$0.84	No detailed review. No glaring issues.
CHEERS	$0.35	No detailed review. No glaring issues.
Time Delay 20% Cooler	$0.17	No detailed review. No glaring issues.
SCE	**Budget (millions*)**	**Findings**
Online Buyers Guide	$1.36	Innovative new program – candidate for statewide expansion. Program could co-brand with "new" EE brand and link to new EE web portal. Also include CSI and other DSM options.
Efficient Affordable Housing	$1.52	No detailed review. No glaring issues.
Comprehensive Mobile Home	$10.95	This local program brings outreach to mobile home communities – otherwise a lost opportunity.
Community Language Efficiency Outreach	$4.76	No detailed review. No glaring issues.
SCG	**Budget (millions*)**	**Findings**
On Demand Efficiency	$2.4	No detailed review. No glaring issues.
HERS Rater Training Advancement	$1.5	No detailed review. No glaring issues.
MultiFamily Home Tune-Up	$7.1	Cost effective direct install into tenant's and communal space within multi-tenant buildings, coordinates with LIEE
MultiFamily Solar Pool Heating	$2.2	No detailed review, however review team had reservations about a solar pool program without a plan to transform the market.
Community Language Efficeincy Outreach	$0.7	No detailed review. No glaring issues.

MultiFamily Direct Therm Savings	$2.8	No detailed review. No glaring issues.
Living Wise	$2.2	No detailed review. No glaring issues.
Manufactured Mobile Home	$8.8	No detailed review. No glaring issues.
Upstream High Efficiency Gas Water Heater Program	$0.53	No detailed review. No glaring issues.
Energy Efficient Ethnic Outreach	$3.6	No detailed review. No glaring issues.
PG&E	**Budget (millions*)**	**Findings**
Builder Energy Code Training	$1.6	No detailed review. No glaring issues.
Green Building Technical Support Services	$1.8	No detailed review. No glaring issues.
California New Homes Multifamily	$7	No detailed review. No glaring issues.
Enhance Time Delay Relay	$2.5	No detailed review. No glaring issues.
Direct Install for Manufactured and Mobile Homes	$1.5	No detailed review. No glaring issues.

Residential Energy Efficiency Program (REEP)

1.) Program Summary:

The Residential Energy Efficiency Program (REEP) is designed to offer and promote specific and comprehensive energy solutions within the residential market sector. The Residential portfolio employs various strategies and tactics to overcome market barriers and to deliver programs and services aligned to support the Strategic Plan by encouraging adoption of economically viable energy efficiency technologies, practices, and services[1]. The REEP is comprised of 7 subprograms offering statewide consistency for measure availability, incentive levels, and marketing and outreach materials.

Sub Program Name	Budget	%
Home Energy Efficiency Survey (HEES)	$48,444,480	6%
Residential Lighting Incentive Program for Basic CFLs	$147,504,966	19%
Advanced Consumer Lighting Program	$52,319,192	7%
Home Energy Efficiency Rebate Program (HEER)	$263,818,865	34%
Appliance Recycling Program (ARP)	$99,155,662	13%
Business and Consumer Electronics Program (BCEP),	$58,642,887	8%
Multifamily Energy Efficiency Rebate Program (MFEER)	$102,973,908	13%
Total	**$772,859,960**	**100%**

3) State Wide Program Requirements (see Oct. 30th Ruling for details):

There is commonality in general across the IOUs on the REEP program and its subprograms. The following issues were identified in the10/30/08 Ruling as criteria for Statewide Programs:

a. Program name – CONFORMS
b. Incentive levels offered - CONFORMS
c. Same or very similar delivery mechanisms- CONFORMS
d. Same or very similar marketing materials - COMPLIES
e. Regular inter-utility coordination - CONFORMS
f. On-going review and adoption of best practices and feed-back from program evaluations across the utilities- MARGINAL TO NONCONFORMITY
g. Intra-utility coordinated actions with state, local and federal agencies and other key actors- MARGINAL

4) Summary of CEESP Strategy Advancement:

[1] Program summary from page 2. PG&E 2009-2011 EEP PIP SW Residential March 2, 2009

To address Goal 1[2], the IOUs present a portfolio of solutions developed to reach energy consumers across California's diverse climates, cultures, and demographic segments. A clear challenge exists to balance CEESP goals and still maintain a cost-effective resource-acquisition Residential Portfolio. "Comprehensiveness" is tossed around with little regard for the true spirit of the word as used by the CEESP, i.e. in regard to Whole House Home Performance. Indeed, comprehensive options are successfully offered by the SW REEP. However, comprehensiveness is not promoted by the REEP.

The efforts toward Goal 2[3] appear to be adequate for the 2009-2011 period. However, it would be extremely beneficial to have market baseline data upfront to track and understand impacts as well as understand the areas of emphasis to focus on. That data is missing throughout the filings.

Goal 3[4]: With the CFL markets not only in CA but in most areas of the country becoming saturated it does not make sense from a market transformation standpoint to continue to have such large efforts focused on the CFL programs. Emphasis should begin to be shifted to other areas. Advanced lighting programs certainly warrant substantial attention with rapidly emerging technologies such as LED's deserving support.

5) Discussion of cost/savings ("program TRC"):

Utility	Mandated SW Program net TRC	Preferred SW Program gross TRC
PG&E	1.58	2.22
SCE	2.83	4.1
SDGE	1.14	3.0
SCG	.53	.72

It is likely that for the entire IOU portfolio to be cost effective, the Res SW program must be cost effective. It is not clear why Edison is able to implement a more cost effective residential program even though they offer the same subprograms as PG&E, SDG&E. The best guess is that SCE is not dragged down by the low cost-effectiveness of residential gas programs as in SCG's case.

6) Summary of baseline, market transformation and quantitative program target information:

In the amended filing, IOUs propose a plan for baseline and market transformation tracking. However, they refrain from forecasting what effect their programs will have on the transformation of markets instead referring to text indicating that transformation is not possible to attribute to any particular program.

The IOUs propose three baseline data types and one source for each. They are:

- Efficient appliance market share through the California Lighting and Appliance Saturation Survey (CLASS) with results from 2000 and 2005 and an update expected in 2010.

[2] Goal 1: Home buyers, owners and renovators will implement a whole-house approach to energy consumption that will guide their purchase and use of existing homes, home equipment (e.g. HVAC systems), household appliances, lighting, and "plug load" amenities.
[3] Goal 2: Plug loads will be managed by developing consumer electronics and appliances that use less energy and provide tools to enable customers to understand and manage their energy demand.
[4] Goal 3: The residential lighting industry will undergo substantial transformation through the deployment of high-efficiency and high performance lighting technologies, supported by state and national codes and standards.

- Attitudes, Knowledge and Awareness change through the CA Residential Lighting and Appliances Program study, phases 1, 3, and 4, with a yet-to-be-planned update.
- Behavior change as indicated by the evaluation of rates of adoption of behavior change suggestions from the long-running Home Energy Efficiency Survey.

7) Keystone performance metrics for non-resource programs:

The REEP statewide program is by and large a resource acquisition program. In SDGE territory, the Energy Efficiency Survey program is a non-resource program. Some performance metrics IOUs might consider for the overall REEP program are:

- What is the rate of lead generation? i.e. How many HEES participants generate participation in other REEP sub-programs?
- Does the market share for energy star consumer electronics increase?
- How frequently are customers who have participated in HEES contacted for further program participation with successful results?
- The rate at which the HEES program promotes installation of more than one measure.
- Increase in market share of super-CFLs and niche lighting products incented by IOU programs.
- Frequency of cross marketing with local government assessment district home performance program.
- Frequency of sharing of participants with local government assessment district home performance programs.

9.) Areas where more information would be desirable

- How will the REEP coordinate with ARRA?
- How will the REEP support and integrate with the emerging use of assessment districts by local governments to finance home performance?
- Roadmap to 2020 goal for existing buildings beginning with this REEP - how will a comprehensive group of single measures achieve the comprehensiveness goal #1 in the manner that the CEESP prescribes?

Residential: Comprehensive Home Performance Program (CHPP)

1) Program Summary:

The CHPP program is offered in each service territory but is not a state wide program. ED staff recommended to IOUs that this program be implemented in each territory to suit the market but coordinated through a state wide stakeholder group to insure that best practices were replicated and lessons learned were communicated. This program has the potential to make substantial progress toward Goal 1[5] of the CEESP. However, the first three years as currently described will have a minimal impact toward CEESP goals as fewer than 4,000 units are expected to be impacted statewide.

In each territory the CHPP program is a well designed Whole House Home Performance program. It delivers comprehensive energy efficiency improvement packages tailored for both the home resale and home re-modeling markets. The program solicits, screens, and trains qualified residential repair and innovation contractors to assemble capable contracting teams and perform whole house diagnostics, propose a comprehensive energy efficiency improvement package, and complete the improvements. The support and training elements include; business and technical aspects of home performance contracting; business and technical support after training; marketing assistance; mentoring assistance; quality assurance; use of industry standards; reporting systems; and access to financing and various incentives offerings through interaction with other IOU and non-IOU programs. There are also opportunities to earn voluntary industry certification as a differentiation tool.

The program is hampered by cost-effectiveness rules. Current industry cost for a whole house retrofit is $10,000 - $20,000. IOUs must include all of this in the calculation of cost effectiveness even though much of the cost generates non-energy benefits. The result is a TRC generally under 0.5. IOUs and parties have repeatedly requested an adjustment in the Commission's cost effectiveness calculation to avoid this disincentive to implement large scale comprehensive whole house programs.

IOU	Budget
SCE	$3,300,000
PGE	$4,337,236
SDGE	$4,798,000
SCG	$1,246,530
All IOUs	**$13,681,766**

2) Findings

Information omissions –

[5] Goal 1 states "Home buyers, owners and renovators will implement a whole-house approach to energy consumption that will guide their purchase and use of existing homes, home equipment (e.g. HVAC systems), household appliances, lighting, and "plug load" amenities".

- IOUs did not include ED staff recommended plans for the organization of a SW stakeholder committee.
- As a key element of the program, IOUs did not include a tools & equipment support package. This could be a powerful incentive for getting people active in the program and using the equipment. It might also be an incentive tool that can be tied to the reporting requirements for the program.
- IOUs failed to provide a detailed presentation of the actual incentive levels offered to customers (beyond mentioning leveraging the SW programs).
- IOUs did not propose program goals that satisfy the CEESP strategy of creating a path to market transformation of the home improvement industry.

3) Possible Modifications:

- IOUs could revise section 4.c to include a tools & equipment support package. IOU has flexibility to choose whether this is an incentivized package or a discount package or is tied to reporting requirements.
- IOUs should organize a state wide whole house home performance stakeholder group for the purpose of working together to coordinate best practices and lessons learned. ED staff could take a leadership role if Commission desires.
- IOUs might consider revising section 4.b to include program's use of a performance based incentive to promote greater levels of comprehensiveness.
- IOUs could revise section 6.b to include a coordination plan specific to their service territory for coordination with AB 811-type assessment districts including cross-marketing and program integration plans.
- IOUs might consider revising section 5 of their PIP to provide specific baseline and market transformation data including but not limited to:

    - Baseline # of licensed contractors
    - Baseline # of licensed contractors offering Home Performance services
    - Market transformation # of contractors required per 1,000 homes services per year.
    - Market transformation # of graduates from their training programs required to achieve their program targets.

4) Summary of CEESP Strategy Advancement:

This program has the potential to make substantial progress toward Goal 1[6] of the CEESP. However, the first three years as currently described will have a minimal impact toward CEESP goals as fewer than 4,000 units are expected to be impacted statewide.

5) Discussion of cost/savings ("program TRC"):

[6] Goal 1 states "Home buyers, owners and renovators will implement a whole-house approach to energy consumption that will guide their purchase and use of existing homes, home equipment (e.g. HVAC systems), household appliances, lighting, and "plug load" amenities".

WHPP is not a state wide program but is offered in each service territory. The SCE and SCG coordinated program was implemented as a pilot in 06-08 and is much more mature than the in SDGE and PG&E. As a result the SCE/SCG program is proposed to be a resource program.

- SCE: 0.37 (mandated) 0.45 (preferred)
- PG&E: non-resource
- SDGE: non-resource
- SCG: 0.37 (mandated) 0.45 (preferred)

As mentioned previously the program is hampered by cost-effectiveness rules. Current industry cost for a whole house retrofit is $10,000 - $20,000. IOUs must include all of this in the calculation of cost effectiveness even though much of the cost generates non-energy benefits. The result is a TRC generally under 0.5 as evident above. IOUs and parties have repeatedly requested an adjustment in the Commission's cost effectiveness calculation to avoid this disincentive to implement large scale comprehensive whole house programs. Great opportunity exists in the 09-11 cycle for significant market transformation through the twin market influences of AB 811 assessment district financing and the ARRA focus on residential weatherization, energy efficiency, and job creation.

6) Summary of baseline, market transformation and quantitative program target information:
In the amended filing, IOUs propose a plan for baseline and market transformation tracking. However, they refrain from forecasting what effect their programs will have on the transformation of markets instead referring to text indicating that transformation is not possible to attribute to any particular program.

The IOUs propose three baseline data types and one source for each. They are:

- Efficient appliance market share through the California Lighting and Appliance Saturation Survey (CLASS) with results from 2000 and 2005 and an update expected in 2010.
- Attitudes, Knowledge and Awareness change through the CA Residential Lighting and Appliances Program study, phases 1, 3, and 4, with a yet-to-be-planned update.
- Behavior change as indicated by the evaluation of rates of adoption of behavior change suggestions from the long-running Home Energy Efficiency Survey.

IOUs provided no specific Whole House Home Performance baseline information. Staff is confident that some data exists in CBPCA (CA Building Performance Contractors Association) databases and should be provided by November 1 2009 as requested in section 3 above.

7) Keystone performance metrics for non-resource programs:

- Greater than 5 % of homes served by a single substation participating in the program.
- Formation of new small business Home Performance Contractors in each service territory.
- Level of awareness of home performance as a home remodel upgrade option among home owners.
- Average consumption reduction in participant's homes, seeking CEESP goal of 40%
- Use of AB 811 financing to pay for whole house home performance retrofit.

8) Areas where more information would be desirable

- More specifics regarding incentive structure and incentive level offered.

- Discussion of apparent conflict between lower impact savings expected from participation with HEES (Home Energy Efficient Survey), and the significantly higher costs and perceived risks of participating in the WHPP.
- Discussion of the coordination of this program with CSI (CA Solar Initiative), AMI Advanced Metering Initiative), and other DSM programs.
- Greater discussion of the briefly mentioned “Distressed Home Pilot” (suggests retrofitting large numbers of foreclosed homes with HUD assistance).

Residential: California Advanced Home Program (CAHP)

1) Program Summary:

Residential New Construction programs are a sector-specific subset of the New Construction statewide program. In each service territory a CAHP subprogram will be implemented and represents over 95% of the RNC budget. In each service territory except SDGE, the Energy Star Manufactured Homes subprogram will be implemented, representing less than 5% of the RNC budget. Due to its budget, savings impact, and CEESP Big Bold status, only the CAHP program is summarized here. The ESMH addresses a segment of the residential market that would otherwise be a lost opportunity. As an upstream program, cost effective and relatively comprehensive savings can be achieved for relatively little funding.

The California Advanced Home Program encourages single and multi-family builders of all production volumes to construct homes that exceed California's Title 24 energy efficiency standards by a minimum of 15%. This goal will be achieved through a combination of incentives, technical education, design assistance and verification. With respect to the Strategic Plan, the CAHP targets an interim goal of 50% of Residential New Construction to Tier II (2005) level by 2011, and a final goal of 100% of Residential New Construction to "net zero" by 2020.

Through a pay-for-performance sliding scale incentive structure that is based on the Savings By Design (SBD) whole building approach, CAHP will encourage builders to exceed Title 24 energy efficiency standards by 15% to 45%. Performance bonus adders, design team incentives and some prescriptive measure incentives will also be included to encourage green building initiatives, use of ENERGY STAR® appliances, compact homes, and solar thermal installations. In addition, several non-incentive customer services will be offered, including technical support to energy analysts and design teams, economic modeling, measure-selection support, marketing support, and integrated demand-side management (DSM) to maximize Residential energy reductions. CAHP contains a program element that will focus on zero-net energy technologies and strategies in advance of the mainstream CAHP participants. This element is referred to as ZNEH in SCE, SDG&E, and SCG territory but is referred to as Zero Net Energy Pilot in PG&E territory. Participants differ from standard CAHP participants in that they must seek to build 45% better than Title 24 2008 and must include onsite generation. Both ZNEH and its overarching program CAHP will be closely coordinated with the CEC implemented New Solar Homes Program (NSHP). ZNEH has no separate budget or savings data from CAHP.

RNC Programs[7]	Budget (Millions)	kWh	kW	Therms
SCE				
CAHP	$24.9	14,517,212	13,583	-
ESMH	$3.5	2,827,100	1,807	-
PG&E				
CAHP	$64.0	56,905,228	37,978	1,001,806
ESMH	$2.0	5,176,080	2,392	175,500
SCG				

[7] Budget and Savings numbers are for 2009-11 Program period unless otherwise stated

CAHP	$13.0	16,752,108	18,427	837,605
SDG&E				
CAHP	$12.7	870,546	1,045	110,040
RNC Totals	**$126.5**	**NA**	**NA**	**NA**

2) Issues to Consider

CAHP PIP Formatting/Content Omissions:
The major omission/error in the RNC portfolio was the flawed logic used by IOUs to calculate their path to achievement of 50% market penetration in 2011. IOUs received clarification from ED staff that the goal was for the market, not just for IOU programs. However, IOUs in their PIP confused the CEESP target to mean market achievement of the savings equivalent of 50% penetration of homes built 35% more efficient than 2005 Title 24. This would favor counting the 2008 code improvement of ~15% as partial achievement of the CEESP target. IOUs argued that 100% of the market at 15% better (i.e. all homes in CA are built to 2008 Title 24 code), is the equivalent of 50% of the market being 30% better.

3) Possible Modifications:

- IOUs could revise in section 6 the discussion of the path to market transformation including both assumptions and metrics. The revision might be based on a consensus perspective reached by ED staff and the IOUs. Such consensus should be achieved prior to the date of the final decision approving this portfolio.

- IOUs could consider revising their baseline of estimated housing start levels. Current IOUs implementation plans are based on dated projections overestimating the level by at least 25%. Such overestimation will result in larger budgets than necessary. The baseline revision could also be reflected in updated budget, savings, and incentive level tables within the PIP.

- IOUs could host a public workshop to discuss how the CAHP program could achieve its objectives even if it were "ring-fenced" and removed from the calculation of the Performance Earnings Basis.

4) Summary of support for SW Program requirements (see Oct. 30th Ruling for details).

There is strong continuity across IOUs as all single-family (SF) and multi-family (MF) builder incentive programs are offered through CAHP, with the exception of PG&E's California New Homes Multi-family Program which is offered as a local program and is not reviewed here.[8] The following issues were identified in the Oct. 30th Ruling as criteria for Statewide Programs:

a) Program name- COMPLIES
b) Incentive levels offered- COMPLIES
c) Same or very similar delivery mechanisms- COMPLIES
d) Same or very similar marketing materials- COMPLIES
e) Regular inter-utility coordination- COMPLIES
f) On-going review and adoption of best practices and feed-back from program evaluations across the utilities- COMPLIES, could be better

[8] In January "small tweaks", CPUC RNC Review Team recommended PG&E work with third party vendor, HMG, toward MF Program alignment with CAHP.

g) Intra-utility coordinated actions with state, local and federal agencies and other key actors- COMPLIES

5) CEESP Strategies Support

a) The CAHP program was designed in support of the CEESP Zero Net Energy homes by 2020 Goal and 2011 Milestones, however:
   - Short-term strategy to 2011 is well outlined but not justified with empirical evidence. Given that RNC programs are not new what assurances can IOUs give the Commission that short term strategy will work? Can IOUs identify the weakest links in their strategy?
   - Long-term 2020 goals are generically addressed but with a complete lack of strategy for getting there. Greater attention to the mid and long term strategy would improve the program's argument.

b) Areas of strategic plan that address non-market penetration goals are very poorly addressed (e.g. plug loads).

6) Discussion of cost/savings ("program TRC"):

The CAHP program is proposed to be ring-fenced. However, the entire New Construction state wide program (including Savings By Design, the commercial new construction program, as well as the CAHP and ESMH) are reported by IOUs to have an average cost effective around 1.5.

7) Summary of baseline, market transformation and quantitative program target information:

In the amended filing, IOUs propose a plan for baseline and market transformation tracking. However, they refrain from forecasting what effect their programs will have on the transformation of markets instead referring to text indicating that transformation is not possible to attribute to any particular program.

The IOUs propose two baseline data types and one source for each. They are:
- Percent of market participating in program – goal of 50%. Data gathered by IOU program managers
- Average compliance margin of residential new construction. Data gathered by a sample survey of new residences in multiple climate zones.

The IOUs provide very little specific baseline data regarding current participation levels or incremental cost of building above code.

8) Keystone performance metrics for non-resource programs:

CAHP is proposed for ring-fencing making performance metrics critical! Suggestions include:
- What % of participants exceed T24 2008 by 20% or more
- 25% of participants reaching Tier II (30% better than T24 2008).
- 25% of participants also partnering with NSHP (solar).

9) Areas where more information would be desirable:
Stated in section 3 above:

2009-11 Zero Net Energy Pilot Program

PIP #	Program Name	Budget
PG&E2112	Zero Net Energy Pilot Program	$35,316,007

Summary of Program

The Zero Net Energy (ZNE)[9] Pilot Program supports the Strategic Plan by initiating research, development, and demonstration (RD&D) projects around ZNE buildings. The ZNE Pilot Program aligns with the implementation plan and timeline of the Strategic Plan, aiming to "push" the development of long-term (2016 – 2030) cost-effective technologies to the market while "pulling" customers towards the adoption of long-term advanced energy efficiency (EE) technologies and practices.

The ZNE Pilot Program will engage ***"whole building"*** research, development, and demonstration projects that meet the California Energy Commission's Tier II requirements and that have a plan to include on-site clean distributed generation. In this way, the ZNE Pilot Program will build on the foundations laid by the CAHP and SBD programs[10] and provide a clear link to the mid-term (2012 – 2015) and long-term (2016 – 2030) timeline outlined in the Strategic Plan.

Playing a coordinating role, the ZNE Pilot Program will engage the publicly owned and investor owned utilities; developers, architects, builders, municipalities, and redevelopment agencies; the CEC PIER program; the U.S. Department of Energy (DOE) National Laboratories (National Renewable Energy Laboratory, Lawrence Berkeley National Laboratory, etc.); professional building and trade associations; research institutions; state, federal, regional and local agencies; and the CPUC. To support this approach, teams will be encouraged to flex a full range of integrated demand-side management (IDSM) options such as Energy Efficiency (EE), Demand Response (DR), Distributed Generation (DG)[11], and Advanced Metering Infrastructure (AMI) as well as Renewable Energy (RE) systems that have the capacity to serve multiple homes and/or businesses. In addition to engaging whole building design, ZNE pilot will push towards land-use planning issues such as building orientation, compact planning, transit oriented development, advanced and efficient district heating and cooling systems. ZNE pilot program will also target low and moderate-income communities that will serve as a stepping stone toward ZNE for the existing residential and commercial structures in California.

[9] "Zero net energy" is defined as "the implementation of a combination of building energy efficiency design features and on-site clean distributed generation that result in no net purchases from the electricity or gas grid, at the level of a single "project" seeking development entitlements and building code permits."

[10] California Advanced Homes Program (CAHP) encourages residential teams to exceed California's Title 24 EE standard by a minimum of 15%, while the proposed Savings By Design Program (SBD) encourages commercial teams to exceed Title 24 by a minimum of 10%.

[11] Distributed generation systems will not be funded using EE public goods fund charges, and any investigations of DG systems will be limited to technologies that have been pre-approved by the CPUC in programs such as the Self-Generation Incentive Program (SGIP).

The ZNE Pilot program consists of four subprograms (non-incentive services):

1. ZNE Communities Subprogram
2. ZNE Demonstration Showcases
3. ZNE Technology Advancement
4. ZNE Design Integration

1) ZNE Communities Subprogram

The ZNE Communities Subprogram[12] will offer design assistance and technical support to teams considering commercial or residential projects. The Communities Subprogram will target mixed-use complexes, multi-family complexes, advanced residential new construction, advanced commercial new construction, compact development, and transit-oriented development at the early stages of the entitlement and design process, helping to capture energy and resource savings that would normally fall outside of the scope of a typical project.

