ATTACHMENT A

ENERGY DIVISION PROPOSAL FOR 2013-14 ENERGY EFFICIENCY GOALS

I. Summary:

This proposal responds to the Assigned Commissioner's October 25, 2011 ruling and scoping memo, which directed Energy Division staff to prepare recommendations for energy efficiency (EE) goals for the 2013-14 transition period. As guiding principles, Energy Division staff recommends that 2013-14 goals remain consistent with past decisions. Specifically, goals should: 1) be aggressive yet achievable;[1] 2) support long-term planning;[2] 3) encourage a focus on long-term savings;[3] and 4) be based on the best available data.[4]

Energy Division contracted Navigant Consulting to update EE goals pursuant to D.08-07-047, Ordering Paragraph (OP) 5 and OP 7. The 2011 potential study developed to support the goals update was issued in a Administrative Law Judge ruling dated November 17, 2011. For the 2013-14 period, Energy Division staff recommends the following:

1. Use the 2011 potential study and codes & standards advocacy savings estimates as the basis for goals;
2. Separate targets for Codes and Standards (C&S), IOU programs, and emerging technologies;
3. Goals applied on a gross basis per current policy; and
4. Annual and cumulative goals, with cumulative goals including recovery of savings lost from decay of past EE activities, but not recovery of unmet goals prior to 2010.

II. Background:

The Commission first established goals in D.04-09-060 to set expectations for energy savings that would be "appropriately aggressive"[5] and meet the intent of the Energy Action Plan,[6] which established EE and demand response (DR) as California's resources of first choice. In that first goals decision, goals were set as "stretch goals."[7] In D.07-09-043, these stretch goals later became the Minimum Performance Standard for the Risk Reward Incentive Mechanism (RRIM) upon which the IOUs were allowed to make an earnings claim based on achievement of the goals. The goals adopted in D.04-09-060 are the current goals in effect for the 2010-12 portfolio cycle. They were adjusted in D.09-09-047, with a 5% reduction applied to Total Annual

[1] D.04-09-060, p.3
[2] D.04-09-060, p.35
[3] D.07-10-032, p.5
[4] D.08-07-047, pgs.18-19
[5] D.04-09-060, p. 3
[6] The Energy Action Plan was adopted in May 2003 and updated in February 2008; available at http://www.cpuc.ca.gov/PUC/energy/Resources/Energy+Action+Plan/
[7] D.04-09-060, p. 3

Electricity Savings (GWH/yr) and 1% reduction to Total Annual Peak Savings (MW)[8] in order to account for the changes in EE potential, as further described below. Table 1 presents the current EE goals for 2012-2013.[9]

Table 1. Current 2012-2013 IOU specific Goals adopted in D.04-06-090 (as modified by D.09-09-047 for 2012)

	PG&E		SCE		SoCalGas		SDG&E	
	2012	2013	2012	2013	2012	2013	2012	2013
Total Annual Electricity Savings (GWH/yr)	1114	1277	1093	1139			158	214
Total Cumulative Savings (GWh)	6950	8227	7581	8720			1379	1803
Total Annual Peak Savings (MW)	251	236	239	240			31	41
Total Cumulative Peak Savings (MW)	1546	1824	1644	1884			269	350
Total Annual Natural Gas Savings (MMTh/yr)	17	25	0	0	32	36	4	6
Total Cumulative Natural Gas Savings (MMTh)	109	134			175	211	24	30

Historical Use of Potential Studies for Goals

The goals were originally developed as part of the California Energy Commission's (CEC) 2003 Integrated Energy Policy Report (IEPR), using information from the Hewlett Foundation Energy Series report, "California's Secret Energy Surplus,"[10] which conducted a statewide assessment of EE potential at three levels. *Technical potential* encompasses complete penetration of all EE measures that are technically feasible to install from an end-use and engineering standpoint. *Economic potential* typically refers to the portion of technical potential that is cost-effective when compared to supply-side alternatives. *Market potential*, or "maximum achievable", is the amount estimated to be achievable over a period of time based on established incentive scenarios and customers' willingness to adopt. D.04-09-060 adopted goals with the expectation that IOUs' EE efforts would capture 90% of the maximum achievable electric potential over a 10-year period, and 40% of the maximum achievable gas potential.[11] The Commission considered this to be an aggressive yet achievable expectation for the utilities to meet.[12]

Cumulative Goals and Decay Replacement

[8] The therm adjustments approved in D. 09-05-037 for SDG&E and PG&E were extended to 2012. A 25% reduction for SDG&E's GWh and MW goals to account for an overstatement of potential was applied first, followed by the 5% and 1% reduction of goals to reflect updates in ex-ante savings assumptions. Annual goals for 2013 were not updated, but cumulative savings adjustments are reflected in this column.

[9] D.09-09-047 modified goals for 2010-2012, but did not modify the existing goal for 2013.

[10] D.04-09-060 p. 3n

[11] D.04-09-060 at 2-3 states the level of expectation for natural gas savings was lower based on "the fact that natural gas program funding levels have dropped substantially over the last five years, and that ramping up those efforts to meet the full savings potential may take more time than on the electric side."

[12] D.04-09-060, FOF 2, states that goals should be aggressive yet achievable.

In D.04-09-060, goals were established on both annual and cumulative bases, with cumulative savings representing the annual savings from EE program efforts up to and including that program year.[13] The purpose of cumulative goals was to encourage IOUs to invest in long-lived EE measures that produced persistent savings, as well as to serve planning purposes such as for procurement and the California Air Resources Board's AB32 scoping plan.[14] The current counting method for cumulative goals holds the IOUs responsible for achieving savings in current or future years to replace savings if there were shortfalls in previous years.

D.09-05-037 further defined the Commission's intent to pursue long-term savings by addressing the issue of "decay." The concept of decay concerns what happens to energy savings after the expected useful life (EUL) of a measure has expired. Savings from measures installed in a particular year diminish over time as these measures wear out overtime, leading to fewer savings that count towards cumulative goals. The Commission clarified that the definition of cumulative savings goals should encompass any such decay, and that the IOUs shall be held accountable to replenish decayed savings under cumulative goals.[15]

Gross Savings Goals

Decision 04-09-060 adopted goals on a net basis based on the understanding "that the savings modeled in the potentials studies are net of free riders in the near-term, but that they become equivalent to gross savings as the net-to-gross ratio approaches 1.0 over the longer term."[16] The decision determined that, in the next portfolio update for the 2009-11 cycle, the Commission should revisit the issue of whether the savings goals for the outer years truly reflect gross savings potential.

Decision 08-07-047 revisited the issue and applied the IOU-specific goals on a *gross* basis for two primary reasons. First, by 2009, the goals adopted in 2004 were out of date and better resembled the trends in gross savings potential rather than net potential.[17] Second, the opportunity to support more strategic long-term EE programs is greater using gross energy savings goals, and "may open up the opportunity for more program options which support the long-term goals for energy efficiency than the use of net goals, because the use of gross goals should allow for parties to focus more on maximizing the energy savings potential of energy efficiency programs."[18]

Treatment of Codes and Standards Savings

After the initial goals decision, the Commission recognized the need to encourage the utilities to support adoption of EE measures into state building codes and state and federal appliance standards, rather than to oppose codes and standards (C&S) activities, which compete for potential otherwise able to be captured through utility programs. In D.05-09-043, the Commission determined that IOUs could credit savings from C&S advocacy toward their EE

[13] D.04-09-060, p. 10

[14] D.08-07-047, p.9

[15] D.07-10-032, p.75-77

[16] D.04-09-060, p. 33

[17] D.08-07-047 p. 28

[18] Ibid, p. 30.

goals, counting 50% of verified savings from pre-2006 advocacy toward their goal for the 2006-08 portfolio cycle. Savings credit was based on the following conditions:

- "The utilities agree to complete a market survey to estimate actual level of code compliance from an energy savings perspective for those portions of 2005 building and appliance standards that will take effect by June 1, 2006. This study will be completed by March 1, 2007.
- The utilities agree ***not*** to heavily rely on these *ex-ante* savings estimates to meet their portfolio savings goals for 2006-08. Instead these estimates should be treated as basically 'bonus' savings, more like a hedge against inherent risks that other programs may not meet their performance goals.
- The Commission makes it clear now that it will not entertain portfolio administrator requests to dramatically reduce overall funding levels for 2007 or 2008 based on the savings booked from the codes and standards program in 2006 or beyond."[19]

D.05-09-043 gave credit for C&S savings because Title 20/Title 24 code updates from 2005-06 had not been accounted for in the Secret Surplus Study, and there was a concern that these recently updated codes would siphon off a portion of the available market potential upon which the savings goal was based.[20] However, the decision also determined that the IOUs should be credited for the energy savings from C&S advocacy work on a going forward basis, in order to create incentives for the IOUs to support moving EE measures into code. D.05-09-043 considered the issues involved with the future role of C&S in goals:

> "Should our future energy efficiency savings goals be established based on the economic potential associated with *the combination* of codes and standards update work and other energy efficiency programs that can defer or replace the need for supply-side resources? If this approach is taken, the baseline for our potentials studies might not need to be modified with each update to reflect the latest revisions in state codes and standards. In addition, this approach would provide strong incentives for state staff and the utilities to work together to achieve the mutual savings goals. Alternatively, should we remove the impact of recently adopted higher codes and standards (and the associated economic potential) when we develop the savings goals for utility energy efficiency portfolios? Under this approach, the baseline for our potentials studies would be adjusted to reflect the impact of ever higher codes and standards.
>
> We believe that the concept of estimating the potential for the combination of all program efforts (including codes and standards advocacy work) and establishing energy efficiency portfolio goals on that basis has considerable appeal. Doing so could better enable us to assess the economic potential of improved codes and standards along side direct installation and other resource programs, as well as their associated savings achievements. It would also remove conflicting signals to the utilities that arise if the savings potential of energy efficiency is ratcheted downwards to reflect the higher codes and standards that their advocacy work in previous years has produced. Accordingly, we

[19] D.05-04-043, p. 91

[20] D.05-09-043, Joint Supplement, Attachment 2, p.7.

> direct Joint Staff to consider this issue and present recommendations during the goals updating process, which will be underway during the 2006-08 program cycle."[21]

In D.09-09-047, which approved the current IOU program portfolios, the utilities were given credit 100% of the savings associated with C&S advocacy work.[22]

2008 Goals Update

D.04-09-060 anticipated that the goals would be updated prior to the (then-anticipated) 2009-11 portfolio cycle. To do so, the IOUs, and later Energy Division, contracted Itron, Inc., (Itron) to conduct, first, a potential study, and then, a goals study (collectively, 2008 Study). The 2008 Study expanded on the original goals to identify savings from non-IOU EE efforts throughout the state per the Big Bold Energy Efficiency Strategies set forth in D.07-10-032 and the ARB's eminent AB 32 Scoping Plan. This study led to the adoption of Total Market Gross (TMG) goals in D.08-07-047. TMG goals are defined as the cumulative EE potential "able to be achieved through all reasonably measurable delivery channels including improvements in state and federal codes and standards, state legislative mandates, naturally occurring efficiency, and IOU voluntary programs (both resource acquisition and market transformation)."[23]

While the TMG goals included C&S savings, the decision did not address the attribution of C&S savings to IOU-specific goals or whether C&S savings should be removed from the baseline. The decision did not adopt Energy Division's recommendation for IOU-specific goals due to parties' response to the need for complex protocols for EM&V that were yet to be developed.[24] The decision also determined that the results of the 2006-08 evaluations should be included in the update of the IOU-specific goals.

While the IOU-specific goals are a subset of the TMG goals, it is important to note that (with the exception of SDG&E) the current IOU-specific goals are approximately 20% higher than the adopted TMG goals adopted in D.08-07-047. Itron identified the most significant cause of the decrease in EE potential to be caused by the tapping the potential in fluorescent lighting. Table 2 below provides the TMG goals adopted in D.08-07-047.

