BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Reform the Commission's Energy Efficiency Risk/Reward Incentive Mechanism	R.12-01-005 (Filed January 12, 2012)

COMMENTS OF THE UTILITY REFORM NETWORK ON REFORMS TO THE ENERGY EFFICIENCY INCENTIVE MECHANISM FOR 2013-2014

Marcel Hawiger, Energy Attorney
Cynthia Mitchell, Energy Economics, Inc.

THE UTILITY REFORM NETWORK

115 Sansome Street, Suite 900
San Francisco, CA 94104
Phone: (415) 929-8876 ex. 311
Fax: (415) 929-1132
E-mail: marcel@turn.org

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COMMENTS OF THE UTILITY REFORM NETWORK ON REFORMS TO THE ENERGY EFFICIENCY INCENTIVE MECHANISM FOR 2013-2014

Pursuant to the directions in the June 15, 2012 "Administrative Law Judge's Ruling Calling for Comments on Incentive Reform Issues" ("the ALJ Ruling"), the Utility Reform Network ("TURN") respectfully submits these comments concerning a Risk/Reward Incentive Mechanism ("RRIM") for utility energy efficiency activities conducted in 2013-2014.

1 Introduction and Summary of Recommendations

The ALJ Ruling broadly requests that parties provide recommendations for an incentive mechanism to reward utility shareholders for energy efficiency activities performed in the upcoming 2013-2014 program cycle. The ALJ Ruling instructs parties to address whether the policy guidance provided in D.12-05-015 warrants revisions to the RRIM in effect during 2006-09, revisions to any of the proposals previously made by parties, or the adoption of an entirely new incentive mechanism. In particular, the ALJ Ruling highlights the Commission's directives for the utilities to deliver both resource savings as well as transform markets, the need to address different types of programs, the desire to promote programs that achieve deeper long-term savings, and the goal of promoting measures with higher up-front costs and longer design lives.

The ALJ Ruling asks parties to recommend incremental changes to the existing RRIM only for resource programs, as well as to propose an entirely new RRIM if so desired. The ALJ Ruling specifically asks that parties justify the shared savings rate and earnings cap associated with a potential incremental change to the existing RRIM. Lastly, the ALJ Ruling provides a very useful set of questions as a starting point for discussion.

In response to the ALJ Ruling, TURN here provides an entirely new RRIM (detailed in Section 4), which would apply to *all programs* contained in the 2013-2014 portfolios. TURN's new proposal consists of a two-part incentive payment. The first part would pay a fixed 2.5% of actual spending, contingent on at least 50% of recorded spending covering incentives, rebates and financing program costs. This incentive would promote all activities and provide an incentive to maximize participation and lower up-front measure costs. The second part would pay incentives as a linear function of performance based on two metrics tied to HVAC and whole house retrofits. This incentive would promote activities intended to promote deeper savings due to more efficient HVAC installations in hotter climate zones. The entire incentive payment would be capped at 5% of *budgets*, or approximately $50 million per year for all four utilities.

TURN urges the Commission to abandon the shared savings RRIM, not least due to the pernicious impact on EM&V activities of using calculated savings as a performance measure (discussed in Section 3). TURN provides a theoretical and practical analysis of why the "supply-side equivalence" model for setting the sharing rate and cap is inaccurate and inappropriate (discussed in Section 2). However, if the Commission chooses to simply make an incremental change to the RRIM for 2013-2014, then TURN recommends that the "supply-side equivalence" sharing rate must be reduced to account for the significantly reduced risks associated with using *ex ante* parameter values and the financial benefits to the utility of having to finance less investment, as summarized in Section 5.

2 The Amount of Shareholder Earnings Potential Under Any Mechanism Should Be Capped at an Appropriate Level That Motivates Management Performance, Not at a Level Based on Supply-Side Equivalence

2.1 The Existing RRIM Uses "Supply-Side Equivalence" to Determine the Cap on Earnings

Utility incentive mechanisms, including for reliability, safety and customer service, proliferated in the 1990's and the early 2000's as part of a move towards "performance based ratemaking."[1] Many of these mechanisms have now been abandoned or terminated due to a return to cost of service paradigms or due to fundamental concerns regarding measurement accuracy and falsification.[2] Any incentive mechanism, whether based on shared savings or some other measure, must define potential levels of shareholder profits. For example, PG&E's former reliability incentive mechanism rewarded shareholders a maximum of $12 million based on changes in per minute SAIDI and SAIFI statistics.[3] Most PBR incentive mechanisms had defined live bands which limited maximum earnings.