To implement the program, the Communities Subprogram will coordinate[13] with the other IOU non-resource Sustainable Community and ZNE programs and the statewide CAHP and SBD programs. As part of this effort, the subprogram will engage in the following steps on the path to ZNE:

- Raising plug load efficiency,
- Whole building solutions, with a focus on zero peak buildings as an interim step toward ZNE homes and commercial buildings,
- Building monitoring and visual display tools,
- Green Building Codes and Standards,
- Integrated Demand Side Management, including EE, DR, DG, and AMI.

The Communities Subprogram will provide cost-sharing for commissioning to achieve ZNE status; Recommend operations and maintenance procedures to maintain ZNE; Assist with the development of owners manuals; prepare and publish case studies; Scaled field placements made available from the ETP will be offered to developers that participate in this program; and Approaches to exceeding Title 24 and any local implementation issues will be coordinated with the Codes and Standards program.

[12] To be eligible to participate in the ZNE Communities Subprogram, a project will need to be: In the early stages of entitlement, planning, or design; Primarily a residential or commercial development; Plan to exceed Title 24 by at least 30% (CEC Tier II); and Plan to include on-site clean distributed generation. Preference will be given to projects that exceed these minimum requirements, include more than one building in the development, include other principles of sustainable development, and are targeting a certification from an established green building rating system such as the Leadership in Energy and Environmental Design (LEED) or Build it Green (BIG). *See also summaries in commercial and residential sectors.*

[13] The ZNE Communities Subprogram will share lessons learned and coordinate as applicable with the Southern California Edison (SCE) Sustainable Communities Program (SCP), the San Diego Gas & Electric (SDG&E) Advanced Home and Sustainable Community Case Studies Programs, and the Sacramento Municipal Utility District (SMUD) SolarSmart and Advantage Homes Programs; as well as CEC PIER and ARB.

2) ZNE Demonstration Showcase Subprogram

The Demonstration Showcase Subprogram has three key elements: the *administration and operation of the ZNE Demonstration Home and Laboratory*, *a series of commercial and residential demonstration projects*[14], and *case studies and performance monitoring and assessment of existing passive, low energy, and ZNE buildings*[15].

To expedite design and construction, both the ZNE Demonstration Home and Laboratory facilities will be initiated by the Emerging Technologies Program. Once the ZNE Pilot Program is fully established, it will assume the administration and operation of both facilities. The Pilot Program will initiate a series of third-party demonstration residential and commercial projects[16].

3) ZNE Technology Advancement Subprogram

The ZNE Pilot Program will integrate with the existing Emerging Technologies Program (ETP) to deliver information, insights, analytical tools, and resources to accelerate and expand the commercialization of innovative technologies as stated in the CEESP. In this integration, the ZNE Pilot Program can provide the ETP essential information and insights on customer/community planning needs, as well as technology integration opportunities to help the ETP screen and assess potential technologies. To support the ZNE Pilot Program, the ETP will provide insights on technology evolution and trends, market potential, adoption rates, participate in vendor technology evaluations, implement pilot programs, and design specifications for needed technology.[17]

4) ZNE Design Integration Subprogram

The ZNE Pilot Program will develop and disseminate information on the best practices for the design of ZNE communities, buildings, and homes by engaging organizations such as the American Institute of Architects California Council (AIACC), the U.S. Green Building Council (USGBC), and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Additionally, in order to close the loop and allow for the evaluation of proposed ZNE communities, buildings, and homes, assistance will be offered to planning and code officials who are in the process of reviewing proposed ZNE buildings and development.

The results of this Subprogram will include best practice guidelines and software tools to design and evaluate "beyond-code" projects. The goal will be to close the loop from design through occupancy, including project phases such as code review and on-site code related inspections. This will require convening and coordinating the ongoing efforts of national energy experts, software developers, regulatory bodies, and code officials to adopt a common language for the design, construction, and evaluation of ZNE buildings.

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[14] This subprogram will coordinate with ETP to include a series of commercial and residential scaled field placements.

[15] PG&E plans to partner with the other IOUs and research organizations such as the CEC PIER program, the Lawrence Berkeley National Laboratory (LBNL), and the National Renewable Energy Laboratory (NREL) to provide design and technical assistance for a series of pilot commercial buildings that showcase techniques, technologies, and designs that are on the path to ZNE. Also, the program will coordinate with the CEC PIER, ARB, and US DOE.

[16] Similar in concept to the "Home of the Future" program currently administered by the Sacramento Municipal Utility District (SMUD), PG&E will provide detailed technical assistance, design assistance, and cost sharing of advanced EE measures for developers and design teams interested in building cutting edge homes and commercial buildings. In exchange for this assistance, after the design and construction is complete, each home and building will be made available to the public, published as a case study, and subjected to performance verification and assessment.

[17] From the description under this subprogram, it seems much of its proposed activities is already captured in the ETP program; further discussions with the IOUs might help in elaborating the significance of this subprogram.

ED Findings and Questions

- The ZNE Pilot program consists of four subprograms (non-incentive services):
    1. ZNE Communities Subprogram (33% of the total ZNE Pilot program budget)
    2. ZNE Demonstration Showcases (21% of the total ZNE Pilot program budget)
    3. ZNE Technology Advancement (25% of the total ZNE Pilot program budget)
    4. ZNE Design Integration (21% of the total ZNE Pilot program budget)

- The PIP is missing specific goals, objectives and strategies for each of the subprogram

- The PIP is missing quantitative market transformation targets

- The PIP is missing quantitative program targets

- Based on the program logic model, it would be helpful if the IOUs could provide performance metrics that will be used to evaluate the program short, intermediate and long term outcomes

- EM&V: PG&E stated in their PIP that they will develop meaningful baseline and market transformation concepts and metrics for programs that do not currently have them, and then propose to design and administer studies to gather and track consistent, reliable and valid baseline and market effects data. They proposed to use the program logic models and The California Evaluation Framework (2004) as guides, and to begin this work after approval of the Application, using funding provided for Evaluation, Measurement & Verification. ED would like to know what would be the process for PG&E to develop these metrics.

- ED suggests that all evaluation activities be administered and implemented by an independent evaluator and should be under the direction of the CPUC.

- PG&E stated that they expect that the baseline studies should (1) adequately describe the operation of markets that are targeted by a program, (2) confirm our tentative identification of measurable parameters that would indicate changes towards greater efficiency in the market(s) and that are likely to be affected by the program, and (3) gather the current values of those parameters, to serve as baselines against which future market movement can be tracked. Could PG&E identify what baseline studies required to be in place for 2009-11 programs?

- The ZNE Pilot PIP includes a detailed section (Appendix 1 of the PIP) where the program will use specific objectives and strategies to meet the CEESP (B)

- ED suggests that PG&E should provide provision of baseline, market transformation and quantitative program target information, and any recommendations for further quantitative information or work needed in these areas

- PG&E stated in their PIP: “Upon beginning of the program, the logic models should be refined and the IOUs are expected to work closely with ED to establish performance indicators for the different subprograms based on the provided logic models as well as

solidify the quantitative program targets." The process for PG&E to work with ED on these issues should be elaborated.

- It would be helpful if PG&E could provide an explanation whether the ETP and ZNE Pilot program are implemented by the same staff/and or program managers

- It would be helpful if IOUs could explain how the budget/effort will be leveraged between ETP and ZNE Pilot program

- **How will PG&E ZNE pilot program interact and coordinate with other ZNE work across the IOUs and in the external market?**

- **Does PG&E have a long term plan to transform the ZNE Market in CA?**

Commercial : Energy Division Program Findings

PIP Number	Name	Budget in Millions	ED Findings
STATEWIDE PROGRAMS			
1. SCE-SW-002 2. PGE2101 3. SDG&E 4. SCG	**Commercial Energy Efficiency Program (CEEP) Total**	**1. $222.8 2. $205.2 3. $56.7 4. $23.5**	1) Benchmarking is an important element in reaching ZNE, and should be an inherent program activity in all appropriate sub programs. 2) Defining a more cohesive ZNE strategy would be helpful to understand how different programs work together and coordinate to achieve deep energy savings.
1. SCE-SW-002a 2. PGE2101 3. SDG&E-SW-ComC 4. SCG- #SW-ComC	Non-Residential Audits	1. $10.3 2. $24.1 3. $1.8 4. $1.5	ED advises benchmarking to occur at the audit phase to include Energy Star ratings for all relevant buildings (ex. Maybe use energy performance manager).
1. SCE-SW-002b 2. PGE2101 3. SDG&E-SW-ComA 4. SCG-#SW-ComA	Calculated Incentives	1. $51.1 2. $125.9 3. $15.1 4. $6.2	Benchmarking all projects beyond a specific $/kWh would be helpful. Is an audit a prerequisite for this sub-program?
1. SCE-SW-002c 2. PGE2101 3. SDG&E-SW-ComB 4. SCG- #SW-ComB	Deemed Incentives	1. $52.9 2. $53.5 3. $15.9 4. $15	
1. SCE-SW-002d 2. PGE2101 3. SDG&E-SW-ComE 4. SCG –#SW-ComE	Commercial Direct Install	1. $107.9 2. n/a 3. $22.3 4. n/a	Program management is a key element for success. This program would benefit from a more detailed specification on management structure between Faith Based Organizations & Community Based Organizations.
1. SCE-SW-002e 2. PG&E2101 3. SDG&E-SW-ComD 4. SCG-#SW-ComD	Continuous Energy Improvement	1. $.6 2. $1.8 3. $1.1 4. $.8	
SCE-SW-002f	Energy Efficiency for	$2.1	ED recommends to relocate this IOU SW program to the 3rd Party PIP, as this

	Entertainment Centers		is a niche market and not consistent with the other IOU SW programs.
SCE-SW-002g	Private Schools and Colleges Program	$2.5	1) ED recommends to relocate this IOU SW program to the 3rd Party PIP, as this is a niche market and not consistent with the other IOU SW programs. 2) ED suggests including benchmarking for all K-12 private schools.
SCE-SW-002h	California Preschools Program	$4.2	ED recommends to relocate this IOU SW program to the 3rd Party PIP, as this is a niche market and not consistent with the other IOU SW programs.
1. SCE-SW-005a 2. PGE2104 3. SDG&E 4. SCG-#SW-NCNR	**Commercial New Construction : Savings By Design**	**1. $49.2 2. $26.3 3. $13 4. $7.6**	1) A Zero Energy Task Force is recommended to ensure strategic coordination. 2) SBD should outline specific targets with a set of process evaluations developed to monitor savings to participants. 3) All buildings involved in the SBD program should be benchmarked.
LOCAL PROGRAMS			
PG&E			
PG&E2114	On-Bill Financing	$32.8	
SCE			
SCE-L-002	Financial Solutions	$24	Could a reduction in the minimum loan amount from $5,000 to $2,500, increase participation for small business?
SDG&E and SCG			
SDGE-Local03 SCG-#Local05	Local Non-Residential (BID)	1. $26.5 2. $.27	
SDGE-Local04 (new)	Local Sustainable Communities (RMV)	$1	1) Clarity around what components of sustainability are actually addressed in commercial buildings and to what extent. 2) Consider building and contractor training in a different program which focuses more downstream. 3) Explain the criteria that will be used to identify target communities for kiosk installation. 4) How will this impact community development? 5) How many projects will be targeted for design assistance? 6) Clear management structure should

			be prevalent as well as a feedback loop with other programs.
SDGE-Local05 SCG-#Local01	On-Bill Financing (OBF)	1. $2.6 2. $2.8	1) Further explanation of how the allocated budget will allow for effective participation in the program 2) Are rebates/incentive programs the only opportunities addressed in the OBF program?
SDGE-Local06 (new) SCG-#Local04	Local Strategic Development & Integration	1. $2.1 2. $.85	A detailed explanation could be provided of how oversight of the local and SW programs will occur. How will the implementation strategies meet the planned goals?
THIRD PARTY PROGRAMS			
PGE		**$165.7**	
PGE-2188	Retro-Commissioning	$10	
PGE-2203	Monitoring-Based Commissioning	$5.3	
PGE-2187	Monitoring-Based Persistence Commissioning	$3.3	
PGE-2181	Air Care Plus	$7.7	
PGE-2182	Boiler Energy Efficiency Program	$10.8	
PGE-2183	Comprehensive Retail Energy Management	$2.7	
PGE-2184	EE Partnership for California State-Leased Facilities	$1.2	
NR PGE-2185	Energy Smart Grocer	$17	
PGE-2186	Enhanced Automation Initiative	$2.2	
PGE-2189	Cool Controls Plus	$12.9	
PGE-2190	Lodging Savers	$8.3	
PGE-2191	Medical Building Tune-Up	$3.2	
PGE-2192	Campus	$1.8	

	Housing Efficiency Solutions		
PGE-2193	School Energy Efficiency	$3.3	
PGE-2194	Energy Fitness Program	$9.1	
PGE-2195	Energy Savers	$4.4	
PGE-2196	RightLights	$17.5	
PGE-2197	Small Business Commercial Comprehensive	$6	
PGE-2198	DCCCP Quest	$2.5	
PGE-2199	Energy-Efficient Parking Garage	$2.5	
PGE-2200	Furniture Store Energy Efficiency	$2.8	
PGE-2201	High Performance Office Lighting	$5.9	
PGE-2202	LED Accelerator	$2.6	
PGE-2204	SmartVent for Energy-Efficient Kitchens	$5.5	
PGE-2205	Casino Green	$3.1	
PGE-2206	Healthcare Energy Efficiency Program	$3.4	
PGE-2207	Healthcare Gas Efficiency Program	$.8	
PGE-2208	Hospitality Steam Systems	$1.8	
PGE-2209	Ozone Laundry Energy Efficiency	$1.5	
PGE-2210	Cool Schools	$1.1	
PGE-2211	Small Commercial Boiler Repair and Tune-Up	$1	
PGE-2212	California Preschools Program	$2.2	1) ED recommends to relocate this IOU SW program to the 3rd Party PIP, as this is a niche market and not consistent with the other IOU SW programs.
PGE-2213	Private Schools and Colleges	$2	1) ED recommends to relocate this IOU SW program to the 3rd Party PIP, as this

	Program		is a niche market and not consistent with the other IOU SW programs. 2) ED suggests benchmarking for all K-12 private schools.
PGE-2214	Energy Efficiency for Entertainment Centers	$3	ED recommends to relocate this IOU SW program to the 3rd Party PIP, as this is a niche market and not consistent with the other IOU SW programs.
SCE		**$201.5**	
SCE-TP-027	Monitoring-Based Commissioning	$7	
SCE-TP-028	Monitoring-Based Commissioning	$2.3	
SCE-TP-030	Sustainable Portfolios	$8.7	1) Program should be noted as a pilot effort; or 2) Clear Progress indicators should be identified to track program objectives ; 3) Would be helpful to see a more detailed program implementation plan or monthly report (to PU C or IOU).
SCE-TP-033	Automatic Energy Review of Schools	$2	Rigorous EM&V could be helpful to track progress and problems solved by this program.
SCE TP-034	Sustainable Communities	$14.3	1) A detailed budget allocation is needed to better understand program objectives. 2) Management structure to show coordination and responsibility with other SW programs would be helpful. 3) Feedback loops should be in place to ensure ongoing meetings and knowledge is transferring from pilot to utility program
SCE-TP-005	Cool Planet	$.5	
SCE-TP-006	Healthcare EE Program	$4	
SCE TP-007	Livestock Industry Resource Advantage	$3.6	
SCE-TP-008	Comprehensive Beverage Manufacturing and Resource Efficiency	$1.5	
SCE-TP-009	Solid Waste	$1.7	

	Energy Efficiency Program		
SCE TP-010	Data Center Energy Efficiency	$2.8	
SCE-TP-011	Date Center Optimization	$3	
SCE-TP-012	Lodging EE Program	$8.8	
SCE TP-013	Food & Kindred Products	$7.7	
SCE-TP-014	Primary and Fabricated Metals	$9.3	
SCE-TP-015	Industrial Gases	$3.4	
SCE-TP-016	Nonmetallic Minerals and Products	$6.2	
SCE-TP-017	Comprehensive Chemical Products	$7	
SCE-TP-018	Chemical Products Efficiency Program	$4.7	
SCE-TP-019	Comprehensive Petroleum Refining	$3.7	
SCE-TP-020	Oil Production	$4.7	
SCE-TP-021	Refinery Energy Efficiency Program	$3.7	
SCE-TP-022	High Performance Hospitals	$3	
SCE-TP-023	Cool Schools	$8.1	
SCE-TP-024	Public Pre-Schools, Elementary Schools and High Schools	$4	
SCE-TP-025	Retail Energy Action Program	$20.6	
SCE-TP-026	Commercial Utility Building Efficiency	$32.6	
SCE-TP-029	Leased Office Space Retrofit Program	$2.3	

SCE-TP-031	Management Affiliates Program	$5.4	
SCE-TP-032	Private College Campus Housing	$1.3	
SCE-TP-035	Third Party Solicitations Program	$54.6	
SDG&E			
SDG&E	All Third-Party Commercial Sector Energy Efficiency Subprograms	**$16.2**	1) Stakeholder steering committee meeting could be formed to allow flexibility of the planning process, as well as to oversee programs, and discuss adjustments. 2) Explanation of how third party programs coordinate with each other could be helpful. 3) A clear explanation of how the subprograms will contribute to the goal of making 50% of existing commercial buildings equivalent to ZNEB would be beneficial for analysis. 4) Benchmarking emphasis is oddly not present in all PIPs.
3P-NRes01 (new)	Premium Efficiency Cooling	$2.3	
3P-NRes02 (new)	Hot Water Control with Continuous Commissioning (SaveGas)	$.27	
3P-NRes03	Business Energy Assessment (Energy Challenger)	$.46	
3P-NRes04	M2M Hot Water & HVAC Controls for Restaurants	$3.4	
3P-NRes05	Smart Controls for Pools and Spas	$1.8	
3P-NRes07	Healthcare Energy Efficiency	$.24	How will the allocated budget of $.24 million allow for the aggressive program goals surrounding “comprehensive” audits, retrofits, and measure upgrades?

3P-NRes08	Lodging Energy Efficiency	$.39	
3P-NRes09	Mobile Energy Clinic	$2.6	
3P-NRes10 (new)	K-12 Private Schools and Colleges Audit and Retrofit	$.67	
3P-NRes11	Portfolio of the Future	$.67	
3P-NRes13	Retro-Commissioning (RCx)	$3.3	
SCG			
SCG	All Third-Party Commercial Sector Energy Efficiency Subprograms	**$15.9**	1) Stakeholder steering committee meeting should be formed to allow flexibility of the planning process, as well as to oversee programs, and discuss adjustments. 2) Explanation of how third party programs coordinate with each other. 3) A clear explanation of how the subprograms will contribute to the goal of making 50% of existing commercial buildings equivalent to ZNEB would be beneficial for analysis. 4) Benchmarking should be prevalent in all PIPs.
#3P-NRes01	Steam Trap and Compressed Air Survey	$3.1	
#3P-NRes02	Energy Challenger	$.17	
#3P-NRes04	Program for Resource Efficiency in P	$.95	
#3P-Xc01	Gas Cooling Retrofit	$.28	
#3P-Xco2	SaveGas-Hot Water Control	$7.1	
#3P-Xco4	California Sustainability Alliance	$2.2	
#3P-Xco5	Portfolio of the Future (PoF)	$2.2	
TOTAL Budget for all 4 IOUs **1. SCE** **2. PG&E** **3. SDG&E** **4. SCG**		**1. $470.5** **2. $457** **3. $137** **4. $50.9**	

Commercial Energy Efficiency Program (CEEP)

Summary

The CEEP offered by the four IOUs organizes a well-integrated set of state-wide programs to both overcome traditional market barriers and achieve optimal energy management for existing commercial buildings. Included in the CEEP are three resource sub-programs (Calculated Incentives, Deemed Incentives, and Direct Install), and two non-resource subprograms (Continuous Energy Improvement (CEI) and Non-Residential Audits). Key innovations are:

a. a robust, state-wide, adaptive management structure;
b. a new program element aimed at business commitments to energy efficiency as a business strategy (the CEI Sub-program); and
c. Increased emphasis on target markets as a program strategy.

Non-Compliance Issues

While the metrics look good, there is a lack of framework within which they are presented. No explanation is mentioned on why the specified targets and metrics were chosen. A few exceptions where quantitative program targets were noted include: SCE reports program targets for Retrofit projects under their Direct Install Sub-program, PG&E and SCG reports Audit, CEI indicator and Incentives. SCE is missing Thermal Savings for all sub-programs.

Possible Modifications

Minor Modifications: All IOUs could have a related set of process/management evaluations developed that can assist the adaptive management process and identify better ways of reaching customers and deepening savings treatment for program participants. Four specific recommendations include:

- Broader benchmarking requirements are needed. Including language that the Nonresidential Audit sub-program should incorporate benchmarking, typically Energy Star ratings, for building types where either Energy Star or California specific benchmarking is available.
- The Calculated Incentives Program could consider or require benchmarking for projects beyond a specific dollar/kWh size.
- Creating a Zero Energy Pathway Task Force could be required, to ensure better coordination among various programs, and better definition of deeper savings goals including consensus on:
    a) Appropriate ZNE program metrics
    b) Coordination of process evaluations for adaptive management
    c) EM&V of building energy performance that includes coordination of findings with IOU, building owners and design community
    d) Review of new technologies for ZNE buildings (existing and new)
    e) Support of strategic planning functions relating to ZNE buildings
- Clarity around PGE Direct Install is needed. The budget is missing for this sub-program, with the PIP summary located under the SW program but noting DI efforts will be delivered exclusively by third party bidders.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).

In general, the IOUs have succeeded in creating a true State-Wide Program, with two minor exceptions:

a) Direct Install program for PG&E, a SW sub-program which is mentioned in the core SW programs, but is described as being administered by a 3rd Party Program. The budget and savings data is mentioned neither in the Core SW Program Budget or the Third Party Program Budget in Table 5A.
b) Three core SW programs (Energy Efficiency for Entertainment Centers, Private Schools and Colleges Program, and California Preschools Program) should be moved and reclassified as 3rd Party Programs as they are niche markets with 3rd Party implementers that do not line up with the core SW programs.

The plan for statewide IOU coordination is good with regular program manager meetings, designated IOU program "leads", regular steering committee meetings to create feedback loops and collaboration of best practices with IOU sub-programs. Development of a Universal Energy Audit Tool (i.e. UEAT) is also a good innovation tool to enhance statewide consistency of energy audits and coordinated effort. Additional efforts toward IOU and POU collaboration on non-residential audits and in general would be beneficial, as well as non-utility market initiatives.

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Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.

The PIP generally relates how the specified SW programs represent the CEESP in terms of integrated DSM, workforce training, codes and standards, etc. Strategies *2-1, 2-3, 2-5, 2-7,* and *2-8* were all mentioned throughout the PIP.

There are two key weaker areas that need further development:

- Benchmarking which is noted as a key element of the Strategic Plan for existing commercial program activity.
- A path to zero-net energy buildings is not clearly described. There is much discussion under Office of the Future and Savings by Design, but strategies that constitute deep energy retrofits is needed, as are indications of how 50% of existing buildings will be made equivalent to zero net energy buildings by 2030. Targets could be outlined and developed, as this information is needs to be a major part of the program if it intends to be transformative.

"Program TRC"

The largest sub-program element is the Commercial Direct Install Program, which is less cost-effective than other related resource sub-programs. This could be appropriate given the small business market that is served by this program, **although it is not clear that this sub-program reaches an appropriate level of depth in serving the market**, i.e. which measures are installed and at what frequency. It would be helpful if more information was provided on how the Direct Install program actually works with the various other programs and 3rd Party contractors.

Baseline, market transformation and quantitative program target information.

Baseline information and quantitative targets other than energy savings were not included in the original PIP submission, which proposes that these be developed as part of the EM&V work by the IOU in coordination with the Energy Division. One exception is the number of "Retrofit Projects" targeted by the Direct Install Program annually. The development of better baseline

information and program targets such as number of buildings and/or square footage served would be valuable in assessing the program effort.