Table 2. Selected 2012-14 Total Market Gross goals adopted in D.08-07-047

	PG&E			SCE			SoCalGas			SDG&E		
	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
Total Annual Electricity Savings (GWH/yr)	978	867	793	973	861	784				212	183	164
Total Cumulative Savings (GWh)	978	1845	2638	973	1834	2618				212	395	559
Total Annual Peak Savings (MW)	253	237	227	215	200	189				45	41	39
Total Cumulative Peak Savings (MW)	253	490	717	215	415	604				45	86	125

[21] D.05-09-043, p. 127

[22] D.09-09-047, p.205-207

[23] D.08-07-047, p. 11

[24] Ibid, p.17

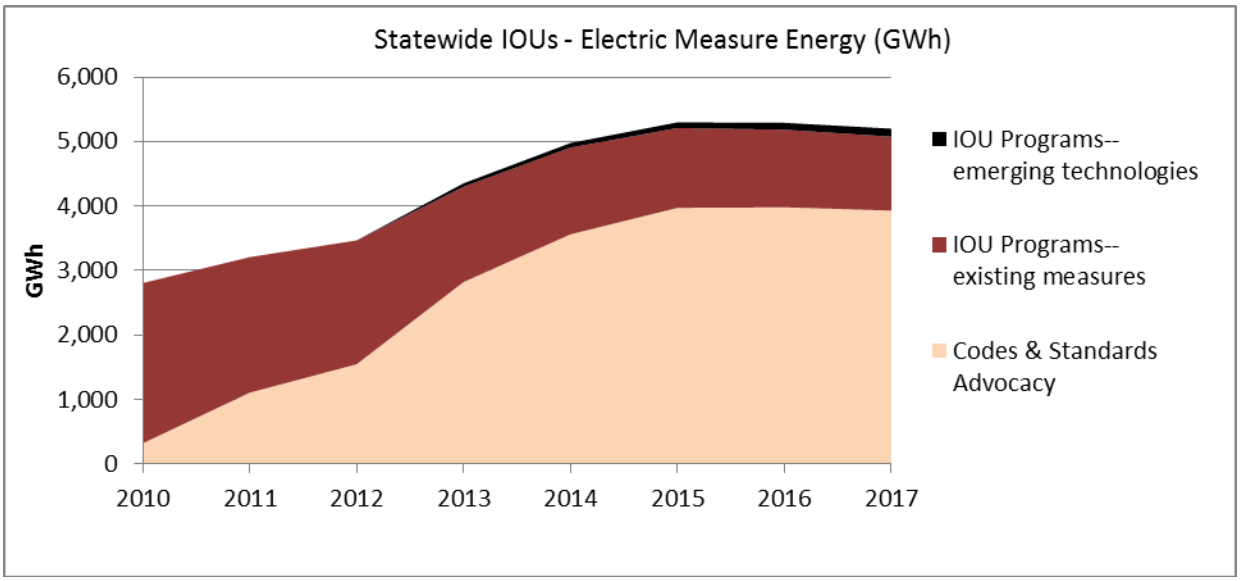
Total Annual Natural Gas Savings (MMTh/yr)	20	32	31		18	34	34	3	7	6
Total Cumulative Natural Gas Savings	20	52	83		18	52	86	3	10	16

III. 2011 Potential and Goals Update

By ALJ ruling dated November 17, 2011, the 2011 potential study was released for comment. Energy Division contracted with Navigant Consulting, Inc., to conduct the study as part of the goals update ordered in D.08-07-047 (OP 5 and OP 7). Navigant developed the 2011 potential study using scenario inputs consistent with the mid-case scenario in Itron's 2008 Study (which was the basis for the IOU program component of the adopted TMG goals). They also calibrated potential results to ex post results for 2007 and 2008 to ensure that their assumptions were within a reasonable accuracy range. Navigant updated all data inputs with the best available data through a public vetting process, and closely coordinated with the Database on Energy Efficiency Resources (DEER) update happening simultaneously.[25]

The results of the 2011 potential study found that savings from C&S activity will significantly increase, while IOU market potential will decrease due to the shift of many measures from utility programs into code. Figure 1 below illustrates this trend.

Figure 1. IOU market potential and Codes and Standards expected energy savings, 2010-2017



In 2013 and 2014, the market potential available for IOU programs to pursue is expected to decline compared to 2008, due to the following factors:

[25] All data inputs are compiled in the Measure Input Characterization Sheets (MICS) that have been posted to Energy Dataweb at http://www.energydataweb.com/cpuc/home.aspx.Navigant presented their methodology and inputs in the Demand Analysis Working Group (DAWG), a public collaborative stakeholder process jointly established by the CPUC and CEC.

- **Codes and Standards adoption:** A number of measures have been adopted into Title 20 and Title 24 codes and federal appliance standards.
- **2006-08 *ex post* value adjustment:** The 2006-08 evaluations found that a significant number of gross *ex ante* planning assumptions were overestimated, such that the evaluated savings were 40% lower than the savings calculated based on these planning assumptions values. The measure groups that experienced the most significant changes were standard compact fluorescent lighting (CFLs) and refrigerator recycling.
- **Low income EE assumptions adjustment:** The assumptions in the 2008 potential study were higher than the 2011 study.
- **New construction adjustment**: Economic conditions have significantly reduced new construction in the residential and commercial sector since 2008.
- **Emerging technologies:** Contrary to the downward trends above, emerging technologies constitute an increasing percentage of commercial potential beyond 2014, which partially offsets the decline in potential from lighting and codes and standards adoption.

IV. Proposed EE Goals for 2013-14 Transition Period

As noted above, goals should be consistent with the Commission's intent in past decisions. Specifically, goals should 1) be aggressive yet achievable;[26] 2) support long-term planning and market transformation;[27] 3) encourage a focus on long-term savings;[28] and 4) be based on the best available data.[29]

1. Use the 2011 potential study and Codes and Standards advocacy savings estimates as the basis for goals

Energy Division staff recommends that goals be based on (a) the 2011 potential study and (b) new C&S savings estimates developed subsequent to the potential study in support of this goals proposal. Specifically, annual savings goals for energy (GWh), peak (MW), and natural gas (MMTh) should be:

100% of Annual Market Potential + New C&S Savings Estimates

a) **Annual Market Potential:** D.04-09-060 established goals equal to 90% of electric market potential and 60% of natural gas potential. Given that the IOUs report having achieved 162% of their 2010 gross annual electric goals,[30] it seems reasonable to expect they can achieve 100% of the market potential defined in the 2011 potential study. However, the IOUs only achieved 85% of their gas potential in 2010. Possible explanations for this underperformance include unforeseen market barriers to achieving

[26] D.04-09-060, p.3
[27] D.04-09-060, p.35
[28] D.07-10-032, p.5
[29] D.08-07-047, pgs.18-19
[30] 2010 IOU reported saving can be found at http://eega.cpuc.ca.gov/

gas potential, the Commission's "negative therm" policy to reflect interactive effects, or inadequate IOU program designs to capture gas potential.

Energy Division staff's straw proposal is to set goals equal to 100% of market potential for both electricity and gas savings goals, however, parties should comment on whether this is a reasonable stretch, particularly for natural gas.

b) **Codes & Standards Savings Estimates:** The 2011 potential study separated market potential from C&S savings, which enables the two categories to be additive and provides the most accurate assessment of potential savings forecasted for 2013-14. This is an improvement compared to the approach that was taken in D.05-09-043, where the relative portion of C&S savings within market potential was unknown.

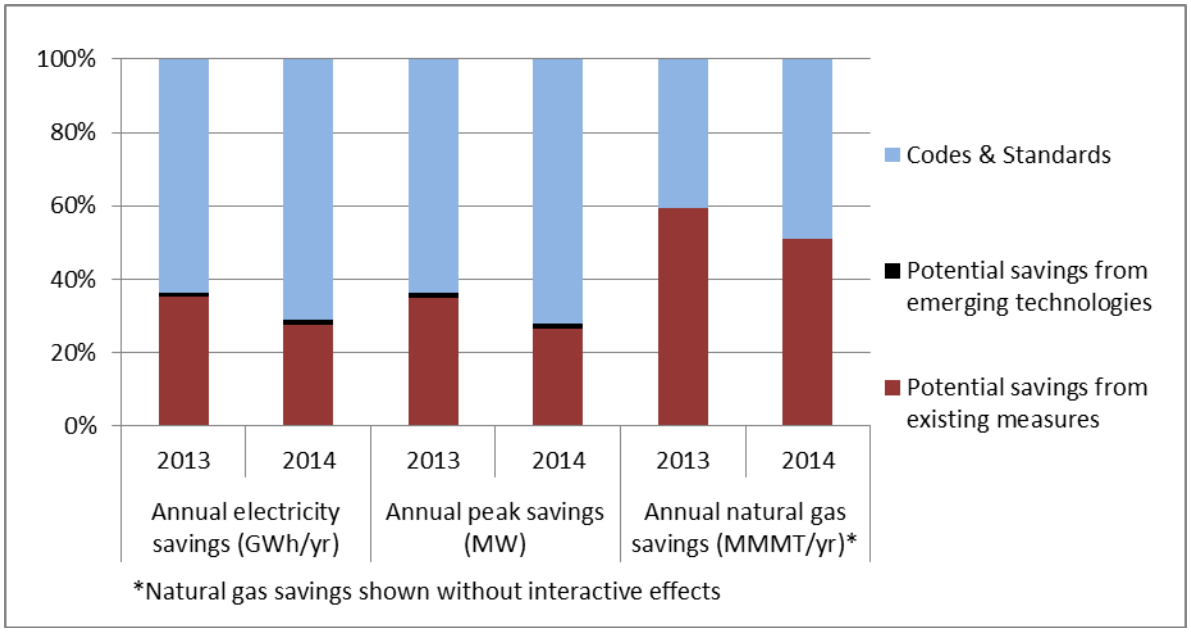
Navigant prepared an "Addendum to the 2011 Potential Study" that uses a new model, developed for the goals study, to augment C&S advocacy savings estimates in the November 17, 2011 draft study. The new model calculates savings from additional measures that were adopted directly into code in the 2005 and 2008 Title 24 updates, without entering utility programs. The potential study model (known as the Energy Efficiency Resource Assessment Model, or EERAM), did not reflect these savings because, by definition, it only models measures that are above and beyond code, and makes C&S calculations only to the extent they set the baseline for utility program measures. Since these measures were adopted into code prior to being included in IOU programs, they were not included in the EERAM. The new C&S model calculates the credit IOUs can claim from all their advocacy efforts, including those that lead to direct code adoption.

The Navigant subcontracted with Heshong Mahone Group (HMG) to support their analysis of estimated savings from C&S advocacy. HMG had originally developed a model to determine savings resulting in C&S in the 2006-08 impact evaluations, and worked with Navigant to modify this model and apply it to goals analysis. The model has been made publically available on Energy Division Staff's public documents site for interested parties to review.[31] Attachment B to this ruling contains the model documentation, and outputs for the new C&S estimates.

Since D.05-09-043 and D.09-09-047 gave the IOUs 100% credit for verified savings from C&S advocacy, these savings are forecasted to grow and represent approximately 65% of the total statewide EE goals in 2013 per Energy Division's proposal (See Figure 2 below).

[31] Energy Dataweb can be found at http://www.energydataweb.com/cpuc/home.aspx. To find the C&S estimation model, select the search tab, and check "Study Type" on Potential and Goals Study.

Figure 2. Breakdown of 2013-14 EE goals per Energy Division proposal



2. Separate targets for C&S, IOU programs for existing technologies, and IOU emerging technologies programs

Energy Division staff recommends that separate targets be set for IOU programs for existing technologies, emerging technologies programs, and C&S savings categories in order to ensure that utilities aggressively pursue EE strategies beyond codes and standards. While the 2011 potential study indicates that EE potential for IOU programs will decline, the savings accrued from C&S activity is anticipated to grow substantially, as illustrated in Figure 2.

Energy Division staff is concerned that, given the large share of C&S savings contributing to goals from previous cycles, the current approach to C&S activity in goals will not provide a strong enough signal and could divert resources and attention away from utility programs in the 2013-14 transition portfolio that are critical for actually realizing the C&S savings potential as well as maintaining a vibrant and comprehensive portfolio. Levels of efficiency attributed to future C&S programs will not be fully realized without incenting the technologies and practices expected to achieve Standards performance levels through voluntary incentive programs. Utility programs should prime the market so that compliant technologies and building practices are readily available, and reasonably priced, by the time standards go into effect. This proposal is intended to avoid the risk of overemphasis on C&S advocacy at the expense of the utility programs that are needed to ensure technologies and building practices are available and affordable as they become required by code.

The Energy Division Staff proposal eliminates the "hedging benefit" of C&S savings identified by the Commission in D.05-09-043, because the need to establish firm targets for IOU programs outweighs the hedge benefits. In D.05-09-043 the Commission stated that the IOUs should not heavily rely on C&S savings to meet their portfolio savings goals, but the forecasted scale of C&S savings suggests this is happening. Energy Division staff seeks input from parties on alternative ways to give the IOUs a hedge against the risks of setting overly aggressive goals, while still emphasizing non-C&S programs.

Although emerging technologies only account for 1% of the market potential in the 2013-14 period, the 2011 potential study indicates that these technologies will account for the majority of potential growth in the years beyond 2014 and for more than 25% of the total economic potential. The growth of market potential from these emerging technologies will depend on incentives programs. It is important to separately target emerging technologies as they are the "pipeline" for new sources of EE potential. While this proposal limits some of the IOUs' flexibility to manage their portfolios, Energy Division believes it is necessary to provide clear signals that support "end-to-end" market transformation through goals.

Table 4 below provides a numerical breakdown of proposed targets for EE savings from the three savings categories.

3. Goals applied on a gross basis per current policy

Energy Division recommends that the Commission maintain current policy established in D.09-09-047, which applies goals on a gross basis.[32] Gross goals continue to serve the Commission's purpose of supporting a wider range of EE activities. Market transformation is improved by creating spillover effects and additional naturally occurring savings. A more expansive definition of goals that seeks to achieve 100% of gross market potential provides the greatest opportunity to achieve the breadth of energy savings that the Commission is seeking, and is consistent with statewide activity to advance the Strategic Plan.