The RRIM uses a sharing rate that was derived based on "supply-side equivalence." This model estimates the profits which a utility would have made if it had invested in generation and transmission and distribution ("T&D") so as to produce and deliver the amount of energy and demand avoided by energy efficiency. A sharing rate is derived so as to provide shareholders with profits comparable to the "lost earnings" from supply-side investments. In D.07-09-043 the Commission determined that supply-side equivalence resulted in utility earnings of $450-$700 million, and adopted a sharing rate designed to achieve the low end of this range. While "supply-side equivalence" has been used in conjunction with a "shared savings" mechanism, supply-side

[1] TURN has not compiled a complete list of citations describing the status of these mechanisms. Many were authorized in utility rate cases. See, for example, D.04-07-022, Sec. 13.2 discussion.
[2] See, for example, D.08-09-038 (Finding falsifications in SCE PBR reporting for customer satisfaction incentive mechanism.)
[3] See, Resolution E-4003, p. 2, October 19, 2006.

equivalence is simply a method of calculating the earnings cap that could be applied to any type of incentive mechanism.

2.2 Supply-Side Equivalence Should Not be Used to Set Potential Shareholder Earnings Levels Irrespective of the Incentive Mechanism Adopted to Measure Performance

The ALJ Ruling asks a number of significant questions concerning the use of "supply-side equivalence" as a basis for maximum earnings, including:

> "What threshold of earnings is necessary to motivate IOU management to maintain a commitment to EE as a core part of regulated operations?"
>
> "What limits or caps on earnings are appropriate to ensure that ratepayers are protected in terms of just and reasonable rates and that they receive appropriate benefits to justify payment of incentives."
>
> "Is supply-side equivalent earnings an appropriate proxy for the magnitude of incentive earnings levels, considering both peak load and energy consumption load impacts …. Do other measures better represent the avoided costs and net benefits of energy efficiency to ratepayers?"[4]

The answer to these fundamental questions is resoundingly that supply-side equivalence is **not** the appropriate proxy for incentives for energy efficiency activities. As discussed in this section, supply-side equivalence rests on shaky assumptions regarding corporate finance and corporate behavior. More importantly, prior utility testimonies, evidence from the success of other incentive mechanisms, and comparison to energy efficiency incentives in other states show that lower incentive levels are sufficient to motivate management to pay attention to a corporate profit center.

[4] ALJ Ruling at 14.

The ALJ Ruling is also correct that the present model of avoided costs, based on a system-wide resource analysis, is likely inaccurate. This is a complex topic that the Commission is just starting to tackle.[5] However, *even if* the present E3 avoided cost model is used as a starting point for monetizing the value of energy efficiency savings, the results must be adjusted to account for reduced operational and financial risks, as discussed in Section 5 below.

2.2.1 The Basis for Supply-Side Equivalence Rests on a Dubious Assumption

The ALJ Ruling quotes from D.12-05-015, which states that "the goal of the incentive mechanism is to ensure that energy efficiency is viewed through the same financial lens as supply-side investments, to foster creativity within the utilities' engineering and management and to ensure that energy efficiency savings (not merely savings accounting) become a top priority for the utilities."[6] The first enunciated goal – "to ensure the same financial lens as supply-side investments" - restates the principle of supply-side equivalence.

The theory of supply-side equivalence is based on a shaky conception of utility corporate finance. Supply-side equivalence assumes that an investor-owned utility can become indifferent to profits from 'supply-side investments' – which increase sales, revenues, and corporate size – versus profits from demand-side investments - which, if truly effective, would in the long run reduce sales, revenues and corporate size.[7]

TURN has long argued that this conception of corporate behavior ignores various finance

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[5] Two-days of workshops concerning the E3 avoided cost model for EE, DG and DR were just held on June 28 and 29, 2012.