"Keystone" performance metrics for non-resource programs in particular.

- One "keystone metric" would be the number of customers who are benchmarking their facilities or developing their own energy efficient strategic plan—the goal of the non-resource CEI program.
- For the Nonresidential Audit Program, the number of customers that pursue action through resource programs following the audits should be tracked. This should also occur within sub-program. (i.e. The number of customers that pursue retro-commissioning (or significant related activities) after receiving a retro- commissioning audit should be tracked). *Audit program activities without sufficient follow-up are a non-productive use of resources.
- A third keystone metric, related to market transformation, would be the number of customers that specify, purchase, install, and maintain energy efficient technologies based on its intrinsic value or "to keep up with the Jones" without the need for rebates or other incentives.

Areas where more information would be desirable.

- A list of measures typically installed in the Direct Install Program would be helpful, as well as how this program can be directly linked to other sub-programs and/or on bill financing to improve the depth and reach of this (relatively) expensive program.
- An organizational chart could be created to show interactions between all sub-programs (Including the non-statewide ones). The chart could include the fraction of program savings and costs attributed to each element.
- The rationale for a retro-commissioning audit, as opposed to a retro-commissioning program could be discussed such as:
    a. What are the relative costs (per square foot)?
    b. What are the expectations for follow-up activities on retro-commissioning audits?
    c. What percentage of retro-commissioning projects shows little or no savings, thereby implying that an audit is even needed as a separate and preliminary step?

Statewide New Construction Program: Saving By Design (SBD)

Summary

Savings by Design (SBD) is the commercial buildings sub-program for new construction. It encourages use of whole-building design approaches that achieve energy efficiency and green building practices significantly better than Title 24 code. SBD has operated as a state-wide program for many years, and includes Sacramento Utility District as well as the IOUs. The IOU SBD proposals include: feasibility studies, pilot projects, training, peak load reduction incentives, integrated design incentives for the design team, sustainability incentives (linked to various green programs), commissioning and monitoring of energy performance at the individual building level.

"Non-Compliance Issues"

No non-compliance issues identified so far except the exclusion of quantitative baseline and market transformation information.

Possible Modifications

1. A Zero Energy Task Force could be formed to ensure strategic coordination occurs between ET, C&S, Sustainable Communities and SBD. SBD notes a close coordination will exist amongst these programs, but does not provide a plan
2. SBD could also include specific targets of substantial per-project performance increase for at least a percentage of projects.
    - Related to these targets could be a set of market/process evaluations developed that can identify mechanisms for deepening savings treatment for program participants, especially in the current economic conditions.
3. Clarity around what percent of projects will be benchmarked would be helpful. The PIPs are unclear with many noting that 10% of SBD projects will be monitored by ENERGY STAR benchmarking, while others mentioning under Program evaluation that "All SBD projects will be benchmarked". The CEESP presents aggressive goals that require benchmarking.
4. Incorporation and mention of how AB1103 will integrate into this program plan and provide insight once a building is constructed and has become an "existing" building.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).

SBD is an ongoing state-wide program that has effective management, brand name recognition, a mechanism for working with chains/franchises, and good leverage with partners beyond the IOUs – as this is not a new program. The SBD program has addressed IOU coordination and IDSM through interaction with California Lighting Technology Center, using *Office Of The Future* to advance demand response and integration of photovoltaic systems in their whole building approach.

In addition, one innovative measure that needs further Commission analysis in the PIPs includes utility ownership of major HVAC systems to assure highest efficiency equipment.

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.

The New Construction PIP addresses a number of the CEESP strategies and generally, the program description aligns well with a few exceptions. Similar to the SW Commercial Program for Existing Buildings, there is a deficiency of planning around benchmarking and specific goals for participation in the new "Path to Zero campaign

"Program TRC"

Program TRC is not available, but gross and per kWh savings are presented. Rough savings per dollar for SBD are similar to the Calculated and Deemed subprograms for SCE, which is remarkable given the depth of savings in SBD. These numbers imply that the SBD program could be even more aggressive in pursuing increased depth of savings, or in focusing non-resource generating program elements at the market, e.g. education.

Baseline, market transformation and quantitative program target information.

PG&E is the only IOU with quantitative program targets in Table 5 for SBD. Overall, all market transformation, baseline, and quantitative program targets were absent (until March 25, 2009) - only savings goals are noted. Given the history of the SBD Program, it seems like baseline information should be available.

"Keystone" performance metrics for non-resource programs.

The PG&E New Construction Savings by Design program has identified several broad program targets including:

- Increased percentages for participants
- Industry partnerships
- Number of whole building design approach
- Education of designers and attitudes of the owner/developer community.

These could be applied across all IOUs.

Areas where more information would be desirable.

- Performance metrics that lead to the goal of zero-net energy is desired. Any efforts where the IOUs have considered/funded in this regard should be provided.
- As the SBD sub-program evolves, an EM&V process should be defined for presenting and approving the changes.
- Is a $5,000 stipend enough to increase participation in integrated design process for the Whole Building approach? Extra information could be helpful in understanding the rationale for this stipend amount.
- Further explanation on how the IOUs will achieve 40% less energy consumption than Title 24 code would be helpful, and how this will affect statewide requirements for renewable energy? How does this activity play a part of a long term trajectory?

Commercial: IOU Local Program Summaries

SCE Local Commercial Program: Financial Solutions

Summary

The Financial Solutions program is a non-resource program that provides additional options for financing energy efficiency projects. The program is designed to be offered in conjunction with other core SCE programs to stimulate and enable higher levels of customer participation. Program elements include:

1. Nonresidential On-bill financing (OBF)
2. Nonresidential third-party EE loan program
3. AB811 energy efficiency for cities and counties
4. Financial Services Working Group.

The Nonresidential OBF Program will offer zero-interest financing for installation of qualifying measures by commercial and governmental institutions customers. Small business loans have a minimum financed amount of $5,000 and a maximum financed amount of approximately $50,000; government institutions loans will be capped at approximately $250,000. Third Party financing is available above $25,000.

Non-Compliance Issues

No non-compliance issues identified.

Possible Modifications

The program appears to be well integrated with other offerings, offers very attractive terms as well as ease of access, and should be a major program asset. Financial Services elements assist coordination across many platforms, and offers management review.

- Evaluate and possibly propose a reduction in the minimum loan financed to small business from $5,000 to $2,500.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).

NA

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.

Goals of this program are well aligned with CEESP strategies specifically strategies *1-4, 1-5, and 2-6*.

"Program TRC"

This is a non-resource program.

Baseline, market transformation and quantitative program target information.

Information is not provided.

"Keystone" performance metrics for non-resource programs in particular.

- This program could be critical for small businesses, therefore a metric associated with how frequently direct install customers use this resource following qualifying audit recommendations would be valuable.
- Costs of loan servicing and defaults could also be tracked, so that true costs are understood.

Areas where more information would be desirable.

- OBF programs ought to appear nearly seamless to the customer to support customer action, and this program could convey that more care will be taken not to be confusing and offered by too many vendors.
- Process evaluation and/or market studies to determine how to improve participation rates could be conducted, especially in the small business community
- A similar program may be useful to support installation of high-efficiency replacement equipment upon failure, and could be offered through a large vendor network, e.g. HVAC equipment providers. This would be a very large scale program.

SDG&E's Local Commercial Programs "Preferred Scenario"

Summary

Two new and two "revised" local PIPs are proposed; one (Local04 – Sustainable Communities) is cross-cutting and involves both the residential and commercial sector. Most of the local programs appear to focus on opportunities and incentives for existing buildings, particularly Local03 – Local Non-Residential (BID) which refers to customized energy efficiency projects via audit or measure upgrades – conceptually an overlap with the scopes of proposed state-wide (SW) and new-construction (NC) programs.

Non-Compliance Issues

No non-compliance issues identified so far.

Possible Modifications

All four of the local PIPs target important opportunities and issues. Modifications could occur in a few places:

- Goals surrounding "comprehensive" audits and retrofits, and measure upgrades are costly. Given the current economic climate and access to funds, further justification would be helpful on how the allocated budget of $2.6 million will allow for effective participation in the "On-Bill Financing" program?
- Benchmarking, is necessary to achieving ZNE buildings, and could be mentioned in all PIPs (only presented in some).
- More information could be provided to explain the scope of benchmarking activities, particularly with respect to ZNE issues.
- Re: OBF – In order to reach deep energy retrofit goals as noted in the CEESP, all technologies and processes even those that are not in the rebate/incentive structure should be utilized. Clarity on whether the loan program only addresses opportunities that receive rebates and incentives would be helpful in the analysis of this program.
- The" Sustainable Communities" PIP focuses primarily on the residential sector, but indicates that it also addresses commercial buildings.

i. From the commercial perspective, it would be helpful to know what components of sustainability are actually addressed in these commercial buildings and to what extent?

- How the local programs contribute to the goal of making 50% of existing commercial buildings equivalent to zero net energy buildings by 2030? If the portfolio intends to be transformative, this information is useful.
- SDG&E's "Local Strategic Development and Integration" program is proposed to oversee strategic plan goals and activities.
    i. How will this happen exactly, as there are so many interacting PIPs that oversight with in each will be a challenge, let alone how each will interact with one another?
    ii. To address how the local subprograms interact, and are truly coordinated, a more detailed organizational chart could be useful.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).
N/A

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.

The SDGE Commercial Sector local PIPs conceptually address several of the CEESP strategies, but, for the most part, not at the SW level and not with any specific detail (especially in terms of how deep energy savings can be achieved in existing buildings). SDG&E summarizes the connections to the CEESP goals in each of the individual PIPs. The following areas could use more work:

Coordination and integration: SDG&E states that they plan to coordinate subprograms through BID, but it is unclear how this will occur.

ZNE: Although the various 3P PIPs address important energy saving opportunities, none discuss deep energy retrofits or indicate how 50% of existing commercial buildings will be made equivalent to zero net energy buildings by 2030. Given AB1103, it is surprising that benchmarking is not integrated in every local program.

"Program TRC"
TRC costs and benefits for the commercial sector program and subprograms are not provided by program.

Baseline, market transformation and quantitative program target information.
Baseline and market transformation targets remain missing. Metrics need to be developed to gauge program performance.

"Keystone" performance metrics for non-resource programs in particular.

- One "keystone metric" could be the number of customers who are developing their own benchmarks for their facilities.
- Another keystone metric could be the number of customers developing their own energy efficient strategic plan.

- A third keystone metric, related to market transformation, could be the number of customers that specify, purchase, install, and maintain energy efficient technologies based on its intrinsic value or "to keep up with the Jones" without the need for rebates or other incentives.
- How many buildings and audits will be targeted in these local programs?

Areas where more information would be desirable.

- An organizational chart chould be created to show subprogram interactions (including third party, SW, and NC ones). The chart should include the fraction of commercial portfolio savings and costs attributed to each subprogram.

- Some of the local subprograms (e.g., "On-Bill Financing") appear to be unnecessarily limited and potentially only target "low hanging fruit". More information could assess whether the savings described in the PIPs are based on incremental changes or instead account for interactive effects.

SDGE- Local Sustainable Communities Program (This is a mainly focused on the Residential sector with little mention of Commercial).

Summary

The Sustainable Communities program (SC) will be SDG&E's flagship program for reaching California's long-term energy efficiency goals, as it outlines a framework for integrated design and building of communities (both vertically: buildings and horizontally: land/utility and transportation infrastructure) through energy and resource efficiency.

"Non-Compliance Issues"

None

Modifications recommended to Commission

This program is targeted at the development of sustainable communities, but some elements of the program are unclear and seem to represent unrelated strategies. These components need to be modified to more directly apply to the community level goals of the program, or moved to a more applicable program. These components are described below:

- The first component of the program is training for builders and contractors on sustainable design and construction practices. This market entry point is downstream in the design process from the community planning activities identified in the program goals, and could be a component of a different program.
- The second component of the program is the development of 'learning center kiosks' in various sustainable communities to demonstrate to sustainable feature to residents. This component of the program could be more directly tied to successful upstream impacts on community design, as this effort will have no effect on initial design. It is unclear what criteria will be used to identify target communities for the kiosk installation, or how this strategy will impact community development.
- The third component of the program is design assistance to engineers and architects to foster the incorporation of sustainable features into projects.
    - Further description of program elements could be provided
    - How many projects will be involved in the program?
    - What specific outcomes will be supported by the money invested?

- The fourth component of the program is the development of modeling procedures so that residential builders can demonstrate energy performance improvement of their projects to document participation in the program.
    - Do modeling procedures capture current title 24 requirements?
    - How will modeling procedures impact community development? (This program component could possibly align better with utility programs other than sustainable communities).
- The fifth component of the project is the development of a comprehensive community modeling tool to track a wide range of sustainable community development impacts, and to share this information through case studies and other methods.
    - This component is very specific, and presents a significant opportunity to affect the overarching goals of the program. Other program elements could be designed to interact with this community impact model, and further development of the information sharing capabilities of this strategy should be considered. This community impact model component could form the basis of a highly effective program.
- Clear management structure could be provided.
- Coordination with SW programs and feedback loop would be helpful for analysis.

Overall, the targets of the program are community developers, but a number of the mechanisms of the program are oriented toward building-specific market players. While the goals of sustainable community development are critical to the Strategic Plan, this program as currently conceived could be revised into a more comprehensive, clear approach to the problems identified.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).
Budget and Savings data is missing within the PIP.

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.
The broader sustainability goals are in alignment with the Strategic Plan, however, the absence of any specific implementation targets or outcomes makes the degree of program alignment hard to assess.

"Program TRC"
This is a pilot program with no specific TRC goals listed in the program.

Baseline, market transformation and quantitative program target information.
No specifics are outlined except a chart that details participation targets for SBD, CAHP and ZNE Homes.

"Keystone" performance metrics for non-resource programs in particular.
- Even though SC is a non-resource program, specific goals toward program outcome could be identified such as:
    - Number of buildings
    - Specific energy savings
    - Sustainable design features, or other metrics that can be compared to anticipated program outlay.
- Reduced Vehicle Miles Traveled

- Water conservation metrics
- Waste reduction metrics
- Performance metrics for this program could include a specific number of new communities participating in the program, as well as specific performance goals for these individual projects within the community.

Areas where more information would be desirable.

- What is the anticipated outcome of the program, with respect to number of projects affected, and degree to which each project is affected by this program?
- How will the budget be allocated; who will receive the funding identified, and what will it pay for?

Commercial: Third Party Programs

SCE

SCE: Sustainable Portfolios

Summary

The Sustainable Portfolios program targets significant energy, water, waste and greenhouse gas (GHG) reductions in the difficult market of leased commercial office space. Focus is on floor space larger than 100,000 sq. ft. Major actors this program seeks commitment from include: real estate owners, investors, and tenants. The program will incorporate: audits, sustainable implementation plans with budgets/schedules, technical assistance, verification of performance, financial incentives from SW PIPs, other financing options to cover the remaining costs, and assistance in purchasing equipment to achieve sustainable practices. The program includes an array of standard measures, a desire to incorporate the "Go Green" marketing practice, incorporation of a Green Leasing kit, and some less common approaches to incorporate broader sustainability strategies. SCE has designed two other programs that address leased building space to diversification of program implementation and best practices (Leased Office Space Retrofit Program, and Management Affiliates Program).

Non-Compliance Issues

No non-compliance issues identified.

Possible Modifications

The Sustainable Portfolio program is vague and has established very ambitious goals that could be considered unreasonable without further explanation. Specifically, it is unclear how the program will accomplish the following:

- Meet LEED-EB certification for all properties
- Attain ENERGY STAR ratings of 90+
- Implement all energy and water measures with payback of 3.5 years or less after incentives

Leased properties have been difficult markets to treat, in part because of the classic split incentive barrier between owners and tenants. This barrier is noted in the implementation plan, but is not effectively addressed, and it seems challenging that both the tenant and owner will

work together to maximize environmental sustainability of the property, as the market structure and financial constraints all still exist. The program also anticipates chiller replacement, an extremely large capital cost project, and changing from constant volume double duct air handling systems, which are indeed very inefficient but also very uncommon air distribution systems. It is not clear how frequently these major measures would occur. Altogether, there seems to be a lot encompassed in this program without a clear directive on how to accomplish these ambitious goals.

The goals and uncertain technical strategy, could suggest a questionable success rate for this program and it might be suggested that SCE not implement this program unless the following recommendations are adopted:

- This program is noted as a pilot effort
- Clear Progress indicators are included to track program objectives.
- Requiring a more detailed program implementation plan that addresses the concerns noted, or a monthly report to IOU or CPUC (?).

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).
NA

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.
This program includes strategies *2-5, 2-6* and *2-7* from Goal 2 of the SP for retrofitting 50% of existing buildings by 2030. However, even with recognition of the above strategies, the plan to execute these goals could benefit from further explanation.

"Program TRC"
The program TRC that SCE has documented is 3.8. These savings seem very high and could be overestimated, as it is very unclear how this program will utilize program funds to utilize incentives for measures and sustainability action.

Baseline, market transformation and quantitative program target information.
Information is not provided beyond savings goals.

"Keystone" performance metrics for non-resource programs in particular.

- Track performance numbers of this program's ability to get whole building participation, i.e. tenants and owners, to support deep energy investment.
- Demonstration of how standard construction can be raised to an Energy Star 90 score.

Areas where more information would be desirable.

1. How can this project be managed, in conjunction with other related third party programs, to determine what strategies are attractive to the market and what strategies need to be rethought?
2. Market research could be done to indicate which key program goals are shared by the market.

SCE: Monitored-Based Commissioning (MBCx) and Monitored-Based Persistence Commissioning (MBPCx)

Summary
SCE has proposed two 3rd Party programs to provide Monitored-Based Commissioning (MBCx) and Monitored-Based Persistence Commissioning. Both programs utilize retro commissioning and continuous commissioning through technology-based monitoring to examine and improve the operational efficiency of buildings. MBCx and MBPCx ensure performance of controls, major mechanical system components, HVAC and lighting equipment (detailed in the "Persistence" Commissioning project) by remote monitoring of performance. Data loggers which are installed to track building operations will also be used to create benchmarks for optimal building operations. Both programs are similar and will be managed by the statewide programs Continuous Energy Improvement (CEI) and Non-Residential Audits. SCE will gain learning from two distinct delivery teams while also ensuring technological diversity.

Non-Compliance Issues
No non-compliance issues identified.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).
The MBCx and MBPCx programs are providing field experience on best practice enhanced building operations efforts. The projects provide an opportunity to test two related but distinct approaches to the detection and resolution of operational issues. Projects build on past experience, and finding will be integrated into other program offerings. Detailed benchmarking of operational elements and training for facility managers are part of the programs. Program will be reviewed for possible inclusion in statewide offering, such as the Continuous Energy Improvement Sub-Program.

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.
MBCx and MBPCx use best practice operations and management protocols to advance the CEESP strategies, in particular the IDSM theme through commissioning – an essential part of achieving Zero-net energy buildings. In the short term, this program aims to strengthen tools and practices for commercial building commissioning and testing commissioning programs on selected high use buildings in the local sector. Overall, the program addresses Goal 2 for retrofitting 50% of existing buildings by 2030. Specifically it identifies strategy *2-5.*

"Program TRC"
The program TRC for MBCx is 1.43 and MBPCx is1.59. SCE is the only IOU that provides TRC on the 3rd Party level.

Baseline, market transformation and quantitative program target information.
Information is not provided beyond savings goals.

"Keystone" performance metrics for non-resource programs in particular.
- Monitoring impact of reduced energy use on building – set up Energy Use Index (EUI) before and after RCx
- Improvement to savings over time based on improvement of detailed operational benchmarks.

Areas where more information would be desirable
NA

SCE: Automatic Energy Review of Schools

Summary

The Automatic Energy Review for Schools (AERS) program works with the Department of State Architects (DSA) to increase energy performance of new and modernized school buildings for public schools. The program will work with DSA staff to flag and refer projects that just marginally exceed the state energy code. The projects will be referred to the automatic plan review technical assistance team of the consultant to review the project and coordinate with DSA to help identify potential energy-saving design modification opportunities.[18]

Non-Compliance Issues

No non-compliance issues identified.

Possible Modifications

The AERS program attempts to catch energy faults in school design through a late-stage intervention- when design is solid and efficiency opportunities are limited. This program seems to advise that a school with energy problems will have navigated through the Savings by Design and Collaborative for High Performance Schools without benefiting from either effort.

Schools are a well organized market and are usually built by expanding suburban districts or cities, and/or urban areas replacing older schools. These plans are designed by architecture firms that specialize in schools.

While there may be a need for this program today, there may not be a reason for this program in the future. Any opportunities caught by this program would suggest that another effort has failed. A last minute corrective program is not ideal for addressing energy savings, and should be revaluated.

SCE could modify this program to include rigorous EM&V to track progress and problems solved by this program, and correct them either earlier in the design process where they can be more cost-effectively addressed.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).

NA

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.

AERS does not address many of the CEESP goals, unless it is a tool for informing other strategies. The two strategies outlined in the PIP by sub sector include *1-6* from the Commercial Sector, and *1-5* from the Codes & Standards program. AERS identifies that financial incentives will help reduce and potentially avoid the incremental cost of design assistance, and should offer guidance on how to use these innovative mechanisms in the program.

"Program TRC"

The program TRC for this program is 1.07

[18] SCE PIP. (2009). Non-Residential 3rd Party Programs: Crosscutting: Automatic Energy Review for Schools. page 338.

Baseline, market transformation and quantitative program target information.
Information is not provided beyond savings goals.

"Keystone" performance metrics for non-resource programs in particular.

- # of programs that chose the AERS program as suitable instead of CHPS and SBD.

Areas where more information would be desirable.

- How can this project be managed, in conjunction with other school related programs?
- How can this project modify program strategies to avoid lost-opportunities earlier in the design process?

SCE & PG&E Energy Efficiency for Entertainment Centers, Private Schools and Colleges Program, and California Preschools Program

Summary
As noted in the SW Commercial PIP, the following three sub-programs could be incorporated into the 3rd Party PIP (Entertainment Centers, Private Schools and Colleges, and California Preschools). These programs were presented as SW program by PG&E and SCE, but were not included in the same manner by SDG&E and SCG. These programs are directed towards specific target markets with marketing, technical and business engagement strategies specific to the target. The Entertainment Center market includes a relatively diverse market of movie theaters, bowling alleys, amusement parks, fitness/recreation centers and night clubs; the target markets for the other two sub-programs are representative of the program name. Services include audits, low-cost measures, and incentives for more capital intensive measures.

Non-Compliance Issues
Budget and savings data are missing from these program templates.

Possible Modifications
These three programs have clear target markets, a good combination of measures, and a focused business engagement strategy. No recognized benchmarks exist for these building types except for k-12 private schools; benchmarking could be added to the list of services for k-12 schools, but is not needed in the other programs

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).
NA

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.
All three programs target specific business sectors, and reasonably support the CEESP. Relationships to larger strategic goals are noted, but the primary emphasis is on serving a distinct target market.

"Program TRC"

The Preschool Sub-Program has notably reduced savings per dollar invested, which could be attributable to reduced hours of operation. Program TRC is not provided for these programs as they are linked in with the SW programs that are evaluated as a whole.

Baseline, market transformation and quantitative program target information.
Information is not provided beyond savings goals.

"Keystone" performance metrics for non-resource programs in particular.
The three sub-programs are all resource programs. Reasonable non-resource metrics might include percentage of target market reached by program marketing, linkages to relevant associations, referrals into state-wide Core Programs for additional services and percentage of audit recommendations that result in follow-up activities.

Areas where more information would be desirable.
None

SCE: Crosscutting Program: Sustainable Communities

Summary
The Sustainable Communities (SC) program is a third party program created to advance sustainable energy efficient building design and technical assistance in non-traditional projects as well as traditional projects whose scope falls includes or falls outside the typical campus project, mixed-use complex, residential new construction, multi-family, and transit-oriented development. This program also ties to influence measures relating to water conservation and transportation demand. The total program budget is $14,254,000.

Non-Compliance Issues
There are no non-compliance issues identified.