The results of the potential study show significantly reduced available potential for the key measures with high net to gross ratios (such as CFLs and refrigerator recycling), with CFLs being phased out of the IOU program portfolio as they become adopted into code. These changes could reduce rates of free-ridership across the portfolio.

4. Annual and cumulative goals, with cumulative goals including recovery of savings lost from decay of past EE activities, but no recovery of goals that weren't met by 2010.

Energy Division recommends that goals for the 2013-14 transition period be established on an annual and cumulative basis, with cumulative goals based exclusively on:

1. The annual goals for 2013-14;
2. Recovery of unmet goals based on 2010-12 *ex-ante* planning assumptions pursuant to D.11-07-030 and D.10-12-052; and
3. Recovery of savings from the effects of decay.

[32] The cost effectiveness of the portfolio will continue to be assessed on a net basis.

The proposed cumulative goals neither include recovery of savings from unmet goals prior to 2010, nor recovery of any shortfalls relative to 2010-12 *ex-post* savings in the event the evaluation results in downward adjustments. The portfolios would still be evaluated on an *ex-post* basis. While the IOUs achieved their goals using the *ex-ante* assumptions upon which the 2006-08 portfolios were based, the 2006-08 *ex post* values adjusted savings downward by 40%.[33] For the current cycle, the goals received just a 5% downward adjustment for PG&E and SCE and a 25% adjustment for SDG&E.[34] Therefore, the difference between goals and evaluated savings represents a change in the expected achievable potential since the original potential study. Therefore, it is no longer reasonable to expect the IOUs to achieve these savings.

The IOUs should still be expected to achieve their 2010-12 goals based on frozen *ex-ante* values, and they should be required to make up these savings during the 2013-14 period. The utilities have had the opportunity to design and adjust their portfolios around the *ex-ante* numbers, as per their compliance filings and the rebalancing Advice Letters filed pursuant to D.11-07-30. It is reasonable and necessary for the IOUs to be held responsible to meet the commitments established in their approved applications.

While Energy Division does not recommend that the IOUs continue to be held responsible for recovery of pre-2010 cumulative goals, it is necessary to continue to calculate the forecasted cumulative energy savings for procurement planning purposes. Recovery of energy savings from decay continues to be an important component of goals as it encourages the IOUs to focus investment on long-term savings. Commission policy requiring 50% recovery of decayed savings should continue in the 2013-14 period. In order to calculate cumulative goals, the IOUs should be required to file calculated values for decayed savings in their portfolios with their applications for this time period.

Table 4 presents the draft goals proposed by Energy Division. These values may change as a result of the 2011 DEER update, the 2011 potential study, and the approach to goals adopted by the Commission in response to parties' comments. Tables 5 and 6 below show the change in goal values as proposed, compared to the current 2013 goals for electricity and natural gas, respectively.

Table 4. Energy Division-Proposed Draft Numerical Goals[35]

	Annual electricity savings (GWh/yr)		Annual peak savings (MW)		Annual natural gas savings (MMMT/yr)	
	2013	2014	2013	2014	2013	2014
PG&E						
IOU program targets	689	614	135	117	11.7	11.8
Emerging technology targets	25	31	5	7	0.0	0.0
Projected Codes & Standards	1,245	1,571	246	319	7.1	8.5

[33] 2006-08 Energy Efficiency Evaluation Report can be found at http://eega2006.cpuc.ca.gov/ERT.aspx

[34] D.09-09-047.

[35] From Navigant's addendum to the 2011 potential study, p. 3, included as Attachment B to this ruling

Total Goals	**1,959**	**2,216**	**387**	**443**	**18.7**	**20.3**
SCE						
IOU program targets	633	584	126	112		
Emerging technology targets	21	31	5	7		
Projected Codes & Standards	1,285	1,621	253	329		
Total Targets	**1,939**	**2,236**	**384**	**448**		
SoCal Gas						
IOU program targets					17.4	17.0
Emerging technology targets					0.0	0.1
Projected Codes & Standards					11.3	13.5
Total Targets					**28.8**	**30.6**
SDG&E						
IOU program targets	156	148	34	29	1.8	1.8
Emerging technology targets	7	9	1	2	0.0	0.0
Projected Codes & Standards	291	368	57	75	0.8	1.0
Total Targets	**454**	**524**	**93**	**106**	**2.6**	**2.8**
Total Statewide Targets	**4,351**	**4,977**	**864**	**997**	**50.1**	**53.6**

Table 5. Comparison of 2013 proposed electricity goals to current goals, GWh/yr*

	PG&E	SCE	SDG&E	Total
Current IOU-specific goals per D.04-09-060	1277	1139	214	2630
Energy Division-proposed goals				
Utility programs - Existing technologies	689	633	156	1,478
Utility programs – Emerging technologies	25	21	7	53
Codes & standards advocacy	1,245	1,285	291	2,721
Total Proposed Goals	1,959	1,939	454	4,352
% change in goals from current to proposed (IOU programs only)	-44%	-43%	-24%	-42%
% change in goals from current to proposed (Total goals)	53%	70%	112%	65%

Table 6. Comparison of 2013 proposed natural gas goals to current goals, MMTh/yr*

	PG&E	SoCalGas	SDG&E	Total
Current IOU-specific goals per D.04-09-060	25	32	4	61
Energy Division-proposed goals				
Utility programs - Existing technologies	11.7	17.5	1.8	30.9
Utility programs – Emerging technologies	0.0	0	0.0	0.0
Codes & standards advocacy	7.1	11.3	0.8	19.2
Total Proposed Goals	18.7	28.8	2.6	50.1
% change in goals from current to proposed	-53%	-45%	-55%	-49%

(IOU programs only) % change in goals from current to proposed (Total goals)	-25%	-10%	-35%	-18%

ATTACHMENT B

NAVIGANT

ANALYSIS TO UPDATE ENERGY EFFICIENCY POTENTIAL, GOALS, AND TARGETS FOR 2013 AND BEYOND

ADDENDUM TO THE 2011 ENERGY EFFICIENCY POTENTIAL STUDY IN SUPPORT OF ENERGY DIVISION'S 2013-14 GOALS PROPOSAL

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Introduction

The document provides an addendum to the statewide investor owned utility energy efficiency potential study draft report submitted by Navigant Consulting in November 2011[36] (the 'Draft report'). The potential study draft report was an interim product of the Analysis to Update Energy Efficiency Potential, Goals and Targets for 2013 and Beyond (PGT Study), which was contracted to Navigant by Energy Division. Energy Division requested Navigant to prepare this addendum to the Draft report in response to the Phase IV Scoping Ruling issued on October 25, 2011, which stated that the 2011 potential study should be used to inform the goals for the 2013-2014 portfolio cycle. This addendum provides clarification on the annual incremental market potential (or simply 'market potential') and the role of savings from codes and standards advocacy.

Market Potential is an estimate of the amount of energy efficiency that customers will install in response to specific levels of program funding and measure incentives, and assumptions about market influences and barriers. Market potential is expressed as cumulative and annual incremental potential. Annual incremental market potential (or simply 'market potential') is considered to be the best estimate of ex-post gross potential that a portfolio of programs could achieve for a given year.

This addendum addresses the following topics;

1. A discussion on the sources of market potential and forecast trends from 2010 through 2017;
2. A forecast of investor owned utility (IOU) market potential by source for the 2013-2014 timeframe;
3. A revision to the discussion from the Draft report on the methodology used to assess the market potential for codes and standards, and
4. An additional analysis[37] on market potential resulting from codes and standards activity not included in the Draft report.

This addendum draws heavily on the concepts and discussions provided in the Draft report and certain sections of this document are excerpts from that report. Readers are encouraged to consult the Draft report for further clarification and appropriate caveats.

Sources of Energy Efficiency Expected Savings

- As part of the PGT Study, Navigant has modeled the expected savings from the following sources:***Annual market potential of existing program measures*** include a broad range of energy efficient measures and activities that are in the 2010 – 2012 portfolio, and are likely to be included

[36] Analysis to Update Energy Efficiency Potential, Goals, and Targets for 2013 and Beyond. Track 1 Statewide Investor Owned Utility Energy Efficiency Potential Study. Navigant Consulting, Inc., November 4, 2011

[37] Source doc title

in the 2013-2014 portfolio. All measures in a portfolio are considered to have market potential as a program measure up to the point that they are incorporated into a state or federal code or standard. When that occurs, the market potential for that measure becomes the market potential for that code or standard.

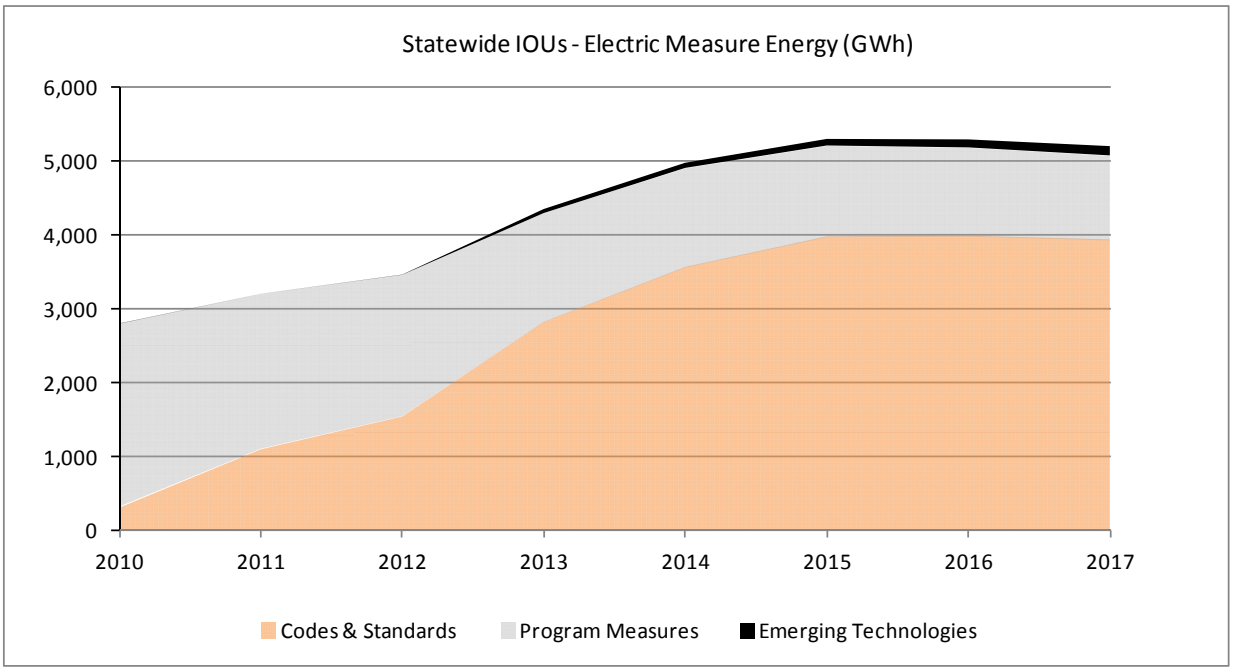
- ***Annual market potential of emerging technologies*** include measures that are just entering the market. These measures are generally not in the portfolio or may be present in the portfolio as a case study, pilot program, or test device. These measures are considered to be commercially viable and can are viable as a procurement resource within the timeline of this study. As such these measures have technical, economic, and market potential.
- ***Codes and Standards advocacy*** includes the impact of state and federal codes and standards adopted or planned for adoption between 2005 and 2013. Potential for codes and standards activity within an IOU service territory is substantial because it applied to all activity occurring within that territory, allowing for a modest compliance rate adjustment. By comparison, program measure market potential is considerably smaller because it accounts for factors such as customer awareness and willingness that are not considered in mandatory codes and standards related activity.

Figure 1 shows the estimated market potential for these three sources for the years 2010 through 2017. During this period the market potential for codes and standards increases from 318 GWh for approximately 4,000 GWh. Much of this growth occurs as lighting efficiency standards take effect at the state level in the 2012 through 2016 timeframe. Potential for program measures is reduced by 1,337 GWh from 2,487 GWh to approximately 1,150 GWh, largely as a result of codes and standards revisions.

As indicated in the Draft report, the potential for emerging technologies (ETs) are modeled beginning in 2012. The market potential for the basket of technologies identified in the Draft report reaches 125 GWh by 2017, or roughly 10% of the 1,337 GWh in program measure potential that converted to codes and standards potential over this same period. Economic potential[38] for ETs are considerably larger that market potential reaching about 4,500 GWh by 2017, or more than three times the 1,337 GWh in program measure potential that converted to codes and standards potential over this same period. Bridging the gap between market and economic potential, and the timeframe over which this gap is bridged, is largely the function of program design and delivery.

[38] Technical and economic potential for emerging technologies (ETs) is much larger than market potential because all technical and economic potential for ETs is available in the year an ET is considered as a viable resource option, where Market potential grows more slowly because of factors such as lack of knowledge, slow market acceptance, or product distribution constraints.

Figure 1. Trends in Annual Incremental Market Potential by Source



IOU Market Potential for 2013 – 2014

Table 1 provides details on the sources of energy and demand market potential for 2013 and 2014, while Table 2 provides details by IOU for this same period.