[6] ALJ Ruling, p. 2-3 (quoting from D.12-04-015).

[7] While 'supply-side equivalent' incentives might maintain corporate profits, utility revenues and corporate size would decrease, since most energy efficiency activities (appliance sales, home weatherization, industrial plant retrofit, etc.) are conducted by independent third party contractors and ESCOs.

and organizational factors which motivate utilities to increase sales as well as profits. Increases in per capita consumption are one of the justifications for utility spending on T&D as well as on generation. On a very simplistic level, TURN suggests that a business model based on profit streams from simultaneously 1) selling a commodity, and 2) selling services to reduce the need for that commodity, is not an efficient long term business strategy. At a minimum, it is a strategy that must increase ratepayer costs due to excessive profit streams, gaming based on short term supply/demand balances[8] and administrative overheads.

2.2.2 The Utilities Have Repeatedly Stated that Incentives Are Necessary to Motivate Management, Not to Offset Supply-Side Earnings

The assumption of the 'supply-side comparability' model was that the utilities could become indifferent as between supply and demand activities. But in fact, even the utilities themselves have agreed that the purpose of incentives for energy efficiency is not to change fundamental corporate goals or business drivers. Rather, incentives are a tool to make a certain activity sufficiently profitable so that management would focus attention and resources on that department. All the utilities agreed with this basic proposition in sworn testimonies submitted in 2006, when the Commission evaluated proposals for incentives for 2006-2008:

> PG&E: The purpose of using supply-side comparability is not necessarily because utility shareholders are harmed due to the removal of an investment opportunity. Rather it is to provide a reasonable incentive that is **competitive with other incentives that attract the focused attention of utility planners and management** so that they go the extra mile to achieve savings at or near, or even above, the 100-percent level.[9]

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[8] Significantly, supply-side investments are lumpy, whereas EE investments are quite dispersed and small. A utility can easily game spending based on short-term supply/demand balances. We believe that utility reductions in EE spending in the late 1980's are easily linked to near term excess capacity due to the energizing of SONGS and Diablo Canyon.

[9] R.06-04-010, Exh. 33, p. 1-3, Miller direct testimony, PG&E.

PG&E agrees that its investors are not harmed as a result of past or currently planned CEE programs *per se*, and that utility investors do not need compensation for any lost opportunities to invest in utility infrastructure. Investors, who would otherwise purchase utility stocks and bonds, can deploy their cash in other investments if it is not needed in the utility business.[10]

SCE: There is no single benchmark that the Commission should utilize in the approval of an appropriate shared savings rate. Multiple criteria for establishing a level of earnings have been utilized in the past in connection with energy efficiency incentives and should continue to be utilized in this proceeding – including supply-side comparability, a fair allocation of benefits between customers and shareholders, and **management attention to energy efficiency as a resource**. SCE has considered all of these criteria in developing its shared savings rate.[11]

As a policy, shareholder incentives for the development and delivery of cost-effective energy efficiency at levels which create resource benefits for the customer will encourage management attention at all levels and in all aspects of the utility. It is important that the shared savings rate adopted by the Commission in this proceeding allow for the appropriate sharing of success related to energy efficiency program results which could **attract and retain management attention** not only in the portion of the utility responsible for energy efficiency day-to-day operations, but at all levels and in all departments of the utility.[12]

SDG&E: In order to facilitate the most cost effective and successful energy efficiency programs, incentives need to be of sufficient size and structured in such a manner to **encourage utility management to give similar attention** to these programmatic opportunities that it does to rate based investment opportunities.[13]

TURN does not dispute that making energy efficiency a profit center might "attract management attention" over the long run. However, the next obvious question is what level of profits is adequate without enriching the utilities with windfall profits? The bottom line is that there is no theoretical or practical basis for setting shareholder incentives for energy efficiency based on "avoided supply side investments." It is precisely for this reason that TURN supported

[10] R.06-04-010, Exh. 34, p. 1-3, Patterson rebuttal testimony, PG&E.
[11] R.06-04-010, Exh. 17, p. 2, Rodrigues, SCE.
[12] R.06-04-010, Exh. 17, p. 9:8-14, Ziegler, SCE.
[13] R.06-04-010, Exh. 36, p. MMS-1 to MMS-2, Schneider, Sempra.

a "management fee" structure as a more appropriate basis to reward utility employees and shareholders.