Possible Modifications
The SC program is grounded in good conceptual ideas, but more specificity is needed. The project-based implementation strategies listed do not fully relate to the stated community-based goals of the program and it is unclear how the $14 million will be spent in this project. The program describes leveraging the New Construction PIP to help implement some of this program as well as referencing use of incentive funds but no clear targets are provided. A better plan to support this concept would be useful, including information on:

- How will the budget be allocated; who will receive the funding identified, and what will it pay for?
    - Specific outcomes that will be supported by the budget
- Clear description of program elements
- Targets for number of projects anticipated through this program
- Creating a management structure that will help achieve the innovative goals and coordination is essential for a sustainability program to be successful.
- Ensuring a feedback loop is being incorporated from the pilot program to the utility programs so that ongoing implementation challenges are addressed and improved *(This is essential, especially with all the referencing in this PIP with other existing programs).*

- New strategies that address community issues should be developed to meet the goals listed for the program.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).

NA

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.

The broader sustainability goals are in alignment with the Strategic Plan, however, the absence of any specific implementation targets or outcomes makes the degree of program alignment unclear.

"Program TRC")

This is a pilot program with no specific TRC goals listed in the program.

Baseline, market transformation and quantitative program target information.

No specific outcomes were identified, other than targets surrounding 'participation' of projects'. Target categories surrounding participation include: documents for best practices, expanded portfolio of new project types, increase overall program enrollment, and projects that meet ZNE goals. It is hard to understand how quantitative targets could be identified, as the implementation strategies do not align with the stated goals of this program – recommendation for key performance metrics below.

"Keystone" performance metrics for non-resource programs.

- Even though SC is a non-resource program, specific goals toward program outcome could be identified such as:
  - Number of buildings
  - Specific energy savings
  - Sustainable design features, or other metrics that can be compared to anticipated program outlay.
- The program is designed to support existing sustainable design programs (like LEED and others). IOU should provide a reasonable target for new LEED projects – (100 is recommended by PUC consultant)

Areas where more information would be desirable.

- How will campus, master-planning, and other 'non-traditional' projects be identified, targeted, and affected, especially since the only implementation method suggested is based on interaction with design teams?
  1. Who may not be present at the critical phases of planning projects of this nature?
- How will the outcome of this pilot program be managed to inform other aspects of the broader approach to energy efficiency under the Strategic Plan?
- The program seems to be a subsidy for the market operations of an un-named sustainable design consultant(s). Subsidized competition with an established market should be considered carefully as supporting a single entity can cripple the market.

Pacific Gas & Electric

PG&E: Retro-Commissioning, Monitoring-Based Commissioning and Monitoring-Based Persistence Commissioning

Summary

PG&E has proposed two 3rd Party programs (similar to SCE) to provide Monitored-Based Commissioning (MBCx), Monitored-Based Persistence Commissioning (MBPCx) and Retro-Commissioning (RCx). Both programs utilize retro commissioning and continuous commissioning through technology-based monitoring to examine and improve the operational efficiency of buildings. MBCx and MBPCx ensure performance of controls, major mechanical system components, HVAC and lighting equipment (detailed in the "Persistence" Commissioning project) by remote monitoring of performance. The program targets 7.5 million square feet of commercial facilities and features a building automation system (BAS) to reach at least 10 percent energy savings from low-medium cost measures. PG&E is operating similar programs to ensure technological diversity and learning from three distinct delivery teams, *PECI* (RCx), *EnerNOC and QuEST* (MBCx), and *Enovity* (MBPCx).

In addition to these three programs there are three other PG&E PIPS that include Retro-commissioning by these same teams, focused on specific markets, e.g., medical buildings, lodging, and department stores (PIP numbers 2183, 2190, and 2191).

Non-Compliance Issues

No non-compliance issues identified.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).

The RCx, MBCx and MBPCx programs are providing field experience on best practice enhanced building operations efforts. The projects provide an opportunity to test two related but distinct approaches to the detection and resolution of operational issues. Projects build on past experience, and finding will be integrated into other program offerings. Detailed benchmarking of operational elements and training for facility managers are part of the programs. Program will be reviewed for possible inclusion in statewide offering, such as the Continuous Energy Improvement Sub-Program.

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.

RCx, MBCx, and MBPCx use best practice operations and management protocols to advance the CEESP strategies, in particular the IDSM theme through commissioning – an essential part of achieving Zero-net energy buildings. These PG&E 3rd party programs do not specifically detail the CEESP strategies they are addressing, but it is apparent that the goals of the programs are well aligned with Goal 2 for retrofitting 50% of existing buildings by 2030.

"Program TRC"

The only program TRC presented for evaluation is located in the Thermal Savings Budget table for SCE. Moving forward with these two programs, automated data loggers should enable detailed evaluation of impacts.

Baseline, market transformation and quantitative program target information.

Information is not provided beyond savings goals.

"Keystone" performance metrics for non-resource programs.

- Monitoring impact of reduced energy use on building – set up Energy Use Index (EUI) before and after RCx
- Improvement to savings over time based on improvement of detailed operational benchmarks.

Areas where more information would be desirable.

*The program savings and costs reported in the individual PIP summaries in Appendix B do not match the savings and costs reported in the summary tables, e.g., Budget Table 5a.

SDG&E

SDG&E's Third-Party Commercial Energy Efficiency

Summary

Four new and eight "revised" third-party (3P) PIPs are proposed; one (3P-Xc02: *20% Cooler*) is cross-cutting and addresses both residential and commercial. For the most part, the SDG&E third parties address very niche markets that focus on capturing opportunities through data collection, audits, technical assistance and incentive measures relating to efficient management of existing buildings. Conceptually, there maybe an overlap with the scopes of proposed state-wide (SW) programs.

Non-Compliance Issues

No non-compliance issues identified except the failure to present budget and savings data in the PIP tables.

Possible Modifications

All 12 of the 3P PIPs target niche markets and represent a wide range of important opportunities. Modifications could occur in a few places:

- Healthcare is one of the states' heaviest energy use sectors, which creates a large opportunity for energy savings.
  - How will the allocated budget of $0.24M allow for the aggressive program goals surrounding "comprehensive" audits and retrofits, and measure upgrades? (Budget seems very low).
- A stakeholder steering committee meeting could be formed to allow flexibility of the planning process, as well as to oversee programs and discuss adjustments that might arise with rapidly changing economic conditions.
- Explanation of how 3P subprograms interact and will be coordinated with each other and the rest of the portfolio is needed (e.g. It is unclear why separate 3P subprograms are needed for various building sectors when the stated intent of the SW existing building and NC programs is to address these sectors).

- An explanation of how the subprograms contribute to the goal of making 50% of existing commercial buildings equivalent to zero net energy buildings by 2030 is needed. If the portfolio intends to be transformative, this information is useful.
- Benchmarking, this is a necessary to achieving ZNE buildings, and should be mentioned in all PIPs (only presented in some).
- More information is needed to explain the scope of benchmarking activities, particularly with respect to ZNE issues.

Summary of level at which, by program, IOUs met requirements for SW programs (see Oct. 30th Ruling for details).
N/A, other than the need for better coordination with other SW Core programs as identified in #2 above.

Summary of level at which, by sector, CEESP strategies are advanced, including inclusion of specific strategies, objectives and milestones within the 09-11 period.
The SDGE Commercial Sector 3P PIPs conceptually address several of the CEESP strategies, but, for the most part, not at the SW level and not with any specific detail (especially in terms of how deep energy savings can be achieved in existing buildings). SDG&E summarizes the connections to the CEESP goals in each of the individual PIPs with the following areas could use more work:

Coordination and integration: SDG&E should further describe their plans to coordinate subprograms to better align individual customer segment needs where relevant information and energy management "packaged" solutions for each segment is presented.

ZNE: Although the various 3P PIPs address important energy saving opportunities, they could discuss deep energy retrofits in more detail and should indicate how 2009-11 programs will contribute progress toward the goal that 50% of existing commercial buildings will be made equivalent to zero net energy buildings by 2030.

"Program TRC"
Breakdown of program TRC is not provided.

Baseline, market transformation and quantitative program target information.
Baseline and market transformation targets remain missing. Metrics need to be developed to gauge program success or failure. Quantitative program targets were defined for most of the SDG&E 3rd Party programs.

"Keystone" performance metrics for non-resource programs.
- One "keystone metric" would be the number of customers who are developing their own benchmarks for their facilities.
- Another keystone metric would be the number of customers developing their own energy efficient strategic plan.

Areas where more information would be desirable.
- An organizational chart could be created to show interactions between all subprograms (including the SW and NC ones).

- Some of the 3P subprograms appear to be targeting “low hanging fruit”. It could be constantly noted that more savings can be achieved through an integrated, planned approach that accounts for interactive effects between building system components. SDG&E indicates this issue as a “lost opportunity”, but more information is needed to assess whether the savings described in the PIPs are based on incremental changes or instead account for interactive effects.
- Preferably, before new contracts are signed, a plan could be provided for phasing out overlapping 3P subprograms and for incorporating any elements not covered by the SW and NC programs therein. The 3P providers can still provide that capability, but in the future it would be an integrated part of SW and NC programs, with clearly defined interactions and the ability to dynamically adjust to needs.

Industrial: Program Summary with Findings

Sub-Program	State-wide Industrial Description
Non-residential audits	**Basic:** Typically *remote* audits providing participants with recommendations in a report with estimated project costs and savings and a roadmap for project implementation. **Integrated:** *On-site* audit including energy efficiency, demand response, and distributed generation measures with implementation costs, energy benefits, available incentives, and payback calculations. **RCx:** Assessments to identify opportunities to optimize existing building or system performance through correcting operational deficiencies and recommending corrective measures.
Deemed / Express Efficiency	Rebates for the installation of specific energy efficient measures providing pre-defined incentives with prescribed energy savings.
Calculated	Provides technical assistance and incentives based on calculated savings for retrofit and added load applications. The incentive rate is 15 ¢/kWh for AC and refrigeration loads and 9 ¢/kWh for all other end-uses and measures. The incentive for gas savings is $1 per therm.
Continuous Energy Improvement	A collection of strategic planning tools and resources that lay the groundwork for long-term integrated energy planning and provide a platform for launching other utility and non-utility programs and services. CEI is a non-resource sub-program.

PG&E

IOU	PIP #	Program Name	Budget ($million)	Energy Savings	ED Finding
PG&E	PGE2102	**Statewide Industrial Program**	**$110.0** **TRC= 3.1**	**365,681 MWh** **45.0 MW** **48.1 MTh**	
		Non-residential Audits	$2.1	Non-resource	
		Calculated	$95.9	323,507 MWh 37.9 MW 33.2 MTh	Measure specifications can be improved as some E3 parameters are missing or seem unreasonable. Request workpapers to justify E3 parameters and calculation methodologies to determine incentives and energy savings.
		Deemed	$11.5	42,174 MWh 7.1 MW 14.8 MTh	Measure specifications can be improved as some E3 parameters are missing or seem unreasonable
		Continuous Energy Improvement	$0.569	Non-resource	A workshop to determine a more aggressive strategy would be helful.

Summary Findings: PG&E

- Industrial program TRC is high, symptom of E3 calculator measure inputs, some parameters are missing and some parameters are aggressive (Ex. Gross measure costs are missing, high load factors for some measures, and missing data and issues with new, replace-on-burnout, and retrofit/early retirement).
- 0.52% of SW budget is allocated to Continuous Energy Improvement sub-program. Low budget allocation for a strategic goal of the CEESP/Big Bold Initiatives. Also, no consideration of international best practices as there are several examples of CEI implementation in North America and Europe.
- No baseline data provided, IOU summary results of last funding cycle as an indicator for this cycle would be helpful. IOU's can provide billing history baselines, work papers, and US DOE Manufacturing Energy Consumption Survey.
- Integration and coordination initiatives across DSM sub-programs, EE, DR, & DG, and other resources (water, emissions, etc) are numerated but no details provided on how it will be accomplished with timelines, budgets, resource allocations, milestones, and deliverables.
- Integration of 3rd Party programs and statewide sub-programs is unclear and lacks narrative in the PIPs.
- PIP provides for the establishment of two industrial committees: SW Industrial Coordination Committee and an IOU CARB AB32 Committee. Excellent ideas

and the establishment and approval of the terms of reference for these committees are recommended as part of this funding cycle approval. It is also recommended to establish a committee to investigate baselines and market transformation for the industrial sector.

- Incentive levels seem to be coordinated across the IOUs however E3 measure specifications vary.

SCE

IOU	PIP #	Program Name	Budget ($million)	Energy Savings	ED Finding
SCE	SCE-SW-003	**Statewide Industrial Program**	**$101.1** **TRC= 1.31**	**584,492 MWh** **97.5 MW** **Therms N/A**	
		Non-residential Audits	$3.2	68,060 MWh 11.8 MW Therms N/A	
		Calculated	$84.8	468,090 MWh 75.1 MW Therms N/A	IOU workpapers in developing the E3 measure specification inputs would be helpful.
		Deemed	$13.0	48,341 MWh 10.6 MW Therms N/A	
		Continuous Energy Improvement	$0.121	Non-resource	A workshop to determine a more aggressive strategy would be helpful.

Summary Findings

- Good E3 measure specifications provided in "A.08-07 021+Energy+Efficiency+Exhibit+(SCE-9+Tab+6-+Composite+Measure+Grouping+Breakdown)(1)." Measures are separated as NEW, Replace-on-Burnout, and Retrofit however E3 input parameters such as EUL appear to be the same for new, ROB, and retrofit.
- TRC is on the low side, most conservative electrical load factor of all IOU's indicating conservative E3 inputs.
- Continuous Energy Improvement sub-program is budgeted for $121,000 or just over $40,000 per year representing only 0.12% of the overall statewide budget for SCE. Extremely low budget allocation for a strategic goal of the CEESP.

Same findings as PG&E

- No baseline data provided, IOU summary results of last funding cycle as an indicator for this cycle would be helpful. IOU's can provide billing history baselines, work papers, and US DOE Manufacturing Energy Consumption Survey.
- Integration and coordination initiatives across DSM sub-programs, EE, DR, & DG, and other resources (water, emissions, etc) are numerated but no details provided on how it will be accomplished with timelines, budgets, resource allocations, milestones, and deliverables.
- PIP provides for the establishment of two industrial committees: SW Industrial Coordination Committee and an IOU CARB AB32 Committee. Excellent ideas and the establishment and approval of the terms of reference for these committees are recommended as part of this funding cycle approval. It is also recommended to establish a committee to investigate baselines and market transformation for the industrial sector.

- Incentive levels seem to be coordinated across the IOUs however E3 measure specifications vary.

SDGE

IOU	PIP #	Program Name	Budget ($million)	Energy Savings	ED Finding
SDGE	SW-Ind	**Statewide Industrial Program**	**$11.7** **TRC= 1.39**	**25,404 MWh** **3.2 MW** **3.3 MTh**	
	SW-IndC	Non-residential Audits	$0.808	N/A	
	SW-IndA	Calculated	$5.8	6,194 MWh 0.5 MW 3.0 MTh	Incomplete E3 measures as PIP includes a long list of measures whereas E3 models only one measure
	SW-IndB	Deemed	$4.4	19,210 MWh 2.7 MW 0.31 MTh	Incomplete E3 measures as PIP includes a long list of measures whereas E3 models only one measure
	SW-IndD	Continuous Energy Improvement	$0.601	N/A	A workshop to determine a more aggressive strategy would be helful.

Summary Findings: SDGE

- Inconsistencies in filed documents: Industrial budgets are different between PIP and Appendix F & F.1. Above assumes the PIP filed on March 31, 2009 are the correct and final budgets.
- E3 inputs can be clarified as Calculated sub-program produces a load factor of 137% and Deemed is on the high side too (81%) for a perscriptive program (significantly higher than PG&E and SCE).
- Only industrial measure within the "IOU Core" E3 model is "415003-Steam Traps - Bid or SPC Strategy." IOU clarification or additional information would be helpful.
-

Same findings as PG&E

- No baseline data provided, IOU summary results of last funding cycle as an indicator for this cycle would be helpful. IOU's can provide billing history baselines, work papers, and US DOE Manufacturing Energy Consumption Survey.
- Integration and coordination initiatives across DSM sub-programs, EE, DR, & DG, and other resources (water, emissions, etc) are numerated but no details provided on how it will be accomplished with timelines, budgets, resource allocations, milestones, and deliverables.
- Integration of 3rd Party programs and statewide sub-programs is unclear and lacks narrative in the PIPs.
- PIP provides for the establishment of two industrial committees: SW Industrial Coordination Committee and an IOU CARB AB32 Committee. Excellent ideas and the establishment and approval of the terms of reference for these committees are recommended as part of this funding cycle approval. It is also

recommended to establish a committee to investigate baselines and market transformation for the industrial sector.

- Incentive levels seem to be coordinated across the IOUs however E3 measure specifications vary.

SoCal Gas

IOU	PIP #	Program Name	Budget ($million)	Energy Savings	ED Finding
SoCalGas	SW-Ind	**Statewide Industrial Program**	**$55.7** **TRC= 1.94**	**40.0 MTh**	
	SW-IndC	Non-residential Audits	$1.28	N/A	
	SW-IndA	Calculated	$46.5	33.4 MTh	Incomplete E3 measures as PIP includes a long list of measures whereas E3 models only one measure
	SW-IndB	Deemed	$6.4	6.6 MTh	Incomplete E3 measures as PIP includes a long list of measures whereas E3 models only one measure
	SW-IndD	Continuous Energy Improvement	$1.53	N/A	A workshop to determine a more aggressive strategy would be helful.

Summary Findings: SoCal Gas

- Inconsistencies in filed documents: Industrial budgets are different between PIP and Appendix F & F.1. Above assumes the PIP filed on March 31, 2009 are the correct and final budgets.
- E3 inputs can be clarified and reconciled between the measure list provided in the PIP versus the E3 model
- CEI budget is more reasonable with 2.74% of the SW industrial budget allocated to CEI. The program targets include the attainment of 25 "commitments" towards CEI implementation within this funding cycle.

Same findings as PG&E

- No baseline data provided, IOU summary results of last funding cycle as an indicator for this cycle would be helpful. IOU's can provide billing history baselines, work papers, and US DOE Manufacturing Energy Consumption Survey.
- Integration and coordination initiatives across DSM sub-programs, EE, DR, & DG, and other resources (water, emissions, etc) are numerated but no details provided on how it will be accomplished with timelines, budgets, resource allocations, milestones, and deliverables.
- Integration of 3rd Party programs and statewide sub-programs is unclear and lacks narrative in the PIPs.
- PIP provides for the establishment of two industrial committees: SW Industrial Coordination Committee and a IOU CARB AB32 Committee. Excellent ideas and the establishment and approval of the terms of reference for these committees are recommended as part of this funding cycle approval. It is also

recommended to establish a committee to investigate baselines and market transformation for the industrial sector.

- Incentive levels seem to be coordinated across the IOUs however E3 measure specifications vary.

HVAC: Statewide Program

The ultimate objective for HVAC is to reduce electrical peak demand caused primarily by air conditioning load and to reduce gas heating demand efficiently.

The statewide HVAC SP program addresses industry market failure. Through the programs described below, the IOUs have defined the major problems, retooled solutions, and have established a strong foundation of resource and non-resource programs to meet the many issues comprising the market failure. Strategies, tactics, and incentives are specifically targeted to all levels of the HVAC value chain (i.e. manufacturers, distributors, contractors and customers) through the programs below. Parts of the HVAC plans link to Codes and Standards for compliance and to Emerging Technologies for continuous improvements.

The keystone to the HVAC Plan is the HVAC Industry Task Force (task force), which will provide guidance to California and the western U.S., and will coordinate and prioritize the many issues required to "transform" the industry under a cohesive framework. The task force will be facilitated by the Western Cooling Efficiency Center (WCEC).

SW HVAC Budgets and Savings

Program	PG&E	SCE	SDGE	SCG	Totals
1. Upstream Incentives-R	19,204,669	14,022,000	1,434,491	66,961	34,728,121
2. Comm. QI-R	7,947,714	2,886,000	107,306	107,306	11,048,326
3. Res QI-R	14,760,040	2,956,000	114,526	114,526	17,945,092
4. Tech & Diagnostics-NR	28,329,210	11,556,000	901,499	901,499	41,688,208
5. Res-Comm QM-R in 2010	29,273,388	34,510,000	204,452	914,252	64,902,092
6. HVAC WE&T - NR	2,033,101	10,483,000	137,381	137,181	12,790,663
HVAC Core-Umbrella PIP				78,862	78,862
Totals	**101,548,122**	**76,413,000**	**2,899,655**	**2,320,587**	**183,181,364**

R = Resource Program
NR= Non Resource Program

Gross Savings Portfolio 2009-2011	PG&E	SCE	SDGE	SCG	Totals
kWh	69,120,627	124,443,900	7,840,392	0	201,404,919
KW	47,224	91,954	2,962	0	142,140
Therms	1,893,509		0	0	1,893,509

One of the features setting HVAC apart from the other SW Plans and PIPs is that it requires national, industry-wide involvement to succeed in addition to IOU and statewide involvement, making market transformation seemingly out of reach. The IOUs have produced a plan, which is ambitious and coherent, and which also adheres to all the vetting from the Big and Bold workshops, the CEC Strategic Plan, and the CEESP.

The SW HVAC Plan

The HVAC SW plan has an umbrella PIP named "Residential and Commercial HVAC Program", with 6 sub-programs. The sub-programs are:

1. EnergyStar Quality Installation (QI)
2. Commercial Quality Installation (QI)
3. Upstream HVAC Equipment Incentive
4. Residential and Commercial Quality Maintenance (QM)
5. Technologies and Systems Diagnostics Advocacy
6. HVAC Workforce Education and Training

The Strategic Plan for HVAC covers code compliance, QI/QM, Workforce Education & Training, Technologies and Systems Diagnostics, and some Whole House and Branding. Since HVAC is cross-cutting to some of the other SW plans, we have not incorporated all of the HVAC SP under the HVAC SW PIP.

The IOUs point to Codes and Standards for the compliance issues, with the appropriate compliance features needed under the HVAC PIPs, such as tracking the HVAC equipment through distributors and not allowing a rebate without the proper paperwork. Whole house and branding is addressed similarly. However, the IOUs do incorporate the HVAC WE&T under HVAC due to its specificity, and then point to WE&T to assure coordination. The biggest sub-program of all is the technology PIP. The strength of this was that this was linked to an industry-wide task force housed under the Western Cooling Energy Center (PIER-funded, in Davis).

The IOUs expanded the HVAC to include higher tonnage units (excluding customized installations) and to deal with heating issues. This latter element incorporates gas technological issues.

Industry Roundtable – May 12-13, 2009

The IOUs held a roundtable on May 12-13 at the SF Marriott. This was an outreach effort on behalf of the SW HVAC efforts to align strategies and goals for education and technical issues. Invitees include: industry organizations and unions, national and California HVAC educators, manufacturers, distributors, and some commercial end-users (i.e., BofA).

The purpose of the roundtable was two-fold – Engage the industry into the California perspective on HVAC and energy efficiency, and help the IOUs determine how to structure a task force to channel the collective efforts. The "industry" groups have not been engaged in the strategic plan, or if they have been, it has been to provide individual suggestions into the development of the HVAC plan in order to provide a strong foundation going forward. This includes addressing education efforts, and the longer term objective of compliance - getting contractors to do the right thing with HVAC. This is no simple task.

Heretofore, HVAC has been guided only by standards (national and statewide) and utility incentives. Some major gaps addressed the CEESP and the IOUs proposed programs include:

- The need for consistent and improved training, updating curricula, and a structured way to get there;

- Previous California discussions (roundtables) identified "what's wrong", without a follow-up to coordinate efforts to solve identified problems; and
- Industry elements lacking cohesive and representative input into the California perspective.

HVAC Statewide Residential and Commercial Core Program

1. Upstream HVAC Equipment Incentive

This program offers incentives to distributors who sell qualifying high efficiency HVAC equipment, leveraging existing market structure and relationships. An online incentive application is provided to facilitate distributor sales and invoice tracking. The logic of this program design is that a small number of distributors and manufacturers are in a position to impact thousands of customers and influence their choice of equipment.

2. Commercial Quality Installation (QI)

Applicable to installations of packaged HVAC systems with a rated capacity of up to 760,000 BTU/H

A financial incentive will be available to contractors who complete a system installation in accordance with the appropriate industry standards (e.g. ACCA, SMACNA and ASHRAE). Qualifying contractors (same as above) will be actively recruited into the program by offering certain non-incentive services providing a number of benefits, such as co-branded customer marketing materials, diagnostic equipment, etc.