Table 1. Combined IOU Service Territory Expected Energy Savings by Source

Potential Source	Annual electricity savings (MWh/yr)		Annual peak savings (kW)		Annual natural gas savings (MMT/yr)	
	2013	2014	2013	2014	2013	2014
Annual market potential for existing program measures	1,477,818	1,345,783	295,432	257,848	25,507	25,877
Annual market potential for emerging technologies	52,270	70,822	12,085	16,087	12	50
Expected savings ofCodes & Standards advocacy	2,821,000	3,560,000	556,000	723,000	-50	-660
Total Statewide Targets	**4,351,088**	**4,976,605**	**863,517**	**996,935**	**25,469**	**25,266**

Table 2. Sources of Potential by Utility

Utility	Annual electricity savings (MWh/yr)		Annual peak savings (kW)		Annual natural gas savings (MMT/yr)	
	2013	2014	2013	2014	2013	2014
PG&E						
Annual market potential for existing program measures	688,981	614,381	135,384	117,209	6,715	7,393
Annual market potential for emerging technologies	24,666	30,943	5,343	6,788	-29	-23
Expected savings of Codes & Standards advocacy	1,245,000	1,571,000	246,000	319,000	-10,170	-12,740
Total Goals	**1,958,647**	**2,216,324**	**386,728**	**442,997**	**-3,484**	**-5,370**
SCE						
Annual market potential for existing program measures	632,563	583,665	125,940	111,530		
Annual market potential for emerging technologies	21,025	31,214	5,295	7,350		
Expected savings of Codes & Standards advocacy	1,285,000	1,621,000	253,000	329,000		
Total Targets	**1,938,587**	**2,235,878**	**384,234**	**447,880**		
SCG						
Annual market potential for existing program measures					17,491	17,073
Annual market potential for emerging technologies					43	73
Expected savings of Codes & Standards advocacy					11,280	13,530
Total Targets					**28,813**	**30,675**
SDG&E						
Annual market potential for existing program measures	156,275	147,737	34,108	29,109	1,301	1,411
Annual market potential for emerging technologies	6,579	8,665	1,447	1,949	-2	0
Expected savings of Codes & Standards advocacy	291,000	368,000	57,000	75,000	-1160	-1450
Total Targets	**453,854**	**524,402**	**92,555**	**106,058**	**139**	**-39**
Total Statewide Targets	**4,351,088**	**4,976,605**	**863,517**	**996,935**	**25,469**	**25,266**

Methodology

Navigant has identified three sources of expected savings in their potential study; he methodologies for modeling each source is discussed below. As indicated previously, readers are encouraged to consult the Draft report for further details on market potential for program measures and emerging technologies.

Annual market potential for program measures

As discussed in the Draft report, market potential is a calculation of the amount of economic energy efficiency potential that could be captured by utility energy efficiency programs over the forecast period. This calculation varies with the program's parameters, such as the magnitude of incentive or rebates for customer installations and program design. Annual market potential was determined based on the measures in the IOU program portfolio, with parameters defined through DEER, non-DEER workpapers and other sources.

Annual market potential for emerging technologies

As discussed in the Draft report emerging technologies provide new sources of EE potential that were not a part of the IOU program portfolio when the 2008 study was conducted. To assess the potential of emerging technologies, Navigant examined a public database of 800 possible emerging technologies and identified and assessed 90 technologies as "high potential". This list was ultimately narrowed down to 21 of the highest potential technologies that were modeled in the study, all within the residential and commercial sectors. Emerging technologies for the industrial sector were not addressed in this study but are identified as a critical research recommendation.

Potential savings from Codes and Standards (C&S) advocacy

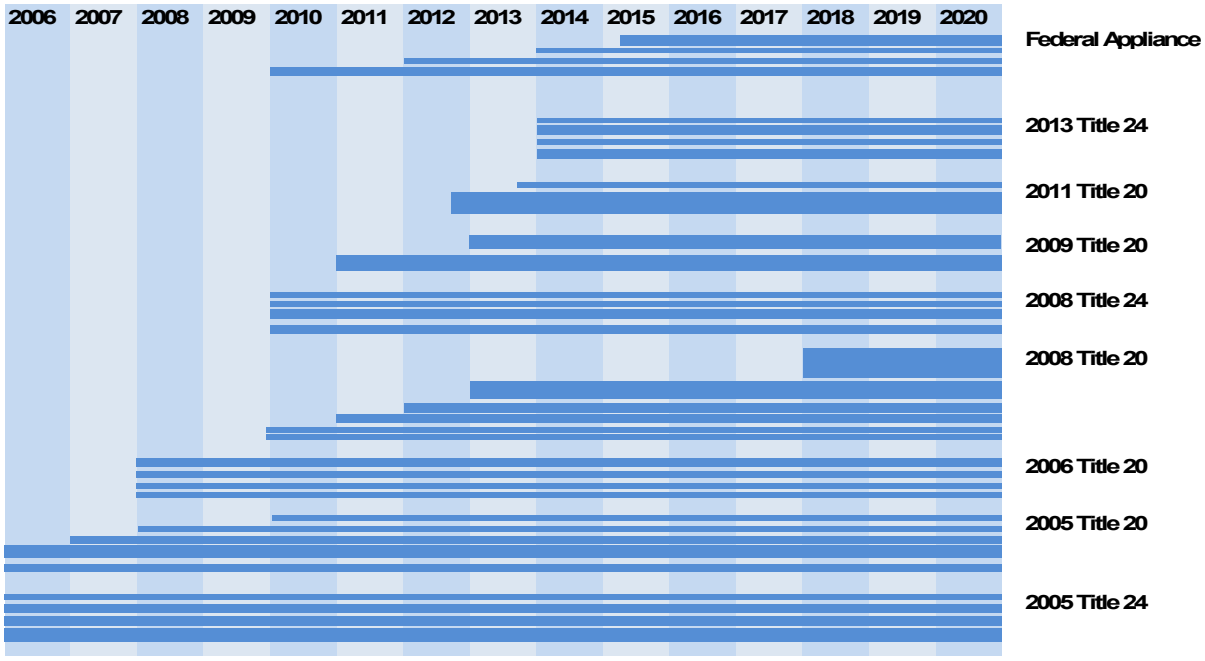
The California Energy Commission (CEC) periodically updates the state appliance standards (Title 20) and building energy efficiency code (Title 24). Federal appliance efficiency standards are adopted though legislation and Department of Energy (DOE) rulemakings. These standards affect IOU energy efficiency programs in two different ways. On one hand, C&S updates reduce baseline energy usage, therefore, reducing the unit energy savings of associated voluntary program efficiency measures. On the other hand, by actively participating in the development and advocacy of new state and federal standards, IOU C&S advocacy programs promote total market adoption of relevant energy efficiency technologies and, therefore, are able to achieve much more energy savings through the support of their adoption.

Both of these aspects of C&S are addressed by this study to provide a comprehensive understanding of C&S impacts on the potential energy savings in California, as well as on the IOU energy efficiency program portfolios. This section describes the methodologies and data sources used to conduct the C&S analysis. To be consistent with the rest of the report, this section focuses on the C&S impact to voluntary programs. Appendix A provides details on all measures impacted by C&S activity, including detailed descriptions of calculations and data sources of C&S vectors. Energy savings potentials of IOU C&S programs are presented in Appendix B.

Figure 2 illustrates the state and federal standard groups that were considered in this study. Each horizontal bar represents an appliance standard or building energy code measure. The starting point of a bar indicates the effective date and the thickness illustrates the relative magnitude of the statewide energy impact of each measure. The thickness of the bars is merely illustrative and do not represent the exact impact. The complete list of measures and standards is provided in Appendix A. These represent standards that have been adopted to date as well as the proposed 2013 Title 24 standards. The CEC has released the 2013 Title draft language, with the proposed adoption date, and has provided the estimated statewide energy impact. This is significant, because 2013 Title 24 requirements will take effect on January 1, 2014 and will directly impact new construction programs starting in 2014, which is one of the bridge program years. Therefore, projected 2013 Title 24 measures are included in this study.

We understand that there are also ongoing or planned state and federal standard development effects that will lead to future standards adoption. Based on general CEC and DOE rulemaking procedures, those new standards will most likely take effect after 2014, and therefore, won't affect the goal-setting for the 2013-14 bridge period. In the second phase of potential study, we will estimate the potential impact and energy savings from future C&S actives, along with relevant state legislatives and CPUC initiatives, in order to provide a better picture of long-term energy savings potentials.

Figure 2 Illustration of C&S Groups



The 2008 Potential Study also analyzed the two aspects of C&S impact described above, and presented from an IOU Perspective (impact to voluntary programs) and from a Societal Perspective (C&S energy savings). Limited by the available C&S development information at the time the study was developed, the 2008 study considered several scenarios of major C&S improvements. In contrast, the C&S analysis in this study is based on adopted standards or

nearly adopted standards, so that the study better reflects actual C&S impacts instead of projected impacts. Table 3 compares how standards have been treated in the 2008 study and in this study.

Table 3. C&S Potential Study Comparison

Standards Group	2011 Potential Study		2008 Study	
	Impact to Voluntary Programs	C&S Program Savings	Impact to Voluntary Programs (IOU Perspective)	C&S Program Savings (Social Perspective)
Title 24	2005, 2008, and 2013 Title 24; Compliance improvement scenarios included in C&S Program Savings		Assumed phase out of new construction programs (15% above 2005 Title 24) by 2009; Residential new construction compliance improvement program starting from 2009	Assumed phase out of new construction programs (15% above 2005 Title 24) by 2009 and scenarios of future Title 24 improvements
Title 20	2005, 2006, 2008, 2009, and 2011 Title 20 (phase-in of Huffman Bill, which outlaws general service incandescent lamps)		Assumed that Huffman Bill would improve general service lighting standards to phase-out CFL programs over 2011-2015	
Federal Appliance Standards	All adopted federal standards	Federal standards reported by IOU C&S Programs	None	clothes dryers, dishwashers, residential central and room AC, commercial packaged terminal AC and heat pumps

Appendix A

C&S Impact to Voluntary Programs

Impact Calculation Methods

New state and federal regulations will reduce the savings achieved by an energy efficiency measure if they raise the minimum performance level of the corresponding baseline technology. This applies equally to appliance standards (both federal and California Title 20 standards), and to building energy code (Title 24) measures. The direct effect is that measure unit energy savings (UES) are reduced and the updated UES can be calculated as a percentage of the original UES, as shown in the following equation:

$$Impact\ Percentage_{Year} = \frac{UES\ under\ new\ standard}{UES\ under\ base\ case\ standard\ in\ 2007}$$

Impact percentages vary by year because they depend on the effective year of new standards. A measure can potentially be affected by several updates to standards. For each measure, a C&S impact vector is used as the input the EERAM model, which includes anticipated C&S impact percentages for years 2010 to 2030.

We investigated the state and federal efficiency standards status according to measure information characteristics (MICS). For measures not affected by any new efficiency standards becoming effective after the baseline year of 2007, values of the C&S impact vectors were set to be 100%, meaning that the UES stays the same. For measures affected by standards updates after 2007, we used two methods to determine C&S impact percentages based on efficiency metric of each measure. The first calculation method is used for measures with an efficiency metric that indicates rate of energy usage, e.g. light bulb wattage rating. We assumed that neither program measures nor standards would change operation schedules. The C&S impact percentage is calculated as:

$$Impact\ Percentage_{Year} = \frac{Power_{New\ Standard} - Power_{Program\ Measure}}{Power_{Baseline} - Power_{Program\ Measure}}$$

The second calculation method is used for program measures with an efficiency or efficacy measurement, e.g. clothes washer energy factor (cycles/kWh). In this case, we assumed the annual loads, e.g. cooling/heating loads or clothes washing loads, were the same under existing and new standards. The following equation is used to determine these impact percentages:

$$Impact\ Percentage_{Year} = (Load / \eta(New\ Standard) - Load / \eta(Program\ Measure)) / (Load / \eta_{Ba}$$

In the above equations, the baseline technology efficiency ratings, $Power_{Baseline}$ and $\eta_{Baseline}$, are based on effective standards in baseline year of 2007 or average market practices, if there was not an applicable efficiency standard in 2007.

The approach for residential and nonresidential whole building new construction measures is somewhat different. For these, we include a package of efficiency improvement technologies, which generate energy savings matching with the next cycle of the Title 24 building energy code. Therefore, new Title 24 energy code updates reduce the energy savings potential of new construction program packages based on the preceding Title 24 code. As a result, the corresponding C&S impact percentage becomes zero when new Title 24 code is effective.

The following sections provide the detailed energy efficiency data and impact percentages for EERAM measures that are affected by new standards that become effective after 2007.

C&S Impact Vectors

Table 4 through Table 7 summarize the C&S impact vectors for EERAM measures in residential electric, residential gas, commercial electric, and commercial gas sectors, respectively. Only measures affected by C&S updates are listed in these tables. For each measure, a reference to the table, which contains detailed standard and measure efficiency data, is provided.