In 1993 and 1994 the Commission relied heavily on the conclusions of the Wisconsin Energy Conservation Corporation for the conclusion that shareholder incentives during the 1990-93 time frame contributed significantly to resurrecting the utilities waning interest in energy efficiency in the late 1980's.[14] In pleadings submitted in R.06-04-010 TURN provided data showing that utility spending on energy efficiency plummeted just one year later, in 1995. The data indicate that there has been little correlation between even very large incentives and energy efficiency activities, and that broader market changes and regulatory policies have a greater impact on utility energy efficiency activity.

2.2.3 Supply-Side Equivalence Ignores Evidence that Other PBR mechanisms Motivate Performance at Lower Profit Levels

It is useful to compare the structure of the RRIM, as approved in D.07-09-043 and modified subsequently several times, to other incentive mechanisms authorized by this Commission over the past twenty years as a basis for evaluating the appropriateness of the amounts of profits available under different mechanisms.

In general, there are two types of incentive mechanisms. One type sets the benchmark based on a target *cost forecast*, and the "benefits" that are shared between shareholders and ratepayers are the savings if actual costs come in below the benchmark. This is the nature of "base revenue PBR" mechanisms for setting revenue requirements, as well as for gas procurement incentive mechanisms to replace reasonableness reviews.[15] The potential rewards

[14] See, for example, D.93-09-078, 51 CPUC 2d 371, 375-376, Finding of Fact 8, Conclusion of Law 2.

[15] Though gas incentive mechanisms use an exogenous cost benchmark based on market prices.

are naturally bounded by limits to cost reductions, though these mechanisms also use sharing bands, both on the upside and downside, to limit shareholder gains or losses.

The other type of incentive mechanism is one that sets the benchmark based on a performance metric, potentially including dead bands, sharing bands and caps. This is the nature of various PBR incentive mechanisms, which have used as benchmarks the number of minutes of customer interruption (reliability incentive mechanism), generation plant load factor, the number of OSHA recordable incidents (employee safety incentive).[16] There is no "sharing" of financial benefits, but rather shareholders are rewarded by assigning a dollar value to a specified level of performance above or below the target. The improved performance is presumed to result in ratepayer benefits (either quantified or not). Setting sharing rates, caps, dead bands and live bands requires consideration of the benefits derived from improved performance and the potential marginal costs necessary to achieve improvements.[17]

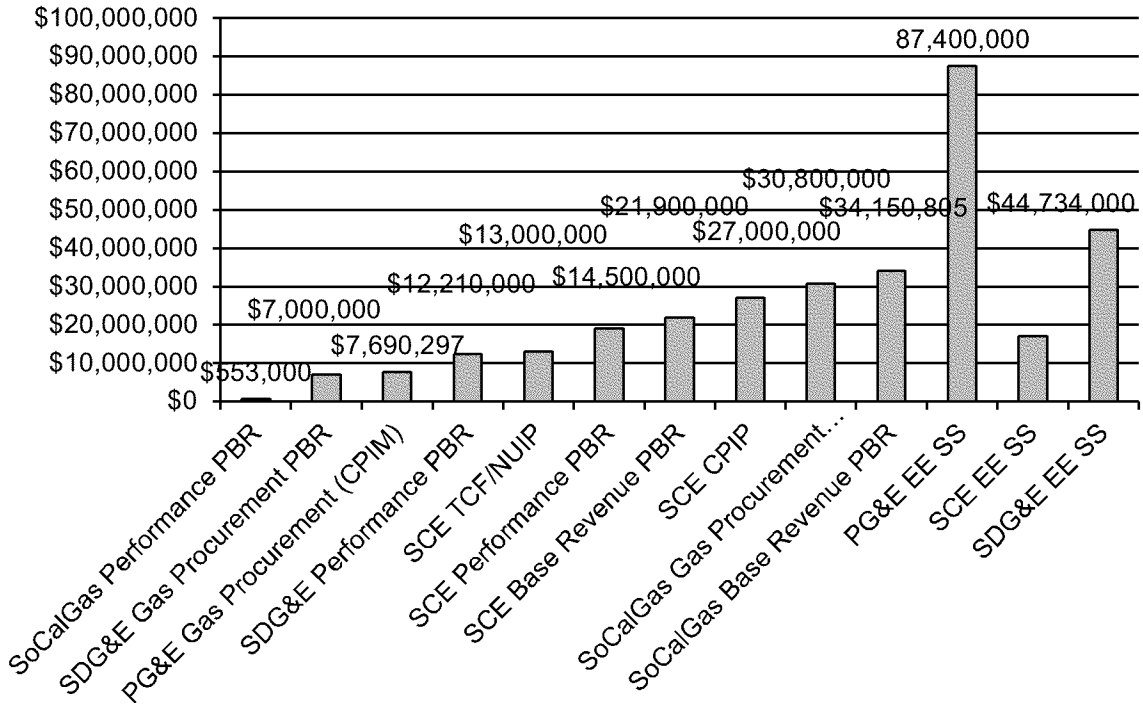
The RRIM established for 2006-09 is analogous to the base revenue PBR mechanisms. The "forecast cost" is the avoided cost calculation derived from the calculation of savings from the portfolio of energy efficiency measures. These monetized "net benefits" are then ostensibly shared between ratepayers and shareholders.