3. ENEGRY STAR Residential Quality Installation (QI)

Applicable to installations of central air systems and air-source heat pump systems with a rated capacity up to 65,000 BTU/H.

A financial incentive will be available to homeowners who have a system installed in accordance with the EPA HVAC Quality Installation Guidelines. Homeowners will also receive an ENEGRY STAR certificate for their qualifying installation. Qualified contractors (those who maintain a technician workforce minimum of 70% currently certified under NATE, ICE or other recognized certifications) will implement the program. Contractor training on quality installation practices will be available. Other benefits will be provided to participating contractors.

4. Technologies and System Diagnostics Advocacy

Implemented by the WCEC, this program is designed to:

- Provide higher levels of HVAC energy/demand efficiency in equipment design, installation, operation & maintenance
- Improve quality assurance throughout the HVAC supply chain
- Provide up-to-date workforce education and training content
- Support improved compliance with current and future codes and standards

5. Residential and Commercial Quality Maintenance Development (QM)

This is a non-resource program based on the assumption that there are energy and demand savings achievable through the regular application of quality maintenance. The program will attempt to quantify the potential savings, and develop, through a full industry vetting, a QM program focused on comprehensive and continuously improving O&M activities to provide customers with a high ROI. Two broad QM programs for residential and commercial customers should be launched in 2010.

6. HVAC Workforce Education and Training

This program will deliver a dedicated, industry-specific effort that offers education and training opportunities targeted at all levels of the HVAC value chain. Prior to initiating the program, a comprehensive needs-assessment will be made to determine industry skill gaps, identify opportunities for collaboration with existing HVAC education and training infrastructure, and implement recommendations needed to close gaps. The HVAC WE&T effort will seek to influence quality-inclined contractors, installers and technicians to deliver premium services to their customers. This is a non-resource program that does not offer direct customer incentives.

Lighting: Summary of Components of IOUs 2009-11 EE Application

I. Lighting Market Transformation Program

A) Budget Summary

IOU/program number	Name	Total Admin cost	Total M& O	Total direct implementation	Total Budget
PG&E 2105	Lighting Market Transformation	$308,473	$0	$150,000	$458,473
SCE	"	$1,054,000	$ 0	$ 0	$1,054,000
SDG&E	"	$0	$ 0	$ 0	$ 0
All IOUs	**LMT**	**$1,362,473**	**$ 0**	**$ 0**	**$1,512,473**

PG&E's PIP states that this table of annual costs does not capture the integration budgets of other programs that this program will intend to leverage, including ETP, C&S. The anticipated total amount including this budget and the integrated EE programs is expected to be about $1 million/year, absent incentives. The program will additionally leverage incentive dollars for LMT programs, drawing from a pool of total incentive dollars for all lighting-related programs of over $90 million.

B) Program summary

This program includes three Sub-Programs:

1. The Lighting Technology Advancement Sub-Program formalizes a process by which the IOUs can rapidly introduce advanced lighting solutions and emerging technologies to the marketplace, continually improve their current lighting programs across all market sectors, and develop and test innovative new program strategies to advance market transformation in the lighting sector;
2. The Lighting Education and Information Sub-Program addresses the pressing need for more accessible information on lighting technologies across all market sectors and among IOU staff and installation contractors; and
3. The Lighting Market Transformation Sub-Program enables the IOUs to identify gaps in LMT strategies for different technologies and create data-driven solutions. These solutions will inform and leverage energy-efficiency program efforts to fill the gaps in market transformation strategies for each lighting technology.

Alignment with CEESP:

This program has the potential to advance CEESP goals, but the way in which it will do this is not yet fully described. Specific deliverables and milestones were not provided.

Further details on Sub-program elements:

B.1) Technology Advancement Sub-program

The goal of this initiative is to formalize a process by which the IOUs can rapidly introduce advanced lighting solutions and emerging technologies to the marketplace, continually improve the IOUs' current lighting programs across all market sectors, and develop and test innovative new program strategies to continually advance the lighting market. This process involves the following activities:

1. Coordinate with, and leverage the activities of, relevant federal, state, and local organizations including CEC/PIER, CLTC, DOE, LBNL, public institutions, lighting manufacturers, and end-user groups. The CLTC is annexed for SCE through the SCLTC.

2. Ensure that rigorous quality standards exist for each technology and that each model incorporated into IOU programs meets these standards (to be achieved primarily through leveraging the Lighting Market Transformation initiative).

3. Identify adequate market availability and pipelines for each technology before its transition into energy efficiency programs (resource-based or other).

4. Create "phase-in" market transformation plans with new program strategies and programs to incorporate each technology into resource-based energy-efficiency programs (with the long-term net-zero goal in mind).

5. Develop and test mechanisms to aid the transition of lighting technologies from the IOUs' emerging technologies programs or directly from manufacturers into their incentive or other lighting measure programs (including third-party and LGP programs) at a faster rate than has been achieved historically.

6. Within portfolio target and cost-effectiveness parameters, design and test a package of rebates, incentives, and voluntary industry agreements to bring significant numbers of the best available lighting technologies (e.g., Solid State Lighting) to market (per the Strategic Plan) and leverage other program activities to deploy these products and incentives to end-users.

These activities will enable the IOUs to develop a multi-year market transformation plan or "roadmap" for each lighting technology that charts its course from emerging technology programs or manufacturers, into production energy-efficiency programs, and eventually – as market transformation occurs – into a lower profile within programs. This initiative will be closely linked with the Lighting Market Transformation, which will develop appropriate metrics and end-point definitions for each technology. All together, the IOUs will have the information necessary to more closely monitor a specific technology's progress in the market and provide a reasonable means to predict the timeframes during which the dollar value of incentives for specific measures may become lower, quantities may be reduced in programs, or specific measures no longer achieve the IOUs objectives.

This initiative may involve several additional strategies:
• Leveraging incentives offered by the IOUs' other customer energy efficiency programs to encourage increased production and distribution of high-quality products;
• Augmenting funding for existing energy efficiency programs to include activities required to fill the LMT gaps identified by the Lighting Technology Advancement initiative;
• Influencing technology development with manufacturers through activities such as design competitions and collaboration in developing equipment specifications;

B.2) Lighting Education Sub-program

The program allocates limited funds to developing a trusted long-term source for lighting information, workshops, case studies and best design practices; noting that such efforts should target both the new and retrofit markets. The PIP calls out the potential role of the California Lighting Technology Center at UC Davis in coordinating lighting technologies educational work. SCE's program has committed to working with the CLTC for the this purpose as part of its LMT program. The program plans to expand lighting information provided in the on-line buyers guide.

General findings:

1) The IOUs could develop and file with the CPUC by 2/2010:
   - Market Sector LMT plans for each key sector (Residential, Commercial, Industrial & Agriculture and Exterior lighting) that describes in broad terms the lighting solutions and goals needed through 2020 to support the ZNE goals in the 2008 CEESP.
   - A prioritized list of key lighting technologies, systems, design strategies and solutions that need LMT pipeline plans for each market segment. This priorities list could be filed with the CPUC by 2/2010 and then updated annually (with additional midyear updates as needed).

2) The IOUs could develop or revise LMT pipeline plans for the top 10 to 12 lighting solutions annually based upon potential market impacts and market sector coverage.
   a. As part of this, the IOUs could identify the funding and partnerships for each LMT pilot project and the needed interactions with the Workforce Education and Training; Codes & Standards; DSM coordination and integration; Marketing, Education and Training: Research and Technology and Local Government.

3) The IOUs could design and implement at least one LMT pilot project for each market segment annually with support and co-funding from other IOU programs, public and private partnerships.

II. Lighting Incentive for Basic CFLs and Advanced Consumer Lighting Program

A) Budget Summary

IOU/ Program number	Name	Total admin cost	Total M&O	Total direct implementation	Total budget
PGE2100	**Residential Lighting for Basic CFLs**	$7,393,525	$9,079,452	$70,287,508	$86,760,485
SCE	"	$3,745,246	$219,451	$28,694,303	$32,659,000
SDG&E	"	$1,222,324	$2,281,458	$8,473,233	$11,941,025
All IOUs	**Basic CFLs**	*$12,361,095*	*$11,580,361*	*$107.46 million*	**$131.6 million**
PGE	**Advanced Consumer Lighting Program**	$1, 260, 650	$3,026,484	$1,265,971	$5,553,105

SCE	"	$5,071,852	$597,531	$37,440,658	$43,110,000
SDG&E	"	$1,222,324	$2,281,458	$3,090,084	$6,593,876
All IOUs	**Advanced Consumer Lighting**	*$7,554,826*	*$5,905,473*	*$41,796,713*	**$55,256,981**

B) Program Details- Basic CFL Sub-Program (of Residential EE Program)

The basic CFL program offers incentives for basic CFLs from 0-1,600 lumens as follows. The program will only rebate up to 30 watt bulbs, and will not include any dimmable or 3 – way products (which are part of the Advanced Consumer Lighting Program; see below). However, all upstream measures from the two programs will be combined into one unified program offering to participants.

Basic CFL lumens	Incentive
0 – 799	$1
800- 1,099	$1.25
1,100 – 1,599	$1.75
1,600 or greater	$2

Some 370 retailers with 2200 stores would participate in this program**.** The program will target stores in low-income neighborhoods and focus on independent retailers, deep discount stores and small chains. These stores are where the highest combined product volume is found and they have the lowest historical rates of free-ridership.

III. Advanced Consumer Lighting Sub-Program (of Residential EE Program)

The program will offer all forms of ENERGY STAR labeled screw-in compact fluorescent lamps other than the non-dimmable screw in basic tube CFLs of less than 30 watts, which will be offered in the Basic program. The program will offer ENERGY STAR labeled hardwired and plug- in fixtures, screw-in, hardwired, or plug-in LED lamps and fixtures, based on IOU approval for quality features, efficacy, suitability for mass retail sales and, when applicable, ENERGY STAR listing. The program will also offer early generation illumination screw-in halogen lamps that meet the state 2012 and federal equipment standards.

Specifically, the program will offer incentives on the following measures:

Product	**Incentives per unit**
bare spiral CFLs > 30 watts	Not specified
specialty and high performance CFLs	$1.00- $2.00
CFLs of advanced quality (super CFLs)	$10
exterior and interior fluorescent fixtures	$5,00- $10.00
fluorescent table lamps, desk lamps, floor lamps and torchieres	$5.00- $10.00
Night lights (including LEDs)	$.50
interior screw in LEDs for task, accent, and area lighting	$1.00
interior hardwired LED fixtures	$10.00
Exterior LEDs	$5.00 - $10.00
LED holiday lights	$.05 per LED
Other variations of fluorescent lighting such as cold cathode and induction	Not specified

Screw in halogen lights	Not specified

The exchange component of the program will include the following:

- Table lamps, desk lamps, floor lamps and torchieres
- LED night lights
- LED holiday lights

SDG&E will offer the Advanced Lighting Program as a non-resource program.

A) Advanced Consumer Lighting Sub-Program Summary

Some 5600 store locations are expected to participate in this program through out the 3 IOUs territories.

The program will use bill inserts, special events and other promotional materials to educate consumers on CFLs, LED products and fixtures; 1-2 two bill inserts/year are planned.

It will also emphasize in-store signage and displays. Manufacturers will be responsible for erecting these and to provide utility specific stickers on individual products. Manufacturers will work with retailers to also undertake newspaper, radio and other types of advertising. The IOUs will work with media outlines to solicit consumers into taking the ENERGY STAR pledge to replace standard lighting with efficient products. The On-line buyers guide will link to this program. The IOUs will explore incorporating advanced lighting products into the SW Whole House Performance Program.

B) Advanced Consumer Lighting Sub-Programs – Additional Sub-programs

B.1) Advanced LED Ambient Lighting Sub-program

The Advanced LED Ambient Lighting sub-program will apply upstream incentives to drive market emergence and sales of high power LED products. For any recessed can fixtures or products requiring more than simple installation, the proposed end-use delivery mechanism is lighting contractors, using midstream incentives to mark down the prices. LED products that illuminate rooms and large residential areas will qualify for the higher incentives.

Quality assurance of LED ambient lighting in this sub-program will follow the guidance of the DOE and EPA, particularly the CALiPER testing program, and the ENERGY STAR® Solid State Lighting specifications. Promotion of the program will be unique in that a different set of manufacturers is targeted than the main upstream programs. Materials will be customized to fit the LED market.

Proposed buy-down incentives for the Advanced LED Ambient Lighting subprogram are negotiable with manufacturers, and will be set to cover approximately all manufacturing costs. The IOUs will collectively set the same incentive level for each model proposed.

Proposed incentives for the L-Prize winning products will be covered under the Advanced LED Ambient Lighting sub-program. If this sub-program is not approved, L-Prize winning product incentives will range from $5 to $10 per unit.

B.2) California Super- CFL Sub-program

A California Super CFL sub-program will target medium- high income sectors, where CFL saturation rates are low (based on 2005 data). This program will start as a pilot and will offer higher- per unit incentives for advanced CFLs meeting stringent standards and specifications for dimmability, color, mercury content, dimensions, longevity, efficacy and low defect rates. The pilot will test the theory that improved quality bulbs overcomes market barriers. Upon confirmation of this hypothesis, the program will be expanded.

The program aims to reduce the market barrier of high costs through incentives.

The program will influence manufacturers to offer CFLs that fit small and tapered sockets. These comprise a significant part of the residential lighting market. The IOUs state that "the program is designed to influence profound effects in the areas of market penetration of specialty product types, and in increasing the ratio of specialty products to total products."

B.3) Plug-in Lamp Exchange Sub-program

This program will consist of local events at which customers may exchange their incandescent table, desk, and floor lamps, including torchieres, for energy-efficient lamps. An Energy Expo theme will be added. Seasonally, holiday light exchanges will also be included in which LED light strings are offered.

B.4) Lighting Showroom Store Outreach Sub-program

This will offer higher incentives for high-end products. The IOUs are currently in discussions about incentive levels. Proposed incentives for the showroom program currently are as follows:

Lamp lumens adder	Winner	Just in book	Per fixture incentive
<1,100 Lumens	$5	$5	$1
1,100 to 1,599 Lumens	$15	$12	$1
1,600 to 1,999 Lumens	$20	$16	$1
2,000 to 2,599 Lumens	$25	$21	$1
2,600 to 3,599 Lumens	$28	$23	$1
3,600 to 4,599 Lumens	$30	$26	$2
≥4,600 Lumens	$35	$33	$5

General findings:

- SCE is funding significantly greater volume of advanced lighting measures than is PG&E ($37.4 versus $1.2 million).
- PG&E's proposal primarily focuses on the basic CFLs ($86.7M for basic vs $5.5M for ACL) while SCE & SDG&E are more balanced between the basic and ACL programs.
- The introduction of the emerging LED lighting products could require a great deal of attention to the high-quality of the products and having specifications for the warrantee periods, the color, the dimming, the harmonics, etc. and these could become part of the incentive requirements.
- The program target goals of 10% per year increased participation, visits and training of the retail locations could be improved

- Information on the IOUs would integrate the Lighting Market Transformation program with core programs could be further developed.

On-Bill Finance: Summary of Proposals in 2009-11 EE Funding Applications

Commonalities among IOU On-Bill Financing Programs:

- **Program roll out order with institutional preceding commercial**
- **$100,000 loan cap for small commercial customers, $250,000 loan cap for institutional customers**
- **Loan terms**
- **Difficulty targeting and reaching residential market. There is a reluctance to administer residential loans due to federal lending rule complexity, overhead costs, and loan terms don't enable positive cash flow in time period of typical loans.**
- **Interest in utilizing AB 811 for residential loans**
- **Interest in partnering with third party lenders and banks**
- **SCE, SDG&E, and SCG propose an OBF balancing Account to track funds**

The 2009-2011 EE Portfolio guidance decision required the IOUs to develop on-bill financing mechanisms for EE projects targeting different customer segments at varying levels of engagement, specifically the IOUs were required to:

1. Implement a program for *institutional* customers
2. Pilot a program for small *commercial* customers
3. Perform evaluation for prospective *residential* customers

All of the IOUs met these basic requirements.

Budget overview:

On-Bill Financing Budget			
PG&E	**SCE**	**SDG&E**	**SCG**
$ 32,739,174	**$ 23,978,000**	**$ 2,624,999**	**$ 2,784,038**

Findings

a. Energy Division has looked at various OBF programs across geographic regions and is concerned the funding levels allocated for OBF are low across utilities and might benefit from an increased budget. (Ex. Cities such as Palm Desert have claimed $7.5 million for residential loans in just 5 weeks).[1]

b. The IOUs could consider the merits of extending the program to large commercial customers, as this market might benefit from the option to participate in the OBF program. Market analysis could answer these questions.
c. Marketing of utility programs is very important for program adoption. In order to assure all interested customers are aware of OBF programs, utilities could consider increasing the marketing budget for this program.
d. Comprehensive projects are very effective for energy savings, such that the utilities consider providing more comprehensive projects via partnerships with ESCOs, with the idea this could increase potential for OBF.
e. The government sector holds leased buildings for long periods of time and might benefit from increasing the loan terms in the OBF program from 7 years to 10-15 years.
f. Energy Division has scheduled one Finance workshop to be held June 15 in Downy, CA.

I. PG&E

Budget and Financing Mechanisms
PG&E is requesting a total of ***$32.7 million*** for their OBF program. $6 million will fund billing design changes to allow for easier tracking and accounting of monthly finance charges, $11.8 million will fund or buy down the interest of EE retrofit loans, and the last $8.2 million will act as a provision of taxes (i.e. $18 million of the 3-year $32.7 million would be applied directly to lending activities). PG&E program rebates and incentives will be available for all those enrolled in OBF. Three financing mechanisms PG&E is considering to implement this program include:

- Utility Funded Program
- Partnering with financial institutions as third-party lenders
- Partnering with state/federal agencies to offer loans to state or federal agencies using third-party funding mechanisms (ex. Possibly using state revenue bonds provided by stimulus)

Customer Segment Program Developments

(1) Institutional Customers: *PG&E is targeting the adoption of energy efficient street lighting by Local Government Partnerships (LGP), identifying the Clinton Climate Initiative (CCI) as an ideal partner to assist in the replacing of old fixtures with LED technology.*
   a. *Financial constraint*- Institutional customers have noted the maximum $250,000 loan outlined in the OBF program will not be enough to cover the costly retrofits that are necessary to reduce climate change effects. This assessment has led to major focus on third-party loans, allowing flexibility by banks or other financial institutions to fund larger amounts to meet more integrated EE, DR and DG goals.

(2) Small Commercial Customers: PG&E has completed a benchmarking study to gain insight on OBF programs in North America. Twenty-one utilities were interviewed. Reported findings are that other successful programs started small and focused on one to two technologies. Programs that were less successful targeted 75% residential customers with no tandem rebate/incentive and had difficulty finding an interest rate that was adequate*. Market research is planned to design a smart pilot program to launch by 2010.*

(3) Residential Customers: PG&E has outlined clear goals for research design and *will conduct similar evaluations* to institutional and commercial customers, with extensive qualitative research on residential customers. *This will be initiated in 2009 with completion scheduled for 2010.*

II. SCE

SCE's 2009-2011 institutional and commercial programs for OBF are included in its Financial Solutions local programs. This will be a continuation of the 2006-08 cycle building in lessons learned.

Loan Specifics

- **Zero percent interest** for qualified energy efficient lighting, refrigeration, and air conditioning installations.
- Five-year term for commercial and **seven-year** term for government.
- $5,000 - $50,000 cap for commercial; $250,000 (subject to change) cap for institutional.
- Measures

Budget and Financing Mechanisms

SCE is requesting a total of *$24 million* for their OBF program. SCE's initial OBF loans were funded by SCE working cash and recorded in the Procurement Energy Efficiency Balancing Account (PEEBA). SCE proposes an OBF Balancing Account that will track authorized funding revenue for loans, actual OBF loan disbursement and repayments. *OBF will be implemented by third – party contractors incorporating calculated and deemed measures specific to target market segments* and this balancing account will be helpful in tracking loans funded through the proposed portfolio.

Residential Customer Segment

Currently SCE does not offer OBF for the residential sector, although SCE does have historical experience with OBF for energy efficiency projects. SCE presented the following major limitations and constraints for this market.

Limitations:

- OBF historically has been unable to reach the segments of the population most in need of financing.
- Less than 0.1% of the potential residential population takes advantage of OBF.
- Average loan term for residential home improvements is not consistent with retrofits to produce positive cash flow.
- OBF programs need to integrate with direct install and incentive programs for larger participation.

Constraints:

- Administrative burden of changing billing system.
- Issue of "short pay" bills which increase utility credit exposure.
- Perceived low value of OBF to residential customers.

Opportunities:

- SCE will work with local jurisdictions to implement AB 811.
- SCE is pursuing potential loan guarantees through U.S. Department of Energy's Federal. Loan program, should a city default on repayment of the bond issued in AB 811.

III. SDG&E

SDG&E's On-Bill Financing (OBF) program is designed to assist in: *customer installation of energy efficiency measures by easing capital, administrative and time constraints.* OBF loans will help finance integrated qualified energy efficiency *and* demand response measures. SDG&E's 2009-2011 program cycles will build on its 2006-2008 program offering, with a few modifications. SDG&E will:

1. Establish a $9 million sustainable loan pool from non-PGC ratepayer funds.
2. Create a "pilot institutional program" with longer payback period and higher loan ceiling.

2006-2008 Program Cycles

SDG&E has had success in 2006-2008, targeting mainly residential multi-family and selected commercial customers. Phase I focused on making billing changes, initial development, and roll out of the program. Phase II (2009-11), will focus on addressing the "next generation" and lessons learned. It will be influenced by the EM&V work performed from the beginning of Phase I, and the results of research on financial strategies in the New England utility areas. A few specific proposals for 2009-2011 include:

- Increasing loan cap
- Updating credit requirements
- Expanding project eligibility

2009-2011 Proposed OBF Program

SDG&E is requesting a total of *$9 million* for their OBF program. This will be used to create a two-way balancing account for a loan pool funded at $9 million from a refundable non-Public Purpose Program fund, which will use loan repayments to fund additional loans.[19]

Loan and Financing Specifics include:

- $1.5 million will be used to account for the transition from utility working cash to ratepayer funding at the beginning of 2009-20011. This allocation will assist with remaining loan balances from existing loans that were funded by utility working cash.
- $2.5 million each year over the three year period.
- No loan cap is proposed for the loan pool, as SDG&E would like this to be open to support energy efficiency rebate/incentive programs as needed.
- Eliminating the reduced rebate requirement for comprehensive projects
- $100,000 cap for business/multifamily; $250,000 (subject to change) cap for institutional.
- Establishing an OBF Balancing Account (OBFBA) is proposed to track the ratepayer funding and actual loans.

Residential OBF

Constraints:

- SDG&E currently offers OBF to certain multi-family residential customers in order to gauge demand in this sector. Although little traction has been reported, it will continue.
- Highly involved lending laws that can create an administrative burden.
- Project payback periods are not in line with OBF loan payback periods, and increasing loan terms could result in risk in defaults. (Typical OBF loan periods are too short to ensure positive cash flow to borrower).
- Non-transferability of OBF loans is a problem when transferring property.

[19] *Table 7.2 in Budget Workbook has a total of $2.6 million for OBF, need to verify with Utility as the Testimony notes $9 million – possibly the program cycle was not incorporate.*

Opportunities:
SDG&E is continuing to evaluate financing programs for residential markets and *is currently a sponsor of "The Energy Loan"*, a Fannie Mae product, administered by Viewtech, an experienced lender with utility sponsored programs, which *assists homeowners with an unsecured finance option for energy efficient improvements*. Two additional options being considered are:

- Full support of AB811 after adoption into law.
- Partnering with banks or funding institutions to minimize utility risk and lower transaction costs for projects which lay or are outside of SDG&E's current commercial lender license exemption.

IV. **SCG** (Same as SDG&E except for funding proposal)

2009-2011 Proposed OBF Program
SCG is requesting a total of *$3.5 million* for their OBF program. SCG plans on continuing the 2006-2008 OBF programs and intends to create a two-way balancing account for a loan pool funded at $3.5 million from a refundable non-Public Purpose Program fund, which will use loan repayments to fund additional loans. [20]

Loan and Financing Specifics include:

- $500,000 to account for transition from utility working cash to ratepayer funding at beginning of 2009-2011 program cycle.
- $1 million each year over the three years from 2009-2011.
- No loan cap is proposed for the loan pool, as SCG would like this to be open to support energy efficiency rebate/incentive programs as needed.
- Elimination of the reduced rebate requirement for comprehensive projects.
- $100,000 cap for business/multifamily; $250,000 (subject to change) cap for institutional.
- Establishment of an OBF Balancing Account (OBFBA) is proposed to track the ratepayer funding and actual loans.