Table 4. C&S Impact Vectors for Residential Electric Measures

EERAM Measure	Standard Data	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
ES Refrigerator	Table 8	100%	100%	100%	100%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%
ES Dishwasher	Table 9	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
ES Freezer	Table 10	100%	100%	100%	100%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%
ES Room AC	Table 11	100%	100%	100%	100%	52%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
Rooftop or split system – SEER 15	Table 14	100%	100%	100%	100%	100%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%
Rooftop or split system –SEER 18	Table 14	100%	100%	100%	100%	100%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
ES Clothes washer	Table 12	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LED Lighting <=7W - Indoor	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: <=7W Screw-In Indoor	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%

EERAM Measure	Standard Data	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
LED Lighting 13W - Indoor	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: 13W Screw-In Indoor	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: 18W Screw-In Indoor	Table 15	93%	93%	61%	61%	61%	61%	61%	61%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: 23W Screw-In Indoor	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: >25W Screw-In Indoor	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
CFL Fixture	Table 15	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
LED Lighting 7W - Outdoor	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: 7W Screw-In Outdoor	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%
LED Lighting 13W - Outdoor	Table 15	94%	94%	94%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: 13W Screw-In	Table 15	94%	94%	94%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%

EERAM Measure	Standard Data	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Outdoor																	
CFL: 18W Screw-In Outdoor	Table 15	93%	93%	61%	61%	61%	61%	61%	61%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: 23W Screw-In Outdoor	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: >25W Screw-In Outdoor	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
EnergyStar LCD/Plasma TVs	Table 13	100%	94%	94%	88%	88%	88%	82%	82%	82%	82%	82%	82%	82%	82%	82%	82%
WB - NC - 15%		100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WB - NC - 25%		100%	40%	40%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WB - NC - 30%		100%	50%	50%	50%	17%	17%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Residential HVAC for Hot-Dry Climates	Table 14	100%	100%	100%	100%	100%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%
Evaporative Cooling (Swamp Cooler)	Table 14	100%	100%	100%	100%	100%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
Indirect Evaporative	Table 14	100%	100%	100%	100%	100%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%

EERAM Measure	Standard Data	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cooling e.g., Coolerado																	
Ductless Air Conditioning including VRF & Split Systems	Table 14	100%	100%	100%	100%	100%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%
Residential Water-Cooled Heat Exchangers for HVAC Equipment	Table 14	100%	100%	100%	100%	100%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%

Table 5. C&S Impact Vectors for Residential Gas Measures

EERAM Measure	Standard Data Table	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
High Efficiency Furnace	Table 16	100%	100%	100%	89%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%
High Efficiency Space heating boiler	Table 17	100%	100%	100%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%
High Efficiency Water Heater	Table 18	100%	100%	100%	100%	100%	79%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
High Efficiency	Table 19	100%	100%	100%	52%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%

Pool Heater																	
ES Dishwasher	Table 9	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
WB - NC - 15%		100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WB - NC - 25%		100%	40%	40%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WB - NC - 30%		100%	50%	50%	50%	17%	17%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 6. C&S Impact Vectors for Commercial Electric Measures

EERAM Measure	Standard Data Table	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Convection Oven	Footnote[39]	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Refrigerator Glass Doors	Table 22	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%
Packaged A/C (<65k 15 SEER)	Table 14	100%	100%	100%	100%	100%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%
PS Interior HID - Incandescent Base > 150W	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
PS Interior HID - Incandescent Base <= 150W	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
CFL Fixture Under 15W	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%
CFL Fixture 16 to 24W	Table 15	93%	93%	61%	61%	61%	61%	61%	61%	0%	0%	0%	0%	0%	0%	0%	0%
CFL Fixture Over 24W	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%

[39] The IOU C&S program is developing a Title 20 proposal to recommend the adoption of Energy Star criteria for convection ovens as the Californian appliance efficiency standard. The effective date for the new standard is estimated to be January 1, 2015.

EERAM Measure	Standard Data Table	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
PS Exterior HID - Incandescent Base > 150W	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
PS Exterior HID - Incandescent Base <= 150W	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: <=7W Screw-In Indoor	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: 13W Screw-In Indoor	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: 18W Screw-In Indoor	Table 15	93%	93%	61%	61%	61%	61%	61%	61%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: 23W Screw-In Indoor	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
CFL: >25W Screw-In Indoor	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
LED Lighting 40W Equiv - Indoor	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%
LED Lighting 60W Equiv -	Table 15	94%	94%	94%	67%	67%	67%	67%	67%	0%	0%	0%	0%	0%	0%	0%	0%

EERAM Measure	Standard Data Table	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Indoor																	
LED Lighting 75W Equiv - Indoor	Table 15	93%	93%	61%	61%	61%	61%	61%	61%	0%	0%	0%	0%	0%	0%	0%	0%
LED Lighting 100W Equiv - Indoor	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
LED Lighting 120W Equiv - Indoor	Table 15	94%	64%	64%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	0%	0%	0%
T12 to T8 - 4ft	Table 20	100%	100%	100%	100%	75%	50%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%
T12 to T8 - 8ft	Table 20	100%	100%	100%	100%	75%	50%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 7. C&S Impact Vectors for Commercial Gas Measures

EERAM Measure	Standard Data Table	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Convection Oven	Footnote[40]	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Space Heating Boiler 85% Efficient	Table 21	100%	100%	86%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%

[40] The IOU C&S program is developing a Title 20 proposal to recommend the adoption of Energy Star criteria for convection ovens as the Californian appliance efficiency standard. The estimated new standard effective date is January 1, 2015.

Space Heating Boiler 95% Efficient	Table 21	100%	100%	95%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Pool Heater - 84% or more efficient	Table 19	100%	100%	100%	100%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%

Table 8. Impact Percentages for Energy Star Refrigerators

Measure Type	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	DOE[1]	Energy Star[2]	DOE[3] (Effective 1/1/2014)	
Efficiency Metric	Maximum Energy Use (kwh/year)			
Refrigerators and Refrigerator-Freezers with manual defrost	429	343	389	53%
Refrigerator-Freezer – partial automatic defrost	477	343	389	34%
Refrigerator-Freezers – automatic defrost with top-mounted freezer without through-the-door ice service and all refrigerators – automatic defrost	608	382	399	8%
Refrigerator-Freezers – automatic defrost with side-mounted freezer without through-the-door ice service	553	487	472	0%
Refrigerator-Freezers – automatic defrost with bottom-mounted freezer	565	443	498	46%
Refrigerator-Freezers – automatic defrost with top-mounted freezer with through-the-door ice service	565	452	558	93%
Refrigerator-Freezers – automatic defrost with side-mounted freezer with through-the-door ice service	613	490	608	96%
Compact Refrigerators and Refrigerator-Freezers with manual defrost	518	415	437	22%
Compact Refrigerator-Freezers – partial automatic defrost	542	433	457	22%
Compact Refrigerator-Freezers – automatic defrost with top-mounted freezer and compact all refrigerators – automatic defrost	615	492	581	75%
Compact Refrigerator-Freezers – automatic defrost with side-mounted freezer	657	525	597	55%
Compact Refrigerator-Freezers – automatic defrost with bottom-mounted freezer	636	508	581	60%
Average				47%

We assumed the average refrigerator volume was 20.5 cu.ft. for standard sized models and 7.75 cu.ft. for compact sized refrigerators, based on Energy Star documentation4.

Data sources:

1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF
2. http://www.energystar.gov/index.cfm?c=refrig.pr_crit_refrigerators
3. http://www1.eere.energy.gov/buildings/appliance_standards/pdfs/refrig_finalrule_frnotice.pdf
4. http://www.energystar.gov/ia/partners/prod_development/revisions/downloads/refrig/V5.0_Spec_Framework_Document.pdf

Table 9. Impact Percentages for Energy Star Dishwashers

Measure Type	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	DOE[1]	Energy Star[2]	EISA 2007[3] (Effective 1/1/2010)	
Efficiency Metric	EF (cycle/kwh)	EF (cycle/kwh)	EF (cycle/kwh)	
Standard size	0.46	0.66	0.61	28%
Compact size	0.62	0.92	0.83	31%
Average				30%

The new dishwasher standard is based on maximum annual energy consumption (<355kWh/year for standard sizes models and <260kWh for compact sized models). EF is calculated based on the assumption of 215 cycle/year specified in the DOE dishwasher test standard.

Data sources:

1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF
2. http://www1.eere.energy.gov/buildings/appliance_standards/residential/dishwashers.html
3. http://www.energystar.gov/index.cfm?c=dishwash.pr_crit_dishwashers

Table 10. Impact Percentages for Energy Star Freezers

Measure Type	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	DOE[1]	Energy Star[2]	DOE[3] (Effective 1/1/2014)	
Efficiency Metric	Maximum Energy Use (kwh/year)			
Upright Freezers with manual defrost	429	343	389	0%
Upright Freezers with automatic defrost	477	343	389	0%
Chest Freezers and all other Freezers except Compact Freezers	518	415	437	0%
Compact Upright Freezers with manual defrost	542	433	457	48%
Compact Upright Freezers with automatic defrost	615	492	581	49%
Compact Chest Freezers	657	525	597	47%
Average				24%

We assumed the average freezer volume was 20.5 cu.ft. for standard sized models and 7.75 cu.ft. for compact sized refrigerators, based on Energy Star documentation4.

Data sources:

1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF
2. http://www.energystar.gov/index.cfm?c=refrig.pr_crit_refrigerators
3. http://www1.eere.energy.gov/buildings/appliance_standards/pdfs/refrig_finalrule_frnotice.pdf

4. http://www.energystar.gov/ia/partners/prod_development/revisions/downloads/refrig/V5.0_Spec_Framework_Document.pdf

Table 11. Impact Percentages for Energy Star Room Air Conditioners

Measure Type		Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
		DOE[1]	Energy Star[2]	DOE[3] (Effective 6/1/2014)	
Efficiency Metric		EER	EER	EER	
Appliance Type	Louvered Sides				
AC only, < 6000 Btu/hr	N	9	9.9	10	0%
	Y	9.7	10.7	11	0%
AC only, 6000 to 7999 Btu/hr	N	9	9.9	10	0%
	Y	9.7	10.7	11	0%
AC only, 8000 to 13999 Btu/hr	N	8.5	9.4	9.55	0%
	Y	9.8	10.8	10.9	0%
AC only, 14000 to 19999 Btu/hr	N	8.5	9.4	9.3	11%
	Y	9.7	10.7	10.7	0%
AC only, >20000 Btu/hr	N	8.5	9.4	9.4	0%
	Y	8.5	9.4	9.2	22%
Heat pump, < 14000 Btu/hr	N	8.5	9.4	9.3	100%
Heat pump, >=14000 Btu/hr	N	8	8.8	8.7	100%
Heat pump, <20000 Btu/hr	Y	9	9.9	9.8	11%
Heat pump, >=20000 Btu/hr	Y	8.5	9.4	9.3	11%
Casement Only	-	8.7	9.6	8.7	11%
Casement Slider	-	9.5	10.5	9.5	11%
Average					17%

The overall C&S impact is calculated by averaging impacts to all product categories.
Data sources:
1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF
2. http://www.energystar.gov/index.cfm?c=roomac.pr_crit_room_ac
3. http://www1.eere.energy.gov/buildings/appliance_standards/residential/room_ac.html

Table 12. Impact Percentages for Energy Star Clothes Washer

Measure Type	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	DOE[1]	Energy Star[2]	EISA 2007[3] (Effective 1/1/2011)	
Efficiency Metric	MEF (cycles/kWh)			
Top-loading compact clothes washer	0.65	-	No change	100%
Top-loading standard clothes washer	1.26	2	No change	100%
Front loading clothes washer	1.26	2	No change	100%
Average				100%

EISA 2007 only added water efficiency requirements for top-loading standard clothes washer and front load clothes washers.

Data sources:

1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF
2. http://www.energystar.gov/index.cfm?c=clotheswash.pr_crit_clothes_washers
3. http://www1.eere.energy.gov/buildings/appliance_standards/pdfs/74fr12058.pdf

Table 13. Impact Percentages for Energy Star TV

Measure Type	Effective Standard in 2007	Measure Efficiency	New Standard 1	% Impact	New Standard 2	% Impact
	MICS[1]	Energy Star[2]	Title 20[3] (Effective 1/1/2011)		Title 20[3] (Effective 1/1/2013)	
Power consumption - on mode (Watt)	133	95	215		134.8	
Power consumption - off mode (Watt)	1.40	0.998	1		1	
Annual power consumption (kWh/year)	381	272	609	100%	384	100%

Based on Energy Star database, an average TV screen area was estimated to be 915 sq. ft. and was used to calculated power consumptions under the new Title 20 standards. On average, TVs are assumed to be on for 2803 hours and to be off for 5957 hours per year. Data in the above table indicates on average, TVs in the market already meet the new Title 20 standards, therefore, the new standards have no impact to the measure.