[20] *Table 7.2 in Budget Workbook has a total of $2.8 million for OBF, need to verify with Utility as the Testimony notes $3.5 million.*

Emerging Technologies Program

Summary of IOU budgets for the Statewide ETP

PIP #	Program Name	Budget
PG&E2108	Emerging Technologies Program	$42,179,390
SCE-SW-009	Emerging Technologies Program	$22,650,000
SDG&E	Emerging Technologies Program	Missing
SCG	Emerging Technologies Program	Missing

1. Program Summary

Program Mission: The mission is to support increased energy efficiency market demand and technology supply by contributing to development of and deployment of new and under-utilized energy efficiency measures (technologies, practices and tools) and by facilitating their adoption as measures supporting California's aggressive energy and demand savings goals.

The ETP has three program goals each goal with specific objectives constituting the core program elements:

ETP Goal #1: Increased adoption of EE measures

- *ETP Objective 1.1:* Perform *technology assessments* (existing)
- *ETP Objective 1.2:* Transform measures to EE programs (existing)
- *ETP Objective 1.3:* Conduct *scaled field placements* (new)
- *ETP Objective 1.*4: Develop *demonstration showcases* (new)
- *ETP Objective 1.*5: Perform *market and behavioral studies* (new)

ETP Goal #2: Increased EE technology supply

- *ETP Objective 2.1:* Support *technology development* (new)
- *ETP Objective 2.2: Perform business incubation* (new)

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 (new)
- *ETP Objective 3.2: SCE Technology Test Centers activities including creating ZNE test facility* (new)
- *ETP Objective 3.3:* Create the *PG&E ZNE Laboratory* (new)
- *ETP Objective 3.*4: Create the *PG&E ZNE Demonstration Home* (new)

2. ED Findings

- The projected budget allocation for the different elements of the ETP program is approximately as follows indicating the level of effort that would be dedicated to each of the program elements:
  1. 46% is allocated to *technology assessment* (constitutes the majority of program focus)

2. 18% is allocated to *scaled field placement*
3. 18% is allocated to *demonstration showcases*
4. 8% is allocated to *market and behavioral studies*
5. 5% is allocated to technology supply-side effort
6. 5% is allocated to business incubation

- There has been considerable change since the July 2008 filings in identifying specific subprograms including the new subprograms that broadened the scope of the ETP program to address new ways to increase EE market demand and technologies supply, as well as performing market and behavioral studies; addressing the SP; quantitative objectives; and logic models including outputs from subprograms, short, intermediate and long term outcomes.

  → The PIP includes specific program goals and quantitative objects associated with each subprogram. Also the logic models for the subprogram include specific outputs, short, intermediate and long term outcomes.

  → The IOUs stated in their PIP that upon beginning of the program, the logic models could be refined and the IOUs are expected to work closely with ED to establish performance indicators for the different subprograms based on the provided logic models as well as solidify the quantitative program targets.

- Areas where more information would be desirable and Questions
  → SEMPRA missing program numbers as well as budget numbers.
  → SCE ETP PIP should adjust the budget figure to include program management and CPUC reporting budget so that the numbers add up.

3. Questions that text does not address:
   → When will the IOUs update their ETP logic models? What process would the IOUs use to work and communicate with ED in establishing performance indicators once the programs start?

   → How would the ETP and ZNE pilot program interact; do they share the same staff/management?

Demand-Side Management Coordination and Integration Statewide Program

09 – 011 Program Budget: $3.6 Million ($1.2 million / IOU)
The three year budget will cover the cost of 2 full-time positions within each IOU to drive integration efforts within and among the utilities supported by additional IOU subject matter experts as well as associated costs. This budget amount represents the administrative budget within the statewide Demand-Side Management Coordination and Integration Program and does not include the budgets expended for integration efforts within separate programs throughout the IOU portfolio.

Summary of Statewide Program:
The Statewide IDSM program culminates in the establishment of a cross-utility statewide strategic planning taskforce focused specifically on promoting the goals and objectives for integrating demand side resources described in the CEESP. The IDSM Statewide Task Force will address eight main issues critical to promoting successful integration efforts:

1. Development of a proposed method to measure cost-effectiveness for IDSM programs and projects.
2. Development of proposed measurement and evaluation protocols for IDSM programs and projects.
3. Track integration pilot programs to estimate energy saving, develop best practices and lessons learned which will be applied to existing and new programs and practices.
4. Review IDSM enabling emerging technologies for potential inclusion in integrated programs.
5. Develop standard integration best practices that can be applied to all IOU programs based on pilot program evaluations and the results of additional integration promoting activities (i.e. EM&V and cost-benefit results)
6. Develop regular reports on IDSM progress and recommendations to the Commission.
7. Organize and oversee internal utility IDSM strategies by establishing internal Integration Teams with staff from EE, DR, DG, marketing, and delivery channels.
8. Provide feedback and recommendations for the IOU's integrated marketing campaigns.

The IDSM Statewide Program addresses the strategies listed in the CAEESP:

1.1 – Carry out integrated marketing of DSM Opportunities across all customer classes
1.2 – Conduct integrated DSM delivery pilots in the residential, commercial, industrial, and agricultural sectors.
1.3 – Develop integrated DSM programs across resources, including energy, water, and transportation.
1.4 – Promote development and support of new technologies that enable or facilitate DSM coordination and integration.

IDSM Pilot Programs
There are several pilot programs the utilities are developing during the 09 – 011 program cycle which are designed to help foster knowledge concerning integrated projects and programs. These pilot programs will help inform future integrated program design with an emphasis on cost-

effectiveness and increased energy savings. Below is a brief description of these programs and their location within the 09 – 011 portfolio plans.

Zero Net Energy (ZNE) Pilot Program– Budget: $10,000,000
The ZNE pilot program is being implemented as part of the statewide Emerging Technology Program (ETP). This pilot will involve the development of a ZNE demonstration home within PG&E's territory that will test new integration supporting technologies as well as promote these results and lessons learned for educational and training purposes. The utilities plan to partner with the emerging technologies program and PIER-funded testing facilities to pilot ZNE approaches. See separate ED staff assessment for more detailed information.

Innovator Pilots Sub-Program (PG&E Local Govt. Program)
This program is designed to encourage local governments to demonstrate new IDSM approaches to energy use and GHG reduction that can become models for other local governments in California.

Green Communities Sub-Program (PG&E Local Govt. Program)
The program promotes integrated marketing materials and approaches to increase IDSM participation. This program also cross-trains PG&E staff on IDSM messaging and opportunities to offer "green" services. Tools will be developed to deliver energy use data to local governments for GHG inventories and IDSM program planning.

SmartAC Program and Low Income EE Integration Pilot (PG&E)
This program provides demand response options to LIEE residents specific to their air conditioning equipment. This program was not approved in the LIEE proceeding.

Low Income EE / Local Govt. Partnership – Moderate Income Direct Install (PG&E)
This program provides home audits to moderate-income residents who do not qualify for CARE. Free EE improvements would be available depending on audit results.

Savings By Design DSM Initiative - $49,245,000 (SCE)
This program represents a new approach to leverage existing delivery channels for EE in the non-residential new construction market to incorporate EE, DR, and renewable resource components.

Advanced Homes Integrated DSM - $24,894,000 (SCE)
This sub-program is a component of the existing California Advanced Homes Program and seeks to expand the CAHP focus to incorporate DR enabling and renewable technologies.

SCE Energy Leader Partnership Model $45,914,000 (SCE LGP)
This sub-program is a new component to the existing LGP portfolio and seeks to create energy partnership with local governments in order to generate savings through municipal retrofits and community outreach.

Technology Resource Incubator Outreach Program (TRIO) $1,200,000 - (SCE)
This is a new program designed to find, fund, and field-test new technologies and technology delivery approaches from the university marketplace and to provide opportunities to mainstream them into the existing programs.

Sustainable Communities Program – Budget: $14,254,000 (SDG&E / SoCalGas)

This third party program will provide advanced sustainable building design and technical assistance for campus projects, mixed-use complexes, residential new construction, multi family and transit-oriented development. The program will incorporate water conservation and transportation considerations into its project designs. See separate ED staff assessment for more detailed information.

Micro-Grid Comprehensive EE Delivery Pilot – (SDG&E)
This program will be geared to demonstrating how IDSM may improve grid reliability by providing local generation to strategic substatios. The project will investigate new communication and control strategies required to serve the micro-grid.

Integrated Demand Side Management for Food Processing Programs (SCE)
This pilot program within the Statewide Agriculture Program will form a collaboration process between the utilities and outside industry stakeholders to promote integrated energy management solutions to end-use customers in the food-processing segment that will include considerations for energy demand, mitigation of air pollution, water conservation and other resource objectives. The pilot program will support actions that provide industrial managers, plant supervisors, and workers with new skills and abilities required to efficiently minimize demand for these resources while still achieving their business objectives.

Non-Compliance Issues
Currently there are no non-compliance issues identified.

Possible Modifications
While there were no non-compliance issues identified, this PIP is weak in a number of areas and may need further revision or elaboration before being implemented. Below is a summary of the areas in which the PIP could use reinforcements.

The Integration Task Force role would be reinforced if clarified in the following areas:

1. The PIP states the IDSM task force will coordinate and work with the ME&O integration efforts, but does not provide a clear description or plan for how it will do so or how much influence the task force will have specific to ME&O integration efforts.
2. The PIP states the IDSM task force will develop recommendations to gauge cost-effectiveness quantification and attribution procedures, but does not describe what role the task force will have in this development and how it will work with subject matter experts to develop these recommendations including appropriate timelines and specific tasks to accomplish this goal.
3. The PIP states the IDSM task force will monitor the development of integrated audit tools in the market sector programs, but does not provide for a clear role for the task force as an entity to provide input and increase standardization for audit tool development.
4. The PIP states the IDSM task force will not run or manage programs, but does not describe how it will interact with market sector programs and influence integration efforts within these programs.
5. The PIP does not indicate how the IDSM task force will intersect with the emerging technologies program to foster integration supporting technologies and include them in programs as appropriate.
6. The PIP could include a better description for how the task force will interact with outside stakeholders on a continuous basis to allow for their feedback and input into the process.

7. The PIP does not include a description for how the task force will disseminate best practices and lessons learned into WE&T efforts that promote integration.

There are still a number of **missing data elements** and specific quantifiable goals within PIP.

1. The PIP describes the GHG and water reduction benefits of the IDSM approach but does not provide a specific approach or a plan for developing an approach for estimating these reductions and associated goals. The PIP also does not include a description of the potential long-term economic and electric / gas hedging benefits of an integrated approach with an associated approach for estimating these benefits and potential goals.
2. The goals section of the PIP does not provide the type of goals needed to drive market transformation such as # of integrated audits performed, number of integrated projects achieved with associated amount of electricity generated / saved in the context of the IOUs existing customer load base. Currently the goals listed have more to do with setting up the statewide IDSM program itself.
3. The PIP does not include a list of all the IDSM pilot projects it will monitor and a plan for evaluating these programs to develop best practices and lessons learned. This is missing from the PIP entirely and the cross referencing is poor.
4. The PIP is missing the required inclusion of a "logic model" describing the rationale for the program design and intersections with other programs.

Editorial Improvements include:

1. Currently the PIP places an emphasis of what the program "is not" rather then the necessary emphasis on what the program "is".
2. The PIP is missing a clear and concise description for how the program will satisfy strategic planning goals. Further development of the missing pieces summarized above would help provide a better description for how strategic planning goals will be addressed.

Local Government: City, County and Regional Government Partnerships

Introduction
California's local governments face two significant, simultaneous challenges: the current severe economic downturn and the long-term threat of global climate change. To achieve maximum energy savings over the 2009-2011 period, California's Investor-Owned Utilities (IOUs) should leverage local governments' strong interest in: 1) Saving money, 2) Developing new green jobs and businesses, and 3) Creating local Climate Action Plans.

The demands of providing essential services with shrinking local budgets and staffs leaves precious little capacity within local governments to focus on non-essential services, including saving energy. In implementing energy efficiency for local governments, programs should be made as accessible as possible to local governments with reduced staff and discretionary resources.

Program Summary
All IOUs provided a master Local Government Partnership program in their March 2009 filings. These programs are built around three main program areas: 1) Government Facilities, 2) Strategic Plan Support and 3) Core Program Coordination. In addition, PG&E proposes a Green Communities program to give peer-to-peer and technical assistance to local governments, as well as an Innovator Pilot program to incubate cutting-edge technologies and practices.

The IOUs propose statewide spending of $291 million on city, county and regional partnerships, including funding for "green communities'' programs that provide peer-to-peer networking and technical assistance from statewide associations of local governments and others.

Key Findings

1. **Benchmarking** It would be ideal if IOUs facilitated benchmarking of all government buildings whenever touched by an IOU program in any substantial way including but not limited to an audit, and building commissioning. This data is critical for disclosure on energy use, prioritizing buildings for audit, retrofit and changes in operation. This data could be included in a central database on building energy performance, using a single standardized approach for all major types of county and municipal facilities.

2. **Integrated DR/EE/DG audit** It would be helpful if the IOUs would facilitate an integrated DR/EE/DG audit for all jurisdictions for all government buildings above a size determined to be cost effective. It would be ideal if the audits were aligned statewide, and provided sufficient information for local governments to make informed decisions about whether to pursue solar PV, helping to reach ZNE goals. Experienced government contractors engaged in IOU partnership programs might need help in providing these audits.

3. **Energy Use Data** It would greatly assist local governments and market transformation if IOUs were able to provide data on municipal facility energy use, and community energy use by building sector, to local governments in a timely manner, and standardized format that reflects AB32 and other statewide inventorying efforts. Provision of this data in a format accessible by all local governments is a key ingredient in their development of local Climate Action and Energy Action Plans. Further, this data could also support government facility benchmarking, and integrated audits. It would be ideal if IOUs worked with local governments and the California Air Resource Board to develop a state-wide format for providing computer based energy use data to each jurisdiction.

4. **On-Bill Financing for Government Building Retrofits** Initial review of IOU proposals for on-bill financing have revealed shortcomings. Since on-bill financing could be the only source of low-cost capital for some, it would be helpful it IOUs further explored options for making bill financing (OBF) programs more cost effective. Further, components of the proposed programs, such a loan caps, terms, and total amount available, might not match the needs of many potential borrowers. IOUs could explore options to significantly increase the total amount of energy efficiency financing available, as well as the potential size of individual loans. (This inquiry into On-Bill Financing links to a broader investigation into an array of financing mechanisms discussed below.)

5. **Program Targets Aligned with CEESP** It would be helpful if IOUs could identify quantitative targets for program elements under Strategic Plan Support (e.g. guiding documents such as Climate Action Plans, General Plans, code compliance, reach code adoption etc.) Government partnership program implementation plans don't always detail how the 2009-2011 programs and spending will move local governments toward CEESP goals. Program targets could answer these questions by capturing desired outcomes rather than just interim outputs such as number of workshops or trainings. The targets could reflect the needs and interests of each local government and the CEESP. These targets could be set in an open forum that included local governments, the CPUC, and other stakeholders. They could be designed with input from the CEC and other experts. The targets could shape the services that will be provided under peer-to-peer and Green Community-type programs.

Additional Significant Issues

1. IOU Provision of Data and Information

1.1 Best Practices Website It would fuel adoption of best practices and market transformation if IOUs were to fund the creation and maintenance of a statewide Local Government Energy Efficiency Website with updated best practices, model ordinances and programs, policy documents, case studies, staff reports, and outreach tools to assist California local governments in implementing Energy Efficiency programs reflecting the CEESP. This website could support local governments learning from each other, which is a primary method for them to advance changes in policies and practices. The website could be created in conjunction with statewide nonprofit associations of local

governments such as the Local Government Commission, ICLEI and the Institute for Local Government, and draw on suggestions from Green Cities California.

1.2 Statewide Energy and GHG Data Portal IOUs could create a single web portal for prompt delivery to local governments of data on 1) community energy use, and 2) government facility energy use, referenced above. The IOUs could work with local governments, ICLEI, the Air Resources Board and others to develop an easy-to-use standardized data request form, and portal.

2. **Statewide Assistance for Local Governments & Peer-to-Peer Assistance** IOUs could produce a roadmap for services to assist local governments in adopting exemplary practices and policies. This could be developed with the CPUC, statewide local government associations, and local governments via a workshop to be held in the third quarter of 2009 to 1) identify priority topic areas, delivery mechanisms, and best practices for these vital services, and 2) and see them reflected in detailed budgets for the program cycle. This process could result in insuring these services are 1) meeting the needs of local governments, 2) reflecting the CEESP, 3) coordinated across all IOU service territories in like fashion, 4) supporting goals and milestones individual partners and their member cities have identified for the 2009-2011 cycle, and 5) coordinated with the energy efficiency website discussed below. This effort could also insure that local innovation from leaders like Green Cities California, Innovator Pilots, etc. are disseminated in ways that allow cities – especially those with limited staff and resources - to adapt and adopt each others' innovative policies and practices. This work is called out in four different CEESP strategies: 1-5, 5-1, 5-3, 5-4.

3. **Financing Mechanisms** IOUs could facilitate jointly with the CPUC through workshops and other means a process to determine the most cost-effective and efficient financing mechanisms for government buildings, homes and commercial buildings from the field of various mechanisms now available and emerging. Stakeholders include the state Business, Transportation and Housing Agency, the state Treasurer, Air Resources Board, CEC, local governments, and others.

3.1 Financing - Community IOUs could explore the efficacy of supporting AB811-type and other community financing districts by:

- Utility direct investment in municipals bonds issued by Community Financing Districts or AB 811 Districts,
- Bridge loans to help finance the startup of new financing districts or new rounds of financing by existing districts;
- Loan guarantees, or other credit enhancement.

Further, as part of financing development, terms could be established for use of the funds to create more certain energy savings, and spur investor and borrower confidence. For instance, the following elements could be recommended or required by Community Financing Programs:

- ✓ The Community Finance District liens are senior
- ✓ Energy Efficiency is first in their loading order enforced by their RECO & CECO, or terms of eligibility
- ✓ Only EE improvements that meet an industry standards (such as HERSII) may be financed (no seismic upgrades allowed, etc.), with a cap on total financing so as not to create an unreasonable tax load on a property,

- ✓ Financing district upgrades should be done in concert with IOU residential and commercial rebate/incentive programs
- ✓ Prohibit resale of RECs

3.2. Financing – Revolving Funds Within Local Governments Market transformation of government buildings would be facilitated if IOUs worked with local governments and the CPUC to assess the feasibility of providing encouragement for local governments to establish revolving loan funds, in which savings in excess of debt service from energy efficiency retrofits are returned to the department or facility for use in future energy efficiency projects. PG&E identifies in its master local government PIP its interest in these dedicated funds. Local governments suffer from a scarcity of discretionary general fund dollars and it is typical practice for savings from energy efficiency projects to free up funds for other types of services. This undercuts the ability of ratepayer rebates and incentives to have second and third generation effects. *Possibly from ARRA Energy Efficiency and Conservation Block Grants.

4. Streetlight Retrofit Program It would be ideal if IOUs identified a statewide streetlight and traffic signal energy efficiency plan to capture this significant untapped opportunity using lessons learned from emerging technology streetlight pilots in SDG&E territory. The plan should consider the needs of large and small cities, and draw on ideas from Green Cities California such as countywide bulk purchase of streetlight technology. This inquiry could include parking garage lighting. Further, IOUs could propose program budgets for local government partnerships in each IOU service territory to pursue this work, drawing on peer-to-peer support from cities for each other.

5. Government Building Retrofit Programs and Standards Experts assert that energy use among city and county facilities is at least as large as among state government buildings, whose energy use is measured against reduction goals set by the Governor's Green Building Team. It would be ideal if IOUs worked statewide with local governments to evolve work in this sector through the following means:

5.1 Statewide Monitoring Based Commissioning and Retro-Commissioning Standard IOUs could develop a joint proposal for statewide standards for RCx and MBCx for government and other commercial buildings or clusters of buildings using lessons learned through the County of Los Angeles and University of California/California State University Partnerships, commercial building sector programs, and the state RCx collaborative program at the CEC. This proposal could outline how commissioning standards could be implemented in all partnerships, including those with smaller jurisdictions.

5.2. ZNE and Government Buildings IOUs could provide the CPUC with a road map for how municipalities will take steps using ratepayer programs toward ZNE public buildings. This report could be shaped with significant input from local governments and IOU/CPUC ZNE programs.

5.3 Responsiveness in Economic Downturn IOUs could report to the CPUC on the status of planned and committed municipal retrofits against CEESP goals with respect to both a) impacts of forecasted matching fund shortfalls (due to the economic downturn) and b) success of various financing options for government building retrofits, and 3) any information on use of Stimulus dollars by local governments for building retrofits.

5.4 Regional JPA Energy Offices for Small Government Building Retrofit IOUs with input from small local governments and school districts could report on the feasibility of creating service hubs in appropriate government agencies to support small cities and school districts to retrofit or re-commission their buildings by offering services including utility bill analysis, building benchmarking, audits for retrofits and commissioning, contractor selection, project management and continued learning. Small local governments and K-12 schools often cannot afford an in-house energy manager and could benefit from a known provider that seeks deep, long-term savings and returns all savings over the competitive cost of their work to the school or city. IOUs could investigate leveraging Community College workforce education programs in such hubs, devolving best practices from the successful University of California/California State University partnership, and the possibility that such hubs could operate on an enterprise basis with fee-for-service funding from client utility bill savings.

5.5 Comprehensiveness IOUs could report to the CPUC on a 'best practices" protocol for comprehensiveness including measures and cost for government building and small commercial retrofits, including direct install.