Data sources:

1. PG&E residential electric measure MICS
2. http://www.energystar.gov/index.cfm?c=tv_vcr.pr_crit_tv_vcr
3. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF

Table 14. Impact Percentages for High Efficiency AC Measures

Measure Type	Effective Standard in 2007	Measure Efficiency		New Standard	% Impact
	DOE[1]	MICS[2]		DOE[3] (Effective 1/1/2015)	
Efficiency Metric	SEER	SEER	Energy Savings (kWh/year)	SEER	
Rooftop or split system SEER 15	13	15	147	14	46%
Rooftop or split system SEER 18	13	18	204	14	61%
Residential HVAC for Hot-Dry Climates	13	-	126	14	37%
Evaporative Cooling (Swamp Cooler)	13	-	419	14	81%
Indirect Evaporative Cooling e.g., Coolerado	13	-	284	14	72%
Ductless Air Conditioning including VRF & Split Systems	13	-	113	14	30%
Residential Water-Cooled Heat Exchangers for HVAC Equipment	13	-	70	14	0%
Packaged A/C (>=65k 12 EER)	13	15	-	14	46%

Based on the annual energy savings for the SEER 15 AC, annual energy savings for a model with SEER 14 (new standard efficiency) is estimated to be 79 kWh/year. Energy savings under the new standard will be reduced by this amount. C&S impacts were calculated by comparing the reduced annual savings to the original measure savings.

Data sources:

1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF
2. Annual energy savings were from single family savings provided in the PG&E residential electric measure MICS. Annual savings for multi-family homes and for homes in other IOU service territories are expected to be different. However, the percentage impact by the standard update is assumed to be the same.
3. http://www1.eere.energy.gov/buildings/appliance_standards/residential/pdfs/cacfurn_dfr_confirmation.pdf

Table 15. Impact Percentages for CFL/LED Measures

		Measure Efficiency	New Standard 1	% Impact	New Standard 2	% Impact	New Standard 3	% Impact
			Title 201 (Effective 1/1/2008)		EISA 2007/Title 201 (Effective 1/1/2011 – 1/1/2013)		Title 201 (Effective 1/1/2018)	
Measure lamp type	Baseline lamp type	Watts	Watts		Watts		Watts	
LED Lighting 40W Equiv - Indoor	40W Incandescent	7	38	94%	29	67%	7	0%
CFL: <=7W Screw-In Indoor	40W Incandescent	7	38	94%	29	67%	7	0%
LED Lighting 60W Equiv - Indoor	60W Incandescent	13	57	94%	43	64%	13	0%
CFL: 13W Screw-In Indoor	60W Incandescent	13	57	94%	43	64%	13	0%
CFL: 18W Screw-In Indoor	75W Incandescent	18	71	93%	53	61%	18	0%
CFL: 23W Screw-In Indoor	100W Incandescent	23	95	94%	72	64%	23	0%
CFL: >25W Screw-In Indoor	>=120W Incandescent	25	120	100%	72	49%	25	0%
CFL Fixture	Assumed to be the same as the CFL: 23W Screw-In Indoor measure based on MICS							

The about impacts only apply to measures targeting general service incandescent lamps. While annual lamp energy consumptions depend on lamp wattage and annual, C&S impact percentages only depend on lamp wattages. Therefore, the C&S impact percentages in the above table are applicable to measures targeting single family, multi-family, and nonresidential buildings and indoor and outdoor applications.
Data Sources: http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF

Table 16. Impact Percentages for Central Furnace Measures

	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	DOE1	MICS	DOE2 (Effective 5/1//2013)	
Efficiency Metric	AFUE	AFUE	AFUE	
High Efficiency Furnace	78%	92%	80%	84%

Data sources:
1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF
2. http://www1.eere.energy.gov/buildings/appliance_standards/residential/pdfs/cacfurn_dfr_confirmation.pdf

Table 17. Impact Percentages for High Efficiency Space Heating Boiler Measures (Residential)

	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	DOE1	MICS	DOE1 (Effective 9/1/2011)	
Efficiency Metric	AFUE	AFUE	AFUE	
High Efficiency Space Heating Boiler	80%	90%	82%	22%

Data sources:
1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF

Table 18. Impact Percentages for the Residential Water Heater Measure

	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	DOE1	MICS	DOE2 (Effective 4/16/2015)	
Efficiency Metric	EF	EF	EF	
High Efficiency Water Heater	0.594	0.67	0.615	70%

Data sources:
1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF
2. http://www1.eere.energy.gov/buildings/appliance_standards/residential/pdfs/htgp_finalrule_fedreg.pdf

Table 19. Impact Percentages for the Pool Heater Measure

Measure Type	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	DOE[1]	MICS	DOE[2]	

			(Effective 4/15/2013)	
Efficiency Metric	Thermal Efficiency			
Pool Heater	78%	84%	82%	32%

Data sources:
1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF
2. http://www1.eere.energy.gov/buildings/appliance_standards/residential/pdfs/htgp_finalrule_fedreg.pdf

Table 20. T12 Fluorescent Lamp Phase-out Assumptions

Year	2013	2014	2015	2016	Beyond 2016
% Impact	100%	75%	50%	25%	0%

Most of the T12 fluorescent lamps will be able to meet the new DOE fluorescent lamp standards, which will take effect on July 14, 2012. Therefore, we assumed that the new federal standards would severely diminish the market share for T12 lamps. As a result, we have reported impact percentages that reflect a phase out of T12 lamps over time.

Table 21. Impact Percentages for Commercial Boilers Measures

	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	DOE1		DOE1 (Effective 9/1/2012)	
Efficiency Metric	AFUE	AFUE	AFUE	
Space Heating Boiler 85% Efficient	80%	85%	82%	86%
Space Heating Boiler 95% Efficient	80%	95%	82%	59%

Data sources:
1. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF

Table 22. Impact Percentages for Commercial Refrigerator Measures

	Effective Standard in 2007	Measure Efficiency	New Standard	% Impact
	MICS1	ES1	DOE2 (Effective 1/1/2010)	
Efficiency Metric	Maximum Daily Energy Consumption (kWh/day)			
Refrigerator Glass Doors	9.9	5.5	6.9	32%

Data sources:

1. http://www.energystar.gov/index.cfm?c=commer_refrig.pr_crit_commercial_refrigerators
2. http://energy.ca.gov/2010publications/CEC-400-2010-012/CEC-400-2010-012.PDF

Appendix B

IOU C&S Program Savings Potentials

Approach to C&S Savings Potentials

Starting from the 2006-08 program cycle, the CPUC began to treat IOU C&S programs as a resource program and to count C&S program energy savings towards meeting IOU minimum performance standards (MPS). Gross and net C&S program energy savings are defined in the CPUC 2006-08 C&S program evaluation report[41], which also provided verified energy savings from standards adopted through IOU pre-2006 C&S program efforts. In May 2011, the IOU statewide C&S team submitted updated C&S program energy savings estimates to the CPUC to support the 2010-12 C&S program evaluation. Supporting EXCEL workbooks were also submitted to provide detailed program data, assumptions, and energy savings calculation steps, which were based on the methodology defined in the CPUC 2006-08 C&S program evaluation report. The CPUC decided to use the PG&E version of the workbook to develop the C&S program evaluation plan[42] and this study used the same workbook to develop C&S program potentials. This model is the only data source that contains comprehensive C&S program information, and it has been reviewed by the CPUC ED without major objections raised. Therefore, it was selected for this C&S program potential assessment.

The following discussion addresses additional assumptions used in this study for C&S program potential calculation.

Scope of C&S programs

The baseline year of this potential study is 2007. This implies that energy savings potentials for voluntary programs are from measures above 2005 Title 24 and most of the 2005 Title 20 standards, as those were the standards in force in 2007. CPUC Decision 10-04-029, Decision Determining Evaluation, Measurement and Verification Processes for 2010 Through 2012 Energy Efficiency Portfolios[43], determined that 100% of pre-2006 verified savings from Codes and Standards advocacy work shall count toward achievement of CPUC energy savings goals for the 2010 through 2012 energy efficiency program cycle. According to this decision, energy

[41] Final Evaluation Report, Codes & Standards (C&S) Programs Impact Evaluation, California Investor Owned Utilities' Codes and Standards Program Evaluation for Program Years 2006-2008 Prepared by KEMA, Inc., The Cadmus Group, Inc., Itron, Inc., and Nexus Market Research, Inc. Utilities' Codes and Standards Program Evaluation for Program Years 2006-2008 Prepared by KEMA, Inc., The Cadmus Group, Inc., Itron, Inc., and Nexus Market Research, Inc.

[42] Draft Evaluation Plan, California Statewide Codes and Standards (C&S) Program, prepared by Allen Lee and Dan Groshans for CPUC, The Cadmus Group, Inc., September 6, 2011, page 12.

[43] http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/116710.htm

savings from the 2005 Title 24 code, which was obtained by comparing to 2001 Title 24 code, should be counted toward CPUC goals. The next edition of the California codes and standards took effect in 2008, which further raised the baseline for energy efficiency. In the results section, we separate the savings from standards that became effective before and after January 1, 2008 to facilitate further decisions by the CPUC in determining energy savings goals.

The C&S model does not include standards that are projected to be adopted by the CEC or DOE and will be effective after December 31, 2012. To support goal-setting for 2013-14 bridge period, we included additional standards, as listed in Table 23, in the analysis to reflect C&S activities that will take effect after December 31, 2012, based on information provided by IOU C&S programs. As indicated by the regulatory status in the table, some of these standards have not be adopted and the energy savings from these standards are highly uncertain.

Table 23 New C&S Program Activities in Addition to those Reported for 2010-12 Evaluation

Standards	Effective Date	Regulatory Status
Track 1 Future Title 20 Standards		
Computers - Tier 1 | Desktops, Notebooks	Jun 1, 2013	IOUs have submitted many proposals to the CEC for consideration. These standards will likely be considered based on coordination between the CEC and the IOU C&S program team Title 20
Computers - Tier 2 (incremental) | Desktops, Notebooks	Jun 1, 2014	
Multifaceted Reflector Lamps	Jun 1, 2013	
Decorative String Lights - Tier 1 | Mini, Standard, Jumbo, Rope	Jan 1, 2014	
Decorative String Lights - Tier 2 (incremental) | Mini, Standard, Jumbo, Rope	Jan 1, 2015	
Track 1 Future Federal Appliance Standards		
BR, ER and R20 Incandescent Reflector Lamps: Residential (Exempt IRLs)	Jan 1, 2013	Plan to be Adopted
External Power Supplies	Jan 1, 2013	Plan to be Adopted
Battery Chargers	Jan 1, 2013	Plan to be Adopted
Commercial Clothes Washers	Jan 1, 2013	Adopted
Residential Pool Heaters	Apr 1, 2013	Adopted
Residential Direct Heating Equipment	Apr 1, 2013	Adopted
Residential Refrigerators & Freezers	Jan 1, 2014	Adopted
Microwave Ovens [Standby]	Jun 1, 2014	Plan to be Adopted
Residential Clothes Dryers	Jun 1, 2014	Adopted
Residential Room AC	Jun 1, 2014	Adopted
Fluorescent Ballasts	Jan 1, 2014	Plan to be Adopted
Residential Central AC and Heat Pumps	Jan 1, 2015	Adopted
Residential Gas Fired Water Heaters	Apr 15, 2015	Adopted
Residential Electric Storage Water Heaters	Apr 15, 2015	Adopted

Residential Furnaces and Boilers	May 1, 2013	Adopted
Track 1 Future Title 24: 2013 Title 24		
All 2013 Title 24 Measures	Jan 1, 2014	CEC has published draft code language. The planned adoption date is May 7, 2012

Compliance rate and compliance enhancement

Post-2005 standards have not been evaluated and their compliance rate assumptions are based on compliance rates of pre-2006 appliance and building standards provided by 2006-08 C&S program evaluation results. Compliance rates for all post-2005 Title 24 building standards were assumed to be equal to 83%, the average compliance rate of the evaluated 2005 Title 24 standards weighted by potential savings. Compliance rates for all post-2005 Title 20 appliance standards were assumed to be equal to 85%, the average compliance rate of the evaluated 2005 Title 20 standards weighted by potential savings. Federal appliance standards were assumed to be 95%, higher than the average compliance rate of Title 20 standards. This is because federal standards provide uniform national requirements that are easier for manufacturers and distributors to meet.

The 2008 potential study included the estimates of energy savings from compliance rate improvement for residential new construction. The PG&E model includes the capability to assess energy savings from compliance improvement of individual standards. Without detailed market information to investigate compliance improvement characteristics of individual standards, we used a generic model to estimate savings potential from compliance improvement. It was assumed the compliance rate for each standard will increase linearly from its initial compliance rate to reach 100%. The assumptions for number of year to reach 100% compliance are listed in Table 24. Compliance improvements were assumed to start from 2010 or the second year when the standard takes effect, whichever is later.

Table 24 Compliance Rate Improvement Assumptions

Standards Group	Initial Compliance Rate	Number of Years to Achieve 100 % Compliance
Title 20	85% (for 2005 Title 20 standards, use evaluation results)	10
Title 24	83% (for 2005 Title 24 standards, use evaluation results)	6 (about 2 code cycles)
Federal Appliance Standards	95%	5

C&S Measure Life

The EERAM model defines the technical potentials as energy savings from one-time replacement of existing building or appliance stock with available program measures. Accordingly, the market potential is limited to a time span corresponding to one measure life, within which total market stock is expected to be replaced. Goals set under this method inherent assume incentives are targeted to one-time replacement only.

Standards provide sustained energy savings after effective dates. All appliance sales need to meet new standard requirements regardless if they are for new installation or existing appliance replacement. All future appliance sales associates with burn-out replacement as least meet the existing standards. For this reason, C&S energy savings are not limited to the first time replacement, but all future replacements. The CPUC evaluation protocol also states that measure life is not applicable to C&S program evaluation.

We provide two sets of C&S savings potentials for comparing the difference in considering C&S potentials. The first scenario includes savings from first-time and future replacements, as well as from new installations. The second scenario only includes savings from first-time replacement of existing stocks. Effectively, annual C&S savings from existing stocks are only counted for the number the years equal to the corresponding measure life. C&S savings from new installations are still counted in C&S savings potentials. Based on the market data used in the EERAM model, new installations are estimated represent 1% of the residential appliance sales and 2% of the commercial appliance sales.

Negative gas impacts

The PG&E model includes negative gas impacts due to interactive effects from certain standards that generate electric energy savings. This study used the same assumptions as those in the PG&E model to assess natural gas savings.

Results of C&S Program Energy Savings Potentials

Table 25 through Table 33 presents annual gross C&S program savings for each IOU from different standards groups.

Table 25 PG&E C&S Energy Savings Potential – Gross GWh - Measure Life Adjusted

Year	IOU C&S Reported for 2010-12 Evaluation (Effective in/before 2007)	IOU C&S Reported for 2010-12 Evaluation (Effective after 2007)	Track 1 Future Title 20	Track 1 Future Federal Appliance	Track 1 Future Title 20: 2013 T-24	Compliance Enhancement	Total
2010	241	137	0	0	0.0	4	140
2011	239	475	0	0	0.0	13	487
2012	224	657	0	0	0.0	25	682
2013	204	991	156	56	0.0	42	1245
2014	171	818	435	234	19.9	64	1571
2015	169	681	550	372	59.6	90	1753
2016	128	679	525	379	59.6	114	1757
2017	128	676	509	355	59.6	136	1734
2018	128	568	378	327	59.6	140	1473
2019	91	512	141	328	59.6	133	1174
2020	92	512	40	328	59.6	135	1074
2021	90	356	40	328	59.6	113	896
2022	90	341	19	328	59.6	110	858
2023	90	246	8	325	59.6	93	731
2024	90	235	8	317	59.6	91	711
2025	90	235	8	317	59.6	91	712

Table 26 PG&E C&S Energy Savings Potential – Gross MW - Measure Life Adjusted

Year	IOU C&S Reported for 2010-12 Evaluation (Effective in/before 2007)	IOU C&S Reported for 2010-12 Evaluation (Effective after 2007)	Track 1 Future Title 20	Track 1 Future Federal Appliance	Track 1 Future Title 20: 2013 T-24	Compliance Enhancement	Total
2010	46	31	0.0	0.0	0.0	0.9	78
2011	46	80	0.0	0.0	0.0	3.3	129
2012	44	108	0.0	0.0	0.0	6.0	158
2013	42	144	43.7	6.3	0.0	9.3	246
2014	38	131	79.8	48.2	8.0	14.0	319
2015	38	129	83.0	163.4	23.8	20.3	458
2016	32	129	81.3	164.2	23.8	26.7	456
2017	32	129	80.1	161.4	23.8	32.0	457
2018	32	108	38.3	158.2	23.8	32.5	393
2019	25	98	8.5	158.2	23.8	33.2	347
2020	25	98	7.7	158.2	23.8	36.3	350
2021	25	82	7.7	158.2	23.8	34.4	331
2022	25	81	3.6	158.2	23.8	33.8	325
2023	25	72	1.2	157.8	23.8	32.0	311
2024	25	70	1.2	126.6	23.8	30.0	276
2025	25	70	1.2	126.6	23.8	30.0	276

Table 27 PG&E C&S Energy Savings Potential – Gross MMT - Measure Life Adjusted

Year	IOU C&S Reported for 2010-12 Evaluation (Effective in/before 2007)	IOU C&S Reported for 2010-12 Evaluation (Effective after 2007)	Track 1 Future Title 20	Track 1 Future Federal Appliance	Track 1 Future Title 20: 2013 T-24	Compliance Enhancement	Total
2010	0.79	0.99	0.00	0.00	0.00	0.03	1.03
2011	0.81	1.01	0.00	0.00	0.00	0.24	1.25
2012	1.10	-1.98	0.00	0.00	0.00	0.40	-1.58
2013	1.45	-7.38	-3.07	-0.20	0.00	0.48	-10.17
2014	1.92	-2.90	-7.94	-2.87	0.49	0.47	-12.74
2015	1.95	1.09	-9.84	-3.10	1.45	0.60	-9.81
2016	2.00	1.13	-9.17	-2.85	1.45	0.63	-8.81
2017	2.00	1.14	-8.71	-2.51	1.45	0.49	-8.14
2018	2.00	1.94	-6.33	-2.13	1.45	0.62	-4.45
2019	2.51	2.71	-2.00	-2.14	1.45	0.96	0.99
2020	2.50	2.71	-0.15	-2.14	1.45	1.17	3.04
2021	1.62	4.89	-0.15	-2.14	1.45	1.47	5.53
2022	1.64	5.14	-0.15	-2.14	1.45	1.49	5.79
2023	1.64	6.40	-0.15	-2.26	1.45	1.69	7.14
2024	1.64	6.55	-0.15	-2.25	1.45	1.72	7.32
2025	1.64	6.54	-0.15	-2.25	1.45	1.72	7.32

Table 28 SCE C&S Energy Savings Potential – Gross GWh - Measure Life Adjusted

Year	IOU C&S Reported for 2010-12 Evaluation (Effective in/before 2007)	IOU C&S Reported for 2010-12 Evaluation (Effective after 2007)	Track 1 Future Title 20	Track 1 Future Federal Appliance	Track 1 Future Title 20: 2013 T-24	Compliance Enhancement	Total
2010	248	141	0	0	0.0	4	145
2011	247	490	0	0	0.0	13	503
2012	231	678	0	0	0.0	25	703
2013	211	1022	161	58	0.0	43	1285
2014	176	844	449	241	20.5	67	1621
2015	174	703	568	383	61.5	93	1808
2016	132	700	542	391	61.5	118	1812
2017	132	697	525	366	61.5	140	1789
2018	132	586	390	338	61.5	145	1519
2019	94	528	145	338	61.5	138	1211
2020	95	528	41	338	61.5	139	1108
2021	93	367	41	338	61.5	117	925
2022	93	352	20	338	61.5	114	885
2023	93	253	8	335	61.5	96	754
2024	93	242	9	327	61.5	94	734
2025	93	243	9	327	61.5	94	734

Table 29 SCE C&S Energy Savings Potential – Gross MW - Measure Life Adjusted

Year	IOU C&S Reported for 2010-12 Evaluation (Effective in/before 2007)	IOU C&S Reported for 2010-12 Evaluation (Effective after 2007)	Track 1 Future Title 20	Track 1 Future Federal Appliance	Track 1 Future Title 20: 2013 T-24	Compliance Enhancement	Total
2010	48	32	0.0	0.0	0.0	0.9	80
2011	47	82	0.0	0.0	0.0	3.4	133
2012	46	112	0.0	0.0	0.0	6.2	163
2013	43	149	45.1	6.5	0.0	9.6	253
2014	39	135	82.3	49.7	8.2	14.4	329
2015	39	133	85.6	168.5	24.5	20.9	472
2016	32	133	83.8	169.4	24.5	27.5	471
2017	33	133	82.6	166.5	24.5	33.0	472
2018	33	112	39.5	163.1	24.5	33.5	405
2019	26	102	8.8	163.2	24.5	34.3	358
2020	26	102	8.0	163.2	24.5	37.5	361
2021	26	85	8.0	163.2	24.5	35.5	342
2022	26	84	3.7	163.2	24.5	34.9	336
2023	26	74	1.2	162.7	24.5	33.0	321
2024	26	72	1.3	130.6	24.5	30.9	285
2025	26	72	1.3	130.6	24.5	30.9	285

Table 30 SCG C&S Energy Savings Potential – Gross MMT - Measure Life Adjusted

Year	IOU C&S Reported for 2010-12 Evaluation (Effective in/before 2007)	IOU C&S Reported for 2010-12 Evaluation (Effective after 2007)	Track 1 Future Title 20	Track 1 Future Federal Appliance	Track 1 Future Title 20: 2013 T-24	Compliance Enhancement	Total
2010	4.10	3.00	0.00	0.00	0.00	0.08	3.08
2011	4.10	8.78	0.00	0.00	0.00	0.45	9.24
2012	4.10	9.11	0.00	0.00	0.00	0.82	9.93
2013	4.10	9.24	0.00	0.84	0.00	1.20	11.28
2014	4.10	10.02	0.00	1.14	0.78	1.59	13.53
2015	4.10	11.36	0.00	2.16	2.33	2.14	17.98
2016	4.10	11.36	0.00	2.57	2.33	2.62	18.87
2017	4.10	11.36	0.00	2.57	2.33	2.80	19.06
2018	4.10	11.36	0.00	2.57	2.33	2.99	19.24
2019	4.10	11.36	0.00	2.57	2.33	3.16	19.42
2020	4.10	11.36	0.00	2.57	2.33	3.33	19.59
2021	2.65	11.36	0.00	2.57	2.33	3.33	19.59
2022	2.68	11.36	0.00	2.57	2.33	3.33	19.59
2023	2.68	11.36	0.00	2.33	2.33	3.32	19.34
2024	2.68	11.36	0.00	2.32	2.33	3.32	19.32
2025	2.68	11.36	0.00	2.32	2.33	3.32	19.32

Table 31 SDG&E C&S Energy Savings Potential – Gross GWh - Measure Life Adjusted

Year	IOU C&S Reported for 2010-12 Evaluation (Effective in/before 2007)	IOU C&S Reported for 2010-12 Evaluation (Effective after 2007)	Track 1 Future Title 20	Track 1 Future Federal Appliance	Track 1 Future Title 20: 2013 T-24	Compliance Enhancement	Total
2010	56	32	0	0	0.0	1	33
2011	56	111	0	0	0.0	3	114
2012	52	154	0	0	0.0	6	160
2013	48	232	37	13	0.0	10	291
2014	40	191	102	55	4.7	15	368
2015	40	160	129	87	13.9	21	410
2016	30	159	123	89	13.9	27	411
2017	30	158	119	83	13.9	32	406
2018	30	133	88	77	13.9	33	345
2019	21	120	33	77	13.9	31	275
2020	22	120	9	77	13.9	32	251
2021	21	83	9	77	13.9	27	210
2022	21	80	4	77	13.9	26	201
2023	21	58	2	76	13.9	22	171
2024	21	55	2	74	13.9	21	166
2025	21	55	2	74	13.9	21	167

Table 32 SDG&E C&S Energy Savings Potential – Gross MW - Measure Life Adjusted

Year	IOU C&S Reported for 2010-12 Evaluation (Effective in/before 2007)	IOU C&S Reported for 2010-12 Evaluation (Effective after 2007)	Track 1 Future Title 20	Track 1 Future Federal Appliance	Track 1 Future Title 20: 2013 T-24	Compliance Enhancement	Total
2010	11	7	0.0	0.0	0.0	0.2	18
2011	11	19	0.0	0.0	0.0	0.8	30
2012	10	25	0.0	0.0	0.0	1.4	37
2013	10	34	10.2	1.5	0.0	2.2	57
2014	9	31	18.7	11.3	1.9	3.3	75
2015	9	30	19.4	38.2	5.6	4.7	107
2016	7	30	19.0	38.4	5.6	6.2	107
2017	7	30	18.7	37.8	5.6	7.5	107
2018	7	25	9.0	37.0	5.6	7.6	92
2019	6	23	2.0	37.0	5.6	7.8	81
2020	6	23	1.8	37.0	5.6	8.5	82
2021	6	19	1.8	37.0	5.6	8.0	78
2022	6	19	0.8	37.0	5.6	7.9	76
2023	6	17	0.3	36.9	5.6	7.5	73
2024	6	16	0.3	29.6	5.6	7.0	65
2025	6	16	0.3	29.6	5.6	7.0	65

Table 33 SDG&E C&S Energy Savings Potential – Gross MMT - Measure Life Adjusted

Year	IOU C&S Reported for 2010-12 Evaluation (Effective in/before 2007)	IOU C&S Reported for 2010-12 Evaluation (Effective after 2007)	Track 1 Future Title 20	Track 1 Future Federal Appliance	Track 1 Future Title 20: 2013 T-24	Compliance Enhancement	Total
2010	0.09	0.11	0.00	0.00	0.00	0.00	0.12
2011	0.09	0.11	0.00	0.00	0.00	0.03	0.14
2012	0.12	-0.23	0.00	0.00	0.00	0.05	-0.18
2013	0.17	-0.84	-0.35	-0.02	0.00	0.05	-1.16
2014	0.22	-0.33	-0.90	-0.33	0.06	0.05	-1.45
2015	0.22	0.12	-1.12	-0.35	0.17	0.07	-1.11
2016	0.23	0.13	-1.04	-0.32	0.17	0.07	-1.00
2017	0.23	0.13	-0.99	-0.29	0.17	0.06	-0.92
2018	0.23	0.22	-0.72	-0.24	0.17	0.07	-0.51
2019	0.29	0.31	-0.23	-0.24	0.17	0.11	0.11
2020	0.28	0.31	-0.02	-0.24	0.17	0.13	0.35
2021	0.18	0.56	-0.02	-0.24	0.17	0.17	0.63
2022	0.19	0.58	-0.02	-0.24	0.17	0.17	0.66
2023	0.19	0.73	-0.02	-0.26	0.17	0.19	0.81
2024	0.19	0.74	-0.02	-0.26	0.17	0.20	0.83
2025	0.19	0.74	-0.02	-0.26	0.17	0.20	0.83