- These efforts should be coordinated closely with the commercial buildings efforts

Overview of Partner Budgets by IOU

SCE Local Government Partnerships Budget Overview by Partner

Local Government Partnerships	Total Administrative Cost	Total Marketing & Outreach	Total Direct Implementation	Total Budget By Program
City of Beaumont*	$158,559	$2,727	$411,714	**$573,000**
City of Long Beach*	$378,597	$6,717	$1,465,686	**$1,851,000**
City of Redlands*	$197,973	$2,727	$597,300	**$798,000**
City of Ridgecrest	$191,352	$2,697	$591,952	**$786,000**
City of Santa Ana*	$337,932	$6,906	$1,513,162	**$1,858,000**
City of Simi Valley*	$190,990	$909	$199,101	**$391,000**
City of South Gate*	$197,973	$2,727	$597,300	**$798,000**
Community Energy Leader Partnership	$686,859	$14,535	$3,189,606	**$3,891,000**
Desert Cities*	$324,061	$5,454	$1,156,486	**$1,486,000**
Eastern Sierra Energy*	$235,212	$3,270	$717,518	**$956,000**
Energy Leader Partnership Strategic Support*	$173,000	-	$821,000	**$994,000**
Kern County	$481,635	$9,804	$2,153,561	**$2,645,000**
Orange County Cities*	$417,918	$8,178	$1,791,904	**$2,218,000**
Palm Desert Pilot	$2,418,003	$1,536,079	$16,860,918	**$20,815,000**
San Gabriel Valley	$395,928	$7,269	$1,592,803	**$1,996,000**
San Joaquin Valley*	$423,025	$8,178	$1,793,796	**$2,225,000**
South Bay	$560,402	$10,902	$2,397,696	**$2,969,000**
South Santa Barbara County	$557,894	$10,902	$2,389,204	**$2,958,000**
Ventura County	$765,944	$18,171	$3,980,885	**$4,765,000**
County of Los Angeles	$522,000	$15,000	$2,200,000	**$2,737,000**
County of Riverside	$838,097	$15,000	$2,873,903	**$3,727,000**
County of San Bernardino	$503,500	$7,500	$1,675,000	**$2,186,000**
TOTAL LOCAL GOVERNMENT	**$10,956,854**	**$1,695,652**	**$50,970,495**	**$63,623,000**

* New Partnerships

PG&E Local Government Partnership Budget Overview by Partner

Local Government Partnership	Total Administrative Cost	Total Marketing & Outreach	Total Direct Implementation	Total Budget By Program

Local Government Energy Action Resource (LGEAR)	$5,931,196	$1,547,548	$16,246,680	**$23,725,424**
Innovator Pilot	$2,181,921	$2,224,390	$32,926,899	**$37,333,209**
Green Communities*	$2,696,837	$625,000	$13,481,059	**$16,802,896**
AMBAG	$2,126,018	$762,972	$7,182,899	**$10,071,888**
City of San Joaquin	$317,375	$750	$273,774	**$591,899**
East Bay	$5,951,664	$617,430	$10,595,987	**$17,165,082**
Fresno County	$1,408,501	$609,003	$5,085,289	**$7,102,792**
Kern County	$1,647,763	$942,928	$4,452,912	**$7,043,602**
Madera County	$280,560	$663	$242,016	**$523,239**
Marin County	$862,651	$274,401	$2,464,083	**$3,601,135**
Mendocino County	$222,540	$50,750	$322,141	**$595,431**
Napa County	$437,202	$144,958	$917,840	**$1,500,000**
Redwood Coast	$1,354,128	$200,657	$1,996,610	**$3,551,396**
San Joaquin County	$1,286,603	$622,148	$1,642,644	**$3,551,396**
San Luis Obispo	$319,721	$213,001	$1,625,096	**$2,157,818**
San Mateo County	$1,171,625	$155,252	$2,816,419	**$4,143,296**
Santa Barbara County	$319,721	$213,001	$1,625,096	**$2,157,818**
Sierra Nevada	$1,273,750	$557,502	$4,087,741	**$5,918,994**
Sonoma County	$612,624	$214,633	$2,429,230	**$3,256,488**
Silicon Valley	$2,762,501	$800,005	$8,275,482	**$11,837,987**
San Francisco	$2,381,401	$723,605	$11,100,579	**$14,205,585**
TOTAL LOCAL GOVERNMENT	**$35,546,302**	**$11,500,597**	**$129,790,476**	**$176,837,375**

Southern California Gas Company Local Government Partnership Budget Overview by Partner

Program Name	Total Administrative Cost	Total Marketing & Outreach	Total Direct Implementation	Total Budget By Program
LA County	$165,755	$36,000	$442,736	$644,491
Kern County	$136,513	$46,893	$109,962	$293,368
Riverside County	$153,955	$18,000	$249,895	$421,850

San Bernardino County	$152,861	$18,000	$243,600	$414,462
Santa Barbara County	$145,951	$32,000	$146,785	$324,736
SBCCOG	$143,677	$36,000	$268,933	$448,610
San Luis Obispo County	$152,581	$31,000	$118,622	$302,203
Tulare Cnty-Visalia	$117,101	$36,000	$124,934	$278,036
Orange County Cities	$102,544	$52,800	$233,906	$389,250
ILG/LGC/ICLEI	$110,492	$147,000	$174,893	$432,385
Community Energy	$134,454	$19,500	$211,097	$365,051
Desert Cities	$30,109	$12,000	$33,595	$75,704
Ventura County	$166,479	$120,000	$211,333	$497,812
Palm Desert Pilot	$514,282	$767,914	$1,099,258	$2,381,454
Total	**$2,226,755**	**$1,373,106**	**$3,669,550**	**$7,269,411**

SDG&E Local Government Partnership Budget Overview by Partner

Program Name	Total Administrative Cost	Total Marketing & Outreach	Total Direct Implementation	Total Budget By Program
Local Government Partnerships				
City of Chula Vista	$2,855,833	$1,386,006	$1,412,468	$5,654,308
City of San Diego	$3,473,074	$243,457	$2,302,258	$6,018,789
County of San Diego	$1,844,229	$447,261	$1,331,084	$3,622,574
San Juan Capistrano	$443,125	$53,781	$73,109	$570,015
Port of San Diego	$1,834,740	$219,417	$283,952	$2,338,108
SANDAG	$1,216,185	$347,920	$835,465	$2,399,570
ICLEI	$457,418	$10,439	$2,763	$470,620
New Cities	$2,270,951	$52,194	$13,816	$2,336,962
Total	**$14,395,556**	**$2,760,475**	**$6,254,915**	**$23,410,946**

Marketing, Education & Outreach (ME&O): Summary of all Program Implementation Plans

I. Statewide Marketing, Education & Outreach

(SCE-SW-011, PGE 2110, SDGE SW-ME&OA, SCG SW-ME&OA)

Total Budget: $61,584,255

Budget Summary

All IOUs	**Total**	SW ME& O	ME&O Strategic Plan
Preferred	$61,584,255	$57,084,255	$4,500,000

SCE	**Total**	SW ME& O	ME&O Strategic Plan
Preferred	$20,213,514	$18,736,500	$1,477,014

PGE*	**Total**	SW ME& O	ME&O Strategic Plan
Preferred	$26,948,382	$24,979,247	$1,969,135

*PGE excludes mandated budgets

SDGE	**Total**	SW ME& O	ME&O Strategic Plan
Preferred	$8,383,230	$7,770,662	$612,568

SCG	**Total**	SW ME& O	ME&O Strategic Plan
Preferred	$6,039,129	$5,597,846	$441,283

The SW ME&O program has two subprograms:

1. Statewide Marketing & Outreach (SWM&O)
2. ME&O Strategic Plan Support.

Summary of sub-programs

A. SW M&O, Budget for 2009 only: $17,198,085

The purpose of the SW ME&O is to increase IOU consumer awareness of and participation in both IOU energy saving programs, and to promote behavior changes that result in energy savings and reduce GHG emissions. The SW M & O FYP sub-program will be implemented in for 2009 only. For PYs 2010-2011, either a new brand or revamp existing brand will be utilized as well as, as a new SW M & O integrated communication plan for this sub-program.

This 2009 SW M & O program is divided into three components that are implemented by three different agencies:

- FYP General- Efficiency Partners (McGuire)
- FYP Rural- Runyon,Saltzman, Einhorn
- FYP Spanish TV- Staples Marketing

These programs will be largely the same as the 2006-08 programs with the following changes:

1. Message concepts will be tested, but because of the economic down turn, the campaign message will be more focused on financial benefits as a result of energy savings, rather than global warming impact as a motivation for action.

2. PG&E territory will not have TV ads for the FYP General, and will have limited Spanish TV coverage, as well as a reduced rural market campaign. These changes are a result of a PG&E decrease in funding for the program.
3. The rural campaign will incorporate recommendations from the 2006-08 program process evaluation and will increase the number of community based organizations (CBO) participating in the program, with the additions of an urban-based, a Hispanic-focused, and a health-focused CBO.
4. FYP General will not organize events as outreach activities.

B. ME&O Strategic Plan Implementation

The goal of this program is the implementation of ME&O strategies. As such, the program will fund the brand assessment/creation and the web portal, as well as the development of an integrated communication plan for the SW ME&O program for years 2010-2011. The communication plan will employ ME&O strategies such as utilizing segmentation research to develop targeted and effective DSM messages to incite behavior changes and use social marketing best practices.

Energy Division Findings:
The PIP adds program elements to the campaign that were suggested in the process evaluation led by Energy Division staff. These changes include additional CBO for urban areas and Hispanic outreach, using innovative outreach channels such as fotonovelas and text messaging. The FYP website could link to SCE's On-line Buyer's Guide and IOU LIEE webpages.

Advancement of CEESP
The SW M & O FYP subprogram advances the following strategies:
ME&O strategies:
1. Strategy 1-3, use social marketing techniques to build awareness, change attitudes and induce action.

The ME&O Strategic Plan sub-program:
ME&O strategies:
1. Strategy 1-1, Establish a recognizable and trusted brand for CA EE and other DSM consumer products and services.
2. Strategy 1-2, utilize SW segmentation research to develop a targeted and relevant EE and DSM messages that incite behavior change/action
3. Strategy 1-3 use social marketing techniques to build awareness, change attitudes and induce action.
4. Strategies 1-4, develop a CA EE web portal with information on EE, DSM and GHG reduction issues and practices.

IOU Local ME& O Programs

SCE

SCE-L-101-Core: On-line Buyers Guide
Preferred Budget: $1,360,000

The On-line Buyer's Guide (OBG) is a new program that seeks to provide SCE's residential customers with one web-based resource for information and tools to overcome market barriers

that inhibit the purchase of energy efficient products and program participation. The guide includes technical information, a product database, a savings calculation tool, a shopping guide, rebate program information, and retailer information. The target audience is residential customers, more specifically, SCE's segmentation personas referred to as proactive money savers with high energy consumption and environmentally conscious customers with high energy consumption.

The guide will provide an overview on products by category including appliances, HVAC, lighting, refrigerators. The information provided includes an information discussion about selected technologies and options available in the market and these products are cross referenced in the product database. A calculator tool is aligned with this process to encourage visitors to calculate energy and financial savings, GHG reduction, and rebate options.

The program seeks to address the barriers of lack of information and awareness about specific measures and technologies. In addition, another objective is to provide an easier more informed path for the purchase of these products as a way to reduce plug-load.

The OBG will link to the Topten USA website will provide specific product category information on the ten most efficient products in each category, including television, appliances, computers, HVAC. In addition, OBG will link to customer rebate options.

ED Findings
SCE could co-brand with "new" EE brand and link to new EE web portal when both are operational. SCE could provide a link to the FYP website, LIEE webpage and the CSI website. SCE could establish quantitative website targets such as number views (unique), web pages, number of downloads, calculator uses, links, pass-throughs to rebate programs, Topten, etc., and targets for number of retailers they will work with.

Advancement of CEESP
The PIP states that it advances the following strategies; however, some activities are minor advancements only for the following strategies:

<u>Residential</u>

2-2 Promote effective decision-making to create widespread demand for energy efficiency measures
2-3 Manage research into new/advanced cost effective innovations to reduce energy use in existing homes
3-2 In coordination with 2-2, develop public awareness of and demand for highly efficient products.
3-3 Create demand for such products through market transformation activities.
4-1 Drive continual advances in lighting technologies through research program and design competitions

<u>IDSM</u>
1-1 Carry out integrated marketing of DSM opportunities across all customer classes.
<u>ME&O</u>

Integrated Marketing & Outreach (IMO), SCE-L-006, new program
Total Preferred Budget: $19,594,000

The SCE IMO program is designed to integrate energy efficiency, demand response, LIEE and CSI marketing efforts. The program has four main objectives:
1. Conduct market intelligence research to better understand its residential and business customers. This data, once collected, will be stored in a central repository database. In addition, SCE will be updating its residential attitudinal segmentation that will also be included in the database;
2. SCE will enhance its website to integrate its DSM solutions and provide reader friendly information and decision making tools for both residential and commercial customers;
3. Conduct seasonal marketing campaign on integrated solutions that compliment, not duplicate SCE targeting market efforts and the SW M&O program. The program will use traditional outreach channels such as bill inserts, direct mail and online ads, as well as non-traditional marketing such as social networking, CBOs and other partnerships;
4. Increased outreach to communities, including hard to reach and ethnic using event outreach and the Mobile Energy Unit (MEU). Events will include business trade shows and public/community based.

The program is to be funded from EE, DR, CSI and LIEE, but no figures were stated.

The program will explore behavior-based marketing such as the one used by Positive Energy at the SCE's Palm Desert Demonstration Partnership. The results of that pilot could be a decisive factor in whether to expand this approach.

SCE is planning to conduct a process evaluation that will address the following issues:
1. How well OBG utilized web-based buying guide best practices.
2. Customer ease of use with the site
3. Ease of customer adopt of EE purchase recommendations
4. Existing customer barriers after use of website
5. Other customer information needs after use of website
6. Increase in customer awareness of rebate/resource programs
7. Customer understanding of EE appliance use effect on utility bills
8. Coordination quality between OBG and HEES

Advancement of CEESP
The IMO program advances the following strategies:
<u>IDSM</u>
1-1 Carry out integrated marketing of DSM opportunities across customer classes.

<u>Residential</u>
2-2, Promote effective decision-making to create widespread demand for energy efficiency measures
3-2, In coordination with 2.2 develop public awareness of and demand for highly efficient products.

<u>Low income Residential</u>
1-1, Strengthen LIEE outreach using segmentation analysis & social marketing tools
1-3, Improve program delivery

2-2. Coordinate and communicate between LIEE energy efficiency and DSM programs to achieve service offerings that are seamless for customer.
2.4, Identify segmented concentrations of customers to improve delivery.

ME&O strategies:

1-2, Develop an integrated marketing plan for all Californians
1-3, Use social marketing techniques to build awareness, change attitudes and induce action.
1-4, The program has a website that can link to the CA EE web portal.

SCE and SCG

Community Language Efficiency Outreach (CLEO), existing third party
SCE-TP-004: **Total Preferred Budget:** $4,760,000
SCG 3P-Res05: **Total Preferred Budget:** $701,595.81

CLEO is a targeted in-language residential ME&O and training program for Vietnamese, Indian, Chinese and Korean (VICK), Hispanic and low income African Americans that is implemented by SCE and SCG. This program was implemented in 2006-8 and is the same program with some changes for 2009-011. These changes include the inclusion of the Hispanic and low-income African American communities, as well as, including in-language HEES surveys. The program will now include all of SCG territory and not be limited to that which overlaps with SCE. Therefore, the program area now includes customers from LADWP, Anaheim, Pasadena, Glendale, Burbank and Riverside. The counties covered include: Los Angeles, San Bernardino and Orange, and for SCE it includes the cities of Monterey Park, San Gabriel, Alhambra, Walnut and Diamond Bar. The program aims to target these ethnic populations that fall under the hard to reach, low and medium income brackets.

The program, implemented by Global Energy Services, deploys several in-language services including residential classroom style seminars, short in-home energy audits, community booths, toll-free hotline, and a website. They will market these services through in-language print, radio and television ads, as well as CBOs. They will offer also a school program for interested schools that is aimed to education students and their families, as well as offer seminars at religious congregations, other faith-based organizations and senior centers. The program will collaborate with the LIEE programs and inform potential qualifying customers of the LIEE programs.

The program may include pilot outreach program for small businesses run by these same ethnic communities. The pilot will include an energy audit and information on how to qualify for SCE's small business programs.

ED Findings
Both IOUS could link the CLEO's website to FYP's website, as well as to the EE portal when operational. The CLEO website could link also to SCE and SCG's LIEE webpage, and to SCE's Online Buyer's Guide. For SCG only, the CLEO and PACE programs are very similar in approach, target audience and outreach area. The areas of overlap with target audience include residential customers: Chinese, Korean, Hispanic, and Vietnamese. The territory overlap includes: Los Angeles and Riverside counties. It would be useful to know how the implementers will ensure that the programs will avoid duplication and not cover the same ethnic communities, outreach events, etc. in areas of Southern California where the two programs operate simultaneously.

Advancement of CEESP
The CLEO program advances the following strategies:
Residential
2-2, Promote effective decision-making to create widespread demand for energy efficiency measures
3-2, In coordination with 2.2, develop public awareness of and demand for highly efficient products.
3-3, Create demand for such products through market transformation activities

Low income Residential
1-1. Strengthen LIEE outreach using segmentation analysis & social marketing tools
1-3, Improve program delivery
2-2. Coordinate and communicate between LIEE energy efficiency and DSM programs to achieve service offerings that are seamless for customer.
2.4. Identify segmented concentrations of customers to improve delivery.

IDSM
1-1 Carry out integrated marketing of DSM opportunities across all customer classes

WE&T
2-1, This strategy is partially covered in CLEO, namely, increasing participation from within minority, low-income and disadvantaged communities in achieving CA's economic energy efficiency potential.

ME&O strategies:
1-2, Develop an integrated marketing plan for all Californians.
1-3, Use social marketing techniques to build awareness, change attitudes and induce action.
1-4, The program has a website that can link to the CA EE web portal

SCG

Summary: PACE, Energy Efficiency Ethnic Outreach, 3P-Xc-06, existing & revised
Preferred Budget: $3,661,437

PACE is a targeted in-language residential and small commercial ME&O and training program for Vietnamese, Chinese and Korean, Filipino, and Hispanic communities. This program was implemented in 2006-8 and is the same program with some changes for 2009-011. These changes include the inclusion of the Filipino community, as well as an expansion in program territory. The program will now include all of SCG territory in the counties of Los Angeles, Riverside San Bernardino, Ventura and Orange. The program aims to target these ethnic populations that fall under the hard to reach, low and medium income brackets.

The program, implemented by Pacific Asian Consortium in Employment (PACE), aims to implement a comprehensive program of EE outreach, education utilizing in-language and culturally appropriate outreach methods residents and small businesses. The goal of the program is to increase awareness and knowledge of EE action and opportunities in these targeted communities. The program deploys several in-language services including community events in five counties, conduct workshops & presentations on simple EE low or no cost

practices, develop and implement EE education business programs for nursing, hospices and convalescent home that are owned and operated by these community members. create in-language outreach collateral, distribute EE information and EE kits (faucet aerators, low flow showerheads) and home hard copy and online surveys at community events, garner earned media in ethnic media outlets, coordinate energy audits and the use of SCG;s ERC test kitchen center, conduct food service seminars, and assist customers in enlisting them into other EE programs. The implementers will use print, TV and internet channels in ethnic media to inform customers of the program.

ED Findings: SCG could link to the PACE website to the FYP website. The PACE website could link also to SCG's LIEE webpage and to the EE portal when operational. The PACE and CLEO programs are very similar in approach, target audience and outreach area. The areas of overlap with target audience include residential customers: Chinese, Korean, Hispanic, and Vietnamese. The territory overlap includes: Los Angeles and Riverside counties. It would be useful to know how the implementers will ensure that the programs will avoid duplication and not cover the same ethnic communities, outreach events, etc. in areas of SoCal where the two programs operate simultaneously, if indeed avoiding overlap is an intention of the programs.

Advancement of CEESP
The PACE program advances the following strategies:

Residential
2-2, Promote effective decision-making to create widespread demand for energy efficiency measures
3-2, In coordination with 2.2, develop public awareness of and demand for highly efficient products.

Low income Residential
1-1, Strengthen LIEE outreach using segmentation analysis & social marketing tools
1-3, Improve program delivery
2-2. Coordinate and communicate between LIEE energy efficiency and DSM programs to achieve service offerings that are seamless for customer.
2-4, Identify segmented concentrations of customers to improve delivery.

Commercial
2-5, Develop tools and strategies to use information and behavioral strategies, commissioning and training to reduce energy consumption in commercial bldgs.

WE&T
2-1. This strategy is partially covered in CLEO, namely, increasing participation from within minority, low-income and disadvantaged communities in achieving CA's economic energy efficiency potential.

ME&O strategies:
1-3, Use social marketing techniques to build awareness, change attitudes and induce action.
1-4. The program has a website that can link to the CA EE web portal.

Workforce Education & Training: Programs Summary

I. Statewide WE&T Program

Total Budget: $113,952,435

Budget Summary

All IOUs	Total	Centergies	Connections	Planning
Preferred	$113.952,435	$84,103,039	19,783,025	10,066,368

SCE	Total	Centergies	Connections	Planning
Preferred	$38,869,000	$26,334,000	$9,056,000	$3,479,000

PGE*	Total	Centergies	Connections	Planning
Preferred	$48,284,543	$36,398,976	$6,863,755	$5,022,711

SDGE	Total	Centergies	Connections	Planning
Preferred	$15,114,103	$12,432,056.	$1,873,390	$808,657

SCG	Total	Centergies	Connections	Plan
Preferred	$11,683,887	$8,938,007	$1,989,880	$756,000

The SW WE&T Program contains three sub-programs: 1. WE&T Centergies, 2. WE&T Connections, 3. WE&T Strategic Planning

The Statewide IOU WE&T Program represents a portfolio of education, training and workforce development planning and implementation subprograms and components. SW WE&T will collaboratively create a comprehensive training platform that integrates existing workforce skills with new workforce needs, as well as expand outreach efforts to increase awareness and demand for green careers. The SW WE&T is composed of three subprograms that have the collaborative goal of establishing energy efficiency and demand side management education and training at all levels of California's educational system. Each subprogram covers different aspects of WE&T ranging from comprehensive market actor training to career development to K-12 curriculum based energy efficiency education. Each sub-program has distinct target audiences with WE&T elements are geared to those audiences. In brief, the WE&T Centergies is largely focused on the IOU Energy Centers & the Building Operator Training; WE&T Connections is mainly focused on higher-level adult education (colleges, universities, trade schools), K-12 and communities; and the WE&T planning is focused on the implementation of key strategic plan objectives (needs assessment, web portal, task force)

SW program direction:
IOUs collaborated to adopt the same WE&T structure that SCE proposed in the June 08 filing. This adoption includes the 3 sub-programs, one focused on market actors and career training, one focused on energy education in universities, colleges and K-12, that also includes aspects

of career building, and a third focused on strategic plan implementation. See descriptions below:

Summary of WE&T Centergies Sub-program:
Total Budget: $84,103,039

This sub-program represents the largest component of the WE&T program. This sub-program is generally organized around market sectors and cross-cutting segments to facilitate workforce education and training appropriate to achieve the energy savings, demand reductions and related energy initiatives required of the IOUs. Energy Centers represent the largest component of this sub-program, and have for many years provided WE&T curriculum and related deliverables – training courses, seminars, workshops, clean energy technology demonstration, equipment efficiency testing, interactive training exhibits and lectures. These components promote industry trends and developments for advancing energy efficiency as a professional discipline. Training topics include facility electrical, HVAC, and lighting systems, indoor air quality, environmental health and safety and energy conservation. IOUs have significant experience in this area. This was a statewide program in the 2006-08 program cycle.

The Centers also deliver integrated energy efficiency, demand response and renewable energy program offerings.
The IOU Centers are as follows"

- SCE_ Customer Technology Application Center (CTAC), Agriculture Technology Application Center (AgTAC)
- PGE: Pacific Energy Center, Food Service Training Center, Energy Training Center
- SDGE: Energy Resource Center
- SCG: Energy Resource Center

The common Center elements include:
• Educational seminars
• Technical consultations
• Outreach efforts
• Food Service Test Protocols
• Tool Lending Libraries
• Educational Partnerships
• Support and collaboration with HVAC industry
• Energy Design Resources integration and collaboration

Another major component of this subprogram is the Statewide Building Operator Certification (BOC) Training Program. The 2006-08 BOC combined SCE and PGE budget was $2,3 million. The BOC continues to play a major role in improving and maintaining California's energy efficient, or green collar, workforce by building the workforce stock of building engineers, stationary engineers, maintenance supervisors, maintenance workers, facility coordinators, HVAC technicians, electricians, and others in the facility operation and maintenance field. Operators earn certification by attending training and completing project assignments in their facilities.

WE&T Connections
Budget: $19,783,025

This sub-program focuses on education curriculum and related activities that inspire interest in energy careers, new and emerging technology, as well as, future EE skill development. IOUs will work with education institutions, labor and communities to promote interest in green careers by K-12, community college, occupational, vocational, and major university students, as well as assist in the growth of low-income and transitional workforce-targeted clean energy training programs.

The program components promote green careers to K-12, Community College and University students through energy and environmental curriculum, college credit courses at high schools, college degree programs, and job shadowing and internships. The IOUs and/or third party vendors will work with State Department of Education (Curriculum Commission) as well as County Department of Education to be included in curriculum development advisory boards with the purpose of developing K-12 curriculum that includes the science of energy, energy efficiency and green careers. The IOUs also will work with the UC Office of the President of Academic Affairs and the CSU Office of Degree Programs and Educational Opportunities to:

1) Promote energy minor or major degree programs,
2) Collaborate and/or provide expertise in the development of complementary new and revised courses that will form a comprehensive integrated approach to energy education.
3) Consult with campus-specific administrators to define additional courses needed to meet the growing need for graduates with skills in energy efficiency and related fields. Throughout the process, they will also work to incorporate and promote a green career path.

This sub-program also will educate students on energy, water, renewable energy, demand response, distributed generation, as well as, the impact of greenhouse gases, with the goal of influencing day-to-day decisions of students and their households. In addition, the programs will educate K-12/community colleges/universities on the benefits of adopting energy efficiency and demand response policies/measures at their facilities.