ATTACHMENT C

ADOPTED FUND SHIFTING RULES, as modified by D.09-09-047, D.05-09-043, D.06-12-013, and D.07-10-032

Fund Shifting Category	Shifts Among Budget Categories, Within Program	Shifts Among Programs, Within Category	Shifts Among Categories
Statewide Program	• No formal Commission review/approval required	• No formal Commission review/approval required	• Advice letter required for shifts >15% between statewide, program categories in either direction (based on each category funding level) per annum. See rules below for shifting away from ET, ME&O, and C&S.
Third Party Programs (See Notes Below)	• No formal Commission review/approval required	• No formal Commission review/approval required	• Advice Letter required for shifts >15% between statewide, program categories in either direction (based on total category funding level) per annum. • Advice Letter is required if allocation to competitively bid programs falls below 20% of total portfolio funding.
Governmental Programs (See Notes Below)	• No formal Commission review/approval required	• No formal Commission review/approval required	• Advice Letter required for shifts >15% between statewide, program categories in either direction (based on category funding level) per annum.
Other Programs (See Notes Below)	• No formal Commission review/approval required	• No formal Commission review/approval required	• Advice Letter required for shifts >15% between statewide, program categories in either direction (based on category funding level) per annum.
Statewide C&S / ET / Marketing Education & Outreach (See Notes Below)	• No formal Commission review/approval required	• Advice Letter required for shifts that would reduce any of these programs by more than 1% of budgeted levels	• Advice letter required for shifts that would reduce any of these programs by more than 1% of budgeted levels.
Residential lighting Incentive Program for basic CFLs (sub-program under Statewide Residential	• No formal Commission review/approval required	• Funds cannot be shifted into the program; however, funds can be shifted out of the program.	• Funds cannot be shifted into the program; however, funds can be shifted out of the program.

Fund Shifting Category	Shifts Among Budget Categories, Within Program	Shifts Among Programs, Within Category	Shifts Among Categories
Program)			
EM&V	Yes, within utility portion. Fund shifting between the utility and ED portions only with Assigned Commissioner or ALJ approval, in consultation with Joint Staff.	Not Applicable - Single Program	Assigned ALJ or Commissioner ruling required to shift funds out of EM&V by any amount.

Notes

- Any fund shifting will be shown on the quarterly fund shifting report which will be provided to the Energy Division beginning 7/1/10 (and every 90 days thereafter).
- No program or sub-program shall be eliminated except through the Advice Letter process.
- For adding new programs, except those chosen during a competitive process, an Advice Letter must be filed.
- "Third-Party Programs" include any third-party programs that are competitively bid and count towards the 20% competitive bidding requirement. In aggregate, these programs constitute a thirteenth category (in addition to the 12 statewide program categories), subject to the 15% fund-shifting rule requiring an Advice Letter if the amount transferred from this category is greater than 15% in either direction. Fund-shifting of any amount within this thirteenth program category is allowed without an Advice Letter.
- "Governmental Programs" include local government partnerships and state / institutional government partnerships. In aggregate, these programs constitute a fourteenth category (in addition to the 12 statewide program categories, and third-party programs), subject to the 15% fund-shifting rule requiring an Advice Letter if the amount transferred from this category is greater than 15% in either direction. Fund-shifting of any amount within this fourteenth program category is allowed without an Advice Letter.
- "Other Programs" include local programs, and on-bill and other financing programs. In aggregate, these programs constitute a fifteenth category (in addition to the 12 statewide program categories, third-party programs, and governmental programs), subject to the 15% fund-shifting rule requiring an Advice Letter if the amount transferred from this category is greater than 15% in either direction. Fund-shifting of any amount within this fifteenth program category is allowed without an Advice Letter.
- The 15% fund-shifting rule, requiring an Advice Letter if the amount transferred from this category is greater than 15% in either direction, is applied to the category funding level in the authorized budget adopted in the compliance filing pursuant to the most recent authorizing decision (or the decision itself, if there is no compliance filing).
- Utility program administrator may carryover/carryback funding during the current program cycle without triggering a review/approval process.
- Changes to incentive levels or modifications to program design (such as changes to customer eligibility requirements) will not trigger Energy Division or formal Commission review. Program administrators will notify the Commission of all incentive level changes that take place through the Program Implementation Plan Addendum process.
- Where an advice letter is required under these rules, absent a protest or written data request by Energy Division for additional information by the end of the 20-day protest period, the request will become effective on the twentieth day after filing.
- Marketing Education & Outreach and EM&V programs are subject to overall caps adopted in Section 4.5 of D.09-09-047. Program administrators may request fund shifting augmentations if they wish to increase budget caps. In addition, the fund shifting changes adopted in D.09-09-047 are not intended to change Section II, Rule 11 of the Energy Efficiency Policy Manual as applied to EM&V and ME&O spending below the adopted caps, nor to change the fund shifting rules for C&S or Emerging Technologies programs.

ATTACHMENT D

2010-2012 Reporting Requirements for Energy Efficiency

Version: 01
Date: 08/04/11

INTRODUCTION

The first section below summarizes the reporting requirements[44] that have been established for the 2010-2012 portfolio cycle in meetings between Energy Division staff and IOU Staff. This includes monthly, quarterly, and annual reporting requirements, as well as ad-hoc and tracking data reporting requirements.

I. Monthly Reports

Starting September 1, 2010, and each month thereafter, the utilities are required to submit a monthly status report using the MS Excel monthly reporting template. The report period for each monthly report will be *through the month prior the submittal date.* In other words, the September 1, 2010 report will represent program and portfolio activity through July 30, 2010.

a. Program Definitions

Energy Division asked the utilities to assign one of the values below for each program in the utility portfolio. This table would allow Energy Division staff to quickly group the monthly expenditure and energy savings data.

i. Target Sector
   1. Agricultural
   2. Commercial
   3. Cross-Cutting
   4. Industrial
   5. Residential

ii. Implementer
   1. IOU Core/Statewide
   2. Local Government Partnership
   3. Third/Local Party Implementor

iii. Type

[44] All templates referenced in this document will eventually be stored under the "Guidance" tab of http://eega.cpuc.ca.gov

1. Resource
2. Non-Resource

iv. Category

1. Codes and Standards
2. Emerging Technologies
3. Integrated Demand-Side Management
4. Marketing Education and Outreach
5. Market Transformation
6. New Construction
7. On-Bill Financing
8. Retrofit
9. Workforce Education and Training
10. Zero Net Energy

v. Impact Type

1. Custom and Deemed Impacts
2. Custom Impacts
3. Deemed Impacts
4. Not Applicable

b. Frequency

The table below defines the current "Report Month" that each monthly report will cover and the corresponding due date.

Report Month	**Monthly Report Due Date**
July 2010	September 1, 2010
August 2010	October 1, 2010
September 2010	November 1, 2010
October 2010	December 1, 2010
November 2010	January 1, 2011
December 2010	February 1, 2011
January 2011	March 1, 2011
February 2011	April 1, 2011
March 2011	May 1, 2011
April 2011	June 1, 2011
May 2011	July 1, 2011
June 2011	August 1, 2011
July 2011	September 1, 2011
August 2011	October 1, 2011
September 2011	November 1, 2011
October 2011	December 1, 2011
November 2011	January 1, 2012
December 2011	February 1, 2012
January 2012	March 1, 2012
February 2012	April 1, 2012

Report Month	Monthly Report Due Date
March 2012	May 1, 2012
April 2012	June 1, 2012
May 2012	July 1, 2012
June 2012	August 1, 2012
July 2012	September 1, 2012
August 2012	October 1, 2012
September 2012	November 1, 2012
October 2012	December 1, 2012
November 2012	January 1, 2013
December 2012	February 1, 2013

II. Quarterly Reports

a. Reports That Are No Longer Submitted

Energy Division reduced the amount of quarterly reporting in 2010-2012 in order to reduce the administrative burden of reporting and thus to lower administrative costs. This was also done to streamline the reporting process to reduce the amount of "source data" that is available. The following reports are no longer submitted by the utilities in 2010-2012: E3 output sheets, Quarterly Narratives, and Quarterly Spreadsheets.

b. Cap and Target Report

This report template was developed by the utilities. The report is supposed to be used to identify if a particular budget category is exceeding the percentage caps and target set by OP 13 of D.09-09-047. The report shows utility expenditures, third party expenditures and total portfolio expenditures, to-date, broken up by the following budget categories and sub-categories:

i. Administrative Costs
    1. IOU
    2. Third Party and Partnership
ii. Marketing and Outreach Costs
    1. Marketing and Outreach
    2. Statewide Marketing and Outreach
iii. Direct Implementation Costs
    1. Incentives and Rebates
    2. Non-incentives and Rebates
    3. Target Exempt Programs
iv. EMV Costs

c. Fund Shift Report

This report was developed by the utilities in coordination with Energy Division. This report lists every program in a utility portfolio and provides the following fields:

i. 2010-2012 Authorized Budget

ii. 2011 Authorized Budget
iii. Roll Over from/Carry Forward to Previous Year
iv. 2011 Operating Budget
v. Funds Transferred In (Cumulative for Year)
vi. Funds Transferred Out (Cumulative for Year)
vii. Revised 2011 Operating Budget
viii. Annual Fund Shift Threshold
ix. Advice Letter Submitted & Approved

d. Frequency of Cap and Target and Fund Shifting Reports:

Quarterly Report Period	Quarterly Report Due Date
Q4 2010 - Through December 2010	March 1, 2011
Q1 2011 - Through March 2011	June 1, 2011
Q2 2011 - Through June 2011	September 1, 2011
Q3 2011 - Through September 2011	December 1, 2011
Q4 2011 - Through December 2011	March 1, 2012
Q1 2012 - Through March 2012	June 1, 2012
Q2 2012 - Through June 2012	September 1, 2012
Q3 2012 - Through September 2012	December 1, 2012
Q4 2012 - Through December 2012	March 1, 2013

III. Utility Tracking Data

The utility tracking data will be the one source that is used for reporting utility accomplishments, evaluation sampling, and cost effectiveness calculations.

a. Tracking Data Specifications for Q42010, Q1 2011, and Q2 2011 data
   i. The data dictionary for the Q42010, Q1 2011, and Q2 2011 tracking data can be found at http://eega.cpuc.ca.gov under the "Guidance" tab.

b. Tracking Data Specifications for Q32011 and on
   i. The data specification for the Q3 2011 tracking dataset , and subsequent tracking datasets will use a different data specification that utilizes more lookup tables than the original data specification. The data specification will be posted under the "Guidance" tab of http://eega.cpuc.ca.gov.

c. Frequency of Submittal of Tracking Data

Quarterly Report Period	Quarterly Report Due Date
Q4 2010 - Through December 2010	March 1, 2011
Q1 2011 - Through March 2011	June 1, 2011
Q2 2011 - Through June 2011	September 1, 2011
Q3 2011 - Through September 2011	December 1, 2011
Q4 2011 - Through December 2011	March 1, 2012
Q1 2012 - Through March 2012	June 1, 2012
Q2 2012 - Through June 2012	September 1, 2012
Q3 2012 - Through September 2012	December 1, 2012
Q4 2012 - Through December 2012	March 1, 2013

IV. Program Implementation Plans

a. Compliance Filing PIP
These are the PIPs that were filed as part of the utilities compliance filings

b. Red-Lined PIPs
These PIPs are the same as the "Current PIPs" but have tracked changes turned on

c. Current PIPs
The utilities re-submitted all of their PIPs in the beginning of 2011 (on 1/18/2011, 1/31/2011, and 2/28/2011). These will be the PIPs from which all future changes are based.

d. PIP Addendum Process
Starting in August 2011, the PIPs will be updated using a new PIP addendum process. The template below was developed in coordination with the joint utilities and with feedback from the ED planning team.

i. Template and Trigger Definition – There are 11 situations that - when triggered – will require a PIP addendum be posted. These 11 "triggers" are defined in a document that can be found at http://eega.cpuc.ca.gov under the "Guidance" tab.

V. Program Performance Metrics Annual Reporting

a. Excel Template
The utilities and Energy Division worked on a template for reporting annual PPM's . This template can be found at http://eega.cpuc.ca.gov under the "Guidance" tab.

b. Narrative Template
Each annual PPM report must include a narrative. The narrative template can be found at http://eega.cpuc.ca.gov under the "Guidance" tab.