WE&T Connections program offers five energy education program components, all of which strive to integrate the science of energy, energy efficiency, water conservation, renewable energy, demand response, distributed generation, greenhouse gases. They include: Green Campus; PEAK, Energenius, LivingWise, Green Schools

WE&T Planning
Total Budget: $10,066,368

The WE&T Planning sub-program involves management and execution of several strategic, statewide planning tasks and project implementation actions initiated by the Strategic Plan. The tasks and projects are seen as instrumental in delivering mechanisms and protocols that facilitate ongoing momentum and focus on the achievement of workforce, education and training long-term goals. The WE&T Planning sub-program facilitates implementation of the four key strategic tasks, these include:
• Forming an IOU/CPUC WE&T Task Force
• Conducting a Needs Assessment
• Creating a WE&T Specific Web Portal, and
• Facilitating bi-Annual WE&T Public Workshops.

Pilot Programs
There will be five pilot programs within the statewide WE&T program. Three of these pilot programs will be administered through the PGE Centergies sub-program via the existing training

series and will be geared to developing a process to estimate savings from these (see below) WE&T program components. The other two pilot components will be administered through the Connections program and will be geared toward linking K-12 level education to community/adult education and other higher education institutions. In addition, they aim to create better linkages to community based educational programs.

The pilot programs are as follows:

WE&T Centergies	WE&T Connections
1. Building Commissioning Workshop Series	1. Green Pathways
2. Residential HVAC Seminars	2. Green Training Collaborative
3. Comprehensive Evaluation of Food Svc. Center	

Several areas of the March 2nd filing have been revised to incorporate earlier PUC staff input and feedback to better address initial shortcomings:

1. All K–12 programs have incorporated science based greenhouse gas and renewable energy components into their existing curricula. These revisions make the K– 12 strategy particularly strong.
2. Where curriculum development efforts were weak at the community college / adult education level in the initial PIP descriptions, revisions have been made to include these elements even if vague.
3. An effort to link energy center efforts to community level educational programs is described, but further development would strengthen this strategy.

Major Information Omissions:

No major information omissions at this time.

There remain areas of the PIPs that would benefit from additional revisions and modifications:

1. While the PIP describes an intention of partnering with educational institutions to develop green career curricula within the community colleges, adult education, and institutions of higher education, this description is weak and non-specific. This effort may be strengthened if a similar path is instituted toward partnering with educational administrators at the community college/adult education, similar to the approach currently proposed in the K–12 educational sector.
2. The plan to market and provide outreach to high school students to steer them toward new green educational programs could be strengthened. The planned pilot “Green Pathways” as described in the PIP serves as an acceptable model for expanding, on a broader level, this outreach support for new and developing educational programs.
3. While there is a brief description for how the energy centers will be used to help facilitate local community outreach efforts, the detail is lacking for how the centers will be leveraged for this goal. The PIP would be strengthened if IOUs included specific examples of community based organizations (CBOs) they will partner with to provide this level of outreach (ex: “Rising Sun is a CBO that trains youth in low income communities to perform energy audits within their neighborhoods”).
4. The PIP describes pilot programs that include the goal to quantify energy savings resulting from WE&T programs. Clarifying that ED staff and current 2006-08 program evaluators will be involved in evaluation methodolgy discussions with the IOU evaluation team to assess proposed evaluation methodologies for the pilot program within the PIP would

provide a desription for how this process would evolve via a tranparent process. The current evaluators have insight on methodology and attiribution issues that can lend value to the IOU pilots.

5. Inclusion of specific program metrics such as the number of school IOUs aim to enlist in the various Connections components, the number of students and their families, the number of audits and measures installed in universities through the program components, and the number of energy kits sent out, etc. in the context of overall portfolio market transformation goals would provide measurable data for which the program can be designed around.

Advancement of CEESP:
The following CEESP strategies are advanced by SW WE&T:

WE&T

1.1 Define, initiate and drive long term WE&T development and strategic planning, including identification of funding streams and market sector specific needs—*covered by WE&T Planning sub-program.*
ED Staff Note: While for the most part this strategy is addressed, additional efforts to identify funding streams potentially available from other sources will need to be pursued once partnerships are formed.

1.2 Support the community college and adult education to support students to develop their education based on visible career paths in EE and related fields—*covered by WE&T Connections & Centergies.*
ED Staff Note: Some effort is made to help identify career paths into green collar jobs at the community college and adult education levels. Additional efforts are needed to fully develop these pathways and work with school administrators to develop comprehensive curricula to help achieve these goals.

1.3 Incorporate EE and demand side energy management into traditional contractor and technician training (plumbers, electricians) and expand training resources to produce a target numbers of training workers—*covered to a limited extent by WE&T Centergies.*

1.4 Create or expand college and university programs with EE focus and foster green campus efforts apply this knowledge in clear view of students and faculty—*covered in WE&T Connections.*

1.5 Develop K-12 curriculum to include EE fundamentals and identify career options in energy-related fields.—*covered by WE&T connections.*

Low Income Residential

1.4 Promote the growth of a trained LIEE workforce—*covered by WE&T Centergies and Connections.*

HVAC

2.3 Develop and provide expanded QI/QM training for contractors, technicians and sales agents—*covered by WE&T Centergies.*

Commercial

2.3 Ensure compliance with minimum Title 24 codes and standards for building renovations and expansion—covered by WE&T Centergies

2.5 Develop tools and strategies to use information and behavioral strategies, commissioning, and training to reduce energy consumption in commercial buildings-- covered by WE&T Centergies

Summary of IOU provision of baseline, market transformation and quantitative target information:

Some quantitative targets were provided for the number of Energy Center classes and trainings, as well as the number of BOC trainings. Quantitative targets for WE&T Connections were provided such as the number of "green careers" and number of students reached resulting from WE&T efforts. There is also a small amount of data such as having 50% of their target schools include low income communities. The numbers used do not include clear description of how they were derived or how, if these goals are met, they will advance market transformation milestones. A contextual description to provide a better understanding of how these numbers were derived would be helpful.

The proposal could have provided data for the number of school IOUs aim to enlist in the various Connections components, the number of students and their families, the number of audits and measures installed in universities through the program components, and the number of energy kits sent out, etc.

Performance Metrics:
These metrics are applicable if program objectives are aligned with the metrics. All are measurable and could be an outcome of the program. See below for some examples.

- Percentage of those targeted and exposed to the program reported energy saving practices as a result of the program.
- Number of participants in each class.
- Incremental change energy saved as a result of the program.
- Gross level direct energy saving behaviors taken by those who received education or "treatment" through the program.
- Percentage of participants fed into resource programs, and which programs were promoted.
- Percentage of students that went on to pursue either more courses related to energy careers or actual positions in green energy jobs.

As with market transformation goals and baseline data above, this PIP would be improved with specific keystone goals that could be developed for how to incorporate curricula and higher educational partnerships that result in actual accredited green career programs at the community college and adult education level. One major gap is that the WE&T Connections PIP did not supply quantitative targets. The proposal could have provided data for the number of school IOUs aim to enlist in the various Connections components, the number of students and their families, the number of audits and measures installed in universities through the program components, and the number of energy kits sent out, etc. used to develop accredited curricula to promote this keystone metric and goal. As described in the WE&T Statewide PIP, PEAK and Energenius program implementers will work with school district representatives, such as principals, to explain the curricula and plan a customized program for their schools. Teachers are then trained through hands-on lab activities and tool kits at a prescheduled conference.

Teacher then work with the developed educational material to train students. These applied curricula are tailored to meet and satisfy educational standards.

Summary of IOU Third Party WE&T programs

PGE

Green Building Technical Support Services (GBTSS)
PGE 2241 **Budget: $1,812,306**

1. Summary
The Green Building Technical Support Services program is a continuing 2006-08 third party program that promotes green building practices with an emphasis on energy efficiency in new and existing homes. The program's target audience is building professionals including: builders, developers, architects, contractors, residential home builders/remodeling contractors, affordable housing professionals, real estate professionals, suppliers, and homeowners. The program is implemented by Build it Green, a professional non-profit organization. Build it Green's mission is to promote healthy, energy and resource efficient building practices in California. The program offers several training and technical services including: Ask an Expert hotline, Green Product Directory, project specific technical support, information tables, Green Home tours, product and materials recommendations, contractor referrals and presentations at professional conferences. The program promotes PGE initiatives and incentives, including RNC and whole house solutions to green building professionals.

Possible Modifications:
Going forward, this program offers some valuable services to building professionals, especially in ZNE areas. The PIP could highlight areas where there will interaction or an intercept with other PGE residential and commercial programs. The PIP indicates that the program will post job opportunities to the WE&T portal, but there are other existing programs and channels with which it could specify interact and collaborate, such as in ZNE pilots and other WE&T trainings.

Advancement of the CEESP:
The GBTSS program advances the following CEESP strategies:

Res. ZNE 1-5: encourage local, regional and statewide leadership groups to support pilots, and foster communication among pioneering homeowners and builders.

Res Existing, 2-1: Deploy full scale whole house programs.
2.2 Promote effective decision making to create widespread demand for energy efficiency measures
3.2 In coordination with 2.2.develop public awareness of and demand for highly efficient products

IOU Provision of Quantitative Target Information:
No quantitative data was provided. The program implementer should be asked provide quantitative data for trainings, Council support to "green home" tours, consultations, conference presentations, etc.

Performance Metrics for Non-resource Programs:

- Percentage of those targeted and exposed to the program reported behavior change as a result of the program.
- Reach of the program, including the diversity of market actors.
- Incremental change in awareness of energy saving opportunities as a result of the program.
- Gross level direct energy saving behaviors taken by those who received education or "treatment" through the program.
- Percentage of participants was fed into resource programs, and which programs were promoted.

SDGE

K-12 Energy Efficiency Education, 3P-Res04
Preferred Budget: $1,728,663
This program is designed to educate students about energy with an emphasis on EE. The program's target audience is students, teachers and the student's family. The program aims to educate these groups about cost savings opportunities available through behavior changes on energy use. Over the 3 year cycle the program is aiming to enlist over 2200 schools in the SDGE service area.

The program also deploys a peer to peer education approach where teachers will be trained about energy conservation and related curriculum. Those teachers will in turn train other teachers in this subject. The curriculum is targeted to grades 1, 4, 6 and high school students.

Possible Modification:
The program could include a marketing or outreach plan detailing how they will enlist and promote the program to specific schools.

Advancement of the CEESP:
The following strategies are covered in this program
WE&T
1.5, Develop K-12 curriculum to include EE fundamentals, support outreach into K-12 schools on energy, water, and environmental issues.

IOU provision of Quantitative Target Information:
PIP did provide quantitative data on the number of teacher trainings, students reached, schools to be enlisted, etc.

Performance Metrics for non-resource programs:
- Percentage of those targeted and exposed to the program reported behavior change as a result of the program.
- Reach of the program, including the diversity of market actors.
- Incremental change in awareness of energy saving opportunities as a result of the program.
- Gross level direct energy saving behaviors taken by those who received education or "treatment" through the program.
- Percentage of participants was fed into resource programs, and which programs were promoted.

IOU Statewide Codes and Standards Program

Summary of IOU budgets for Statewide C&S programs

IOU & PIP #	Program Name	Budget	ED Findings
PGE 2107	Codes and Standards	$19,305,853	In their preferred scenarios, the IOUs included savings estimates for C&S based on proposed policy changes that are not consistent with current policy. Not accepting these proposals reduces the total savings for the C&S SW program.
SCE- SW-008	Codes and Standards	$11,080,000[21]	
SDG&E	Codes and Standards	$4,500,000[22]	
SCG	Codes and Standards	$3,000,000[23]	
Total SW C&S		**$37,885,853**	

1. **Summary of C&S Program**
   The statewide Codes and Standards Program has four subprograms including:
   1) **Building Codes**: Advocacy, Extension of Advocacy (EOA) and CASE Studies (Existing)
   2) **Appliance Standards**: Advocacy, Extension of Advocacy and CASE Studies (Existing)
   3) **Compliance Enhancement** (CE): Measure-Based and Holistic (New)
   4) **Reach Codes** (RC): Local Government Ordinances and Green Building Standards (New)

   For brief description of the subprograms refer to Attachment II.

[21] Not provided in the PIP but based on the budget table submitted by SCE http://www3.sce.com/sscc/law/dis/dbattach7.nsf/0/31493C24285647F08825757700763034/$FILE/A.08-07-021+Energy+Efficiency+Exhibit+(SCE-2+Attachment+A).xls

[22] Not provided in the PIP based on Appendix F of SDG&E March 2009 Filings.

[23] Not provided in the PIP based on Appendix F of SCG March 2009 Filings.

2. ED Findings

- The IOUs proposed changing the methodologies for counting savings associated with the Codes & Standards program. The recent Policy Decision did not find those changes acceptable.

- The IOUs filed a consistent Statewide C&S proposal across all IOU

- The filed C&S program aligns program goals with CEESP goals and includes specific strategies to meet these goals

- The C&S program PIP changed significantly since the July 2008 filings. The PIP *added:*
  → Two new sub-programs on Compliance Enhancement Program and the Reach Codes Program.
  → Improved defined program goals, objectives and strategies to address the CEESP goals.
  → Logic models of the various subprograms including market transformation milestones, performance indicators, and quantitative targets.

- Cost/savings of program
  → The IOUs proposed to claim savings from certain program activities that are not consistent with current CPUC policy. Adjusting the IOU savings to conform with current policy, **reduces the total IOU C&S projected energy savings (kWh) by 44%, demand savings (kW) by 49%, and therm savings by 35%.** Refer to Attachment I for details.

- Performance Metrics
  The IOUs provided many measurable metrics & milestones in the C&S PIP. The PIP also includes a list of potential indicators associated with the logic diagrams of the C&S subprograms.

- Missing Information at time of review (March 2009):
  → Energy Savings and Budget in SDG&E and SCG PIP are missing; SDG&E and SCG savings numbers in Appendix F do not match the numbers given in PG&E C&S PIP
  → SCE PIP missing detailed energy Savings and budget (savings are total and do not match the tables provided in PG&E C&S PIP)
  → Program Numbers are missing from SDG&E and SCG PIPs

3. Comments and Questions

- **<u>Compliance Enhancement Program</u>**:
  The IOUs propose to claim savings from compliance enhancement program (CEP) and not treat it as an information program.

  a. ED suggests that IOUs should ensure that their activities in CEP *only* target T-24 and T-20 measures for which the IOUs did not and will not include in their pre-2006 and post 2006 codes and standards advocacy work (i.e. CASE

studies) to avoid double counting of savings resulting from compliance enhancement work that is covered under these two program activities.

b. In PG&E's current filing, the energy savings resulting from the CEP component are not included, but the budget amount is included. The CEP program component accounts for about 6% of the total PG&E C&S projected program budget, which leads ED to assume that the energy savings associated with those activities might be relatively small compared to the rest of the program activities. Hence, considering the amount of savings and budget allocated to CEP, it may be cumbersome (both complex and costly) to administer full EM&V (including establishing baseline, performing field work, determining attribution) for this program component.

→ *Consideration may be warranted to evaluate IOUs on their efforts associated with the CEP subprogram based on performance metrics and accomplished milestones other than energy savings.*

- **Reach Codes**:
  The IOUs propose that they should be able to claim energy savings that result from their activities associated with the Reach Codes subprogram.

  a. It may be reasonable that savings resulting from completed projects that *do not* participate in an incentive or rebate program might be claimed by *either* the C&S program *or* Local Government Partnership programs.

  b. PG&E did not include estimates of energy savings from "Reach Code Subprogram" in its filings, but included a proposed budget which accounts for about 7% of the overall PG&E C&S program budget. This leads ED to assume that the energy savings associated with those activities might be relatively small compared to the overall program savings and hence may not warrant the high cost and effort associated with full EM&V activities such as establishing a baseline, conducting field work, and determining attribution. The savings associated with Reach Codes subprogram might be "deemed", pending verification (calculation adjustments) by an independent evaluation entity.

  c. The IOUs are proposing under the C&S Reach Codes subprogram to claim savings to the extent that they are involved with the development and deployment of voluntary programs such as LEED and Collaborative for High Performance Schools (CHPS). ED suggests that these activities associated with such voluntary programs should be implemented associated with their New Construction Programs.

- **Definition of Gross Savings and Savings from Non-IOU Territories**:
  IOUs propose to count advocacy savings in non-IOU territories and redefine gross savings from C&S to include energy savings resulting from IOU efforts to adopt statewide energy efficiency standards. These proposals demand closer scrutiny.

Attachment I
Energy Savings Analysis

Table (1) shows the IOU projected energy savings for 2009-2011 associated with the Statewide (SW) C&S programs[24]; this includes projected savings from the following:

- 100% of pre-2006 C&S Advocacy. This is *non-compliant* with the current policy which directs the IOUs to count only 50% of pre-2006 advocacy work toward meeting the 2009-11 energy goals.
- 100% of post-2006 C&S advocacy
- Advocacy savings in Municipal and Irrigation Districts (i.e. non-IOU service territory). This is *non-compliant* with the current policy which only allows for counting savings in IOU service territories
- The savings resulting from Compliance Enhancement and Reach Codes Subprograms are left blank in the IOU C&S program implementation plans (PIP).

Tables (2) shows the breakdown of the IOU projected energy savings resulting from the SW C&S program activities associated with their pre-2006 C&S Advocacy program (claim is 100% of savings). Table (3) shows the breakdown of the IOU projected energy savings resulting from the SW C&S program activities in non-IOU territories (Municipal and Irrigation Districts).

Table (4) shows the adjustment to follow the policy rules, i.e. discounting the pre-2006 savings by 50% and removing the savings in non-IOU territories. With these adjustments the total IOU C&S energy savings (kWh) will be reduced by 44%, demand savings (kW) by 49%, and therm savings by 35% of the IOU total program projected energy savings.

Table 1: IOU projected total energy savings from the SW C&S program (2009-2011)

Codes and Standards	Three Year EE Program Gross kWh Savings	Three Year EE Program Gross kW Savings	Three Year EE Program Gross Therm Savings
PG&E	1,038,366,391	189,811	8,153,037
SCE	2,556,620,812	493,614	0
SCG	0	0	38,410,916
SDG&E	580,172,205	112,016	2,726,126
Total IOU Projected Savings from C&S	4,175,159,408	795,441	49,290,079

[24] PG&E 2009-11PIP-March 2009

Table 2: Breakdown of IOU projected energy savings related to Pre-2006 C&S program activities

Pre 2006 savings	Three Year EE Program Gross kWh Savings	Three Year EE Program Gross kW Savings	Three Year EE Program Gross Therm Savings
PG&E	406,464,786	94,028	6,058,813
SCE	1,176,834,457	266,355	0
SCG	0	0	25,210,542
SDG&E	267,058,235	60,444	1,789,260
Total IOU projected savings from pre-2006 C&S program activities	**1,850,357,478**	**420,827**	**33,058,615**
Savings from pre-2006 C&S activities as a percent of the total C&S program savings	**44%**	**53%**	**67%**

Table 3: Breakdown of the projected energy in Non-IOU Territories

Savings in Municipal and Irrigation Districts	Three Year EE Program Gross kWh Savings	Three Year EE Program Gross kW Savings	Three Year EE Program Gross Therm Savings
PG&E	229,983,642	42,041	80,038
SCE	566,255,774	109,329	0
SCG	0	0	377,078
SDG&E	128,500,034	24,810	26,762
Total IOU projected savings from non-IOU territories	**924,739,450**	**176,180**	**483,878**
Savings in municipal and Irrigation districts as a percent of the total C&S program savings	**22%**	**22%**	**1%**

Table 4: Energy Division adjusted IOU projected energy savings: energy savings adjusted to 50% of savings from pre-2006 C&S program activities and deducting the savings associated with non-IOU territories

	Three Year EE Program Gross kWh Savings	Three Year EE Program Gross kW Savings	Three Year EE Program Gross Therm Savings
PG&E	605,150,356	100,756	5,043,593
SCE	1,401,947,810	251,108	0
SCG	0	0	25,428,567
SDG&E	318,143,054	56,984	1,804,734
Total Energy Division adjusted projected savings	**2,325,241,219**	**408,848**	**32,276,894**
Savings after adjustment as a percentage of the IOU projected total C&S savings	**44%**	**49%**	**35%**

Attachment II

Summary of SW Codes & Standards Sub-Programs

1) Building Code and Appliance Standards Extension of Advocacy (EOA) and CASE Studies-- Subprograms (1) & (2)

Building Code (Title 24) and Appliance Standards (Title 20) advocacy, EOA and CASE studies activities constitute the bulk of the C&S program activities where about 80% of the total program budget is attributed to these subprograms.
EOA efforts are carried out to improve the rate-of-compliance with Title 24 and Title 20 as inputs to savings calculations for standards adopted as a result of the C&S Program.

2) Compliance Enhancement (CE) Subprogram

The CE subprogram primary purpose is to increase the number of customers complying with code (non-CASE studies code). This subprogram includes two elements:

a) *Measure-specific* includes measures for existing regulations not adopted as a result of the program i.e. non CASE studies measures.

b) *Holistic* element of the CE subprogram supports proactive building departments that seek general improvements to operations and compliance improvement processes. The holistic element will be implemented initially as a ***pilot*** program. The IOUs anticipate working with approximately *twelve* building departments collectively to develop process improvement interventions including, but not limited to, role-based training and tools customized in accordance with program theory by market actor type and jurisdiction. The Program will work with California Building Officials (CALBO), CEC, and local government partners to encourage other jurisdictions to adopt successful practices and tools identified during the pilot. By encouraging more jurisdictions to use the same or similar processes, tools and forms where possible, compliance will be simpler for market actors, as enforcement will become more consistent.

3) Reach Codes Subprogram

The Reach Codes subprogram will develop and/or support the development of reach codes, or locally adopted ordinances, that exceed statewide minimum requirements. Reach codes are typically codes adopted by local governments and provide a means to test new codes as well as testing the efficacy of increasing the stringency of existing codes at a local level prior to disseminating the code on a statewide basis. The main activities of the program are to:

(1) Encourage all local governments to first optimize compliance with existing codes. The reach code subprogram is designed to facilitate mutual support from the utilities and local governments to realize the full savings potential from codes, both statewide, and at a local level. The IOUs will request that prior to adopting any new codes, building department staff attend role-based training as well as relevant measure-specific training (HVAC replacements, controls under skylights), and to identify, implement and document ***two actions*** designed to increase compliance.

(2) Coordinate development approach between local governments to reduce the wasted energy and cost resulting from duplication of efforts, provide better staging

for statewide adoption, leverage for local governments to encourage adoption, and increases the likelihood of adoption and compliance.

(3) Work with interested local governments as well as others including, but not limited to, IOU voluntary rebate programs, CEC, Building Standards Commission, the Local Government Commission (LGC), IOU green or sustainable communities programs, regional local government associations, and organizations that promote green building rating systems, to identify characteristics of reach codes that meet the needs of the majority of jurisdictions. The IOUs will then *develop a package of climate-zone based reach codes for both new construction and existing buildings (at time of sale)*. The IOUs will submit the package to the CEC to obtain pre-approval as required to eliminate local government development costs and facilitate subsequent adoption of the code(s).

At present, there are approximately a dozen local jurisdictions with reach code ordinances surpassing Title 24-2005 approved by the CEC, all of which are different. Going forward, there is an opportunity to develop a pre-approved reach code based upon surpassing Title 24-2008. Reach codes may also include codes targeting government-owned buildings or particular activities such as commissioning.

The IOUs are also proposing to work with various agencies such as school districts, colleges, universities, and industry groups are adopting reach-code policies. Examples include

- CHPS (Collaborative for High Performance Schools) as adopted by school districts
- Green building requirements adopted by the UC, CSU, and community college districts
- LEED and GreenPoint Rated as adopted by various agencies, builders and jurisdictions
- ASHRAE Standard 189: High Performance Green Buildings, is expected to be adopted by agencies and local jurisdictions

In many cases, the IOUs were involved in the development, adoption, and deployment of these reach code programs.

Going forward, the C&S Program will be working on the development of new and updated reach code rating systems, standards, guidelines, most of which be based upon the new Title 24-2008. These reach code programs are expected to be adopted and implemented with the support of the IOU C&S Program by various agencies, institutions, and building associations. Although there have been cases where the mere adoption of reach code programs have little to no impact, there have been a number of cases where significant savings have been verified.

Energy Division has a detailed analysis of the SW Codes & Standards Program that indicates which CEESP strategies are advanced by the various sub-programs, and which provides market transformation planning milestones and other measurable objectives for the program. We can provide this upon request.