The energy efficiency incentive mechanism is but one of several "incentive mechanisms" that have existed over the years. In briefs submitted in R.06-04-010, TURN highlighted the fact that other performance-based mechanisms appear to motivate utility management attention and utility performance at lower levels. Historically, supply-side equivalence has resulted in actual

[16] TURN refers to these types of PBR mechanisms as "performance PBR" mechanisms to distinguish them from base revenue PBR mechanisms.
[17] CITE (SCE GRC?)

incentive payments for energy efficiency activities that have equaled or surpassed other types of incentive payments, as illustrated in Figure 1 below.

Figure 1: Maximum Earnings from PBR Incentive Mechanisms[18]



Indeed, during the two periods using the "shared savings" paradigm, the four utilities received a combined *average annual profit payment* of $62,104,000 (1990-1997) and $70,620,000 (2006-2008).

The Commission in D.07-09-043 rejected TURN's comparisons to other incentive mechanisms on multiple grounds, essentially finding that one cannot compare incentive

[18] These data represent the "maximum" annual earnings under the various listed incentive mechanisms. TURN did not include data for every mechanism, such as PG&E's former reliability mechanism. SDG&E's 'shared-savings' numbers are from 1990-97 and do not include incentives awarded in 2006-2008.

mechanisms which have different objectives, challenges and risk/reward parameters.[19] The Commission also concluded that TURN's analysis did not consider the maximum potential payouts associated with other incentive mechanisms.

TURN agrees that there are significant differences among the various mechanisms. It is also difficult to compare totals across all utilities, and TURN has not completely compiled utility-specific data on incentive earnings under different mechanisms.[20] We recognize that successfully promoting energy efficiency measures may be harder to achieve than some other activities. However, we suggest that even with these differences the amounts at stake do provide a useful indication of the level of profits necessary to motivate management attention to a particular profit center.

For example, the level of utility work necessary to impact outage duration (thus impacting SAIDI) is likely quite extensive, since much of an electric utility's distribution operations and maintenance work, as well as new capital replacements, will impact reliability statistics. The key point is that the actual payouts under these incentive mechanisms, which cover very different areas of utility activity (procurement, plant operations, distribution O&M, customer service, etc.) have generally been smaller than payouts under the energy efficiency shared savings mechanism. As a point of comparison, PG&E's reliability incentive mechanism had a maximum payout of $12 million,[21] while SCE's reliability mechanism had a maximum

[19] D.07-09-043, Sec. 6.3.2.4.
[20] Indeed, TURN recommends that if the Commission authorizes additional workshops or pleadings in this docket, it should require the utilities to provide complete data on all annual incentive mechanism earnings for the period 1990-2010.
[21] Resolution E-4003, October 19, 2006.

payout of $30 million,[22] though TURN believes the actual incentive payments for reliability performance were significantly lower.[23]

Moreover, while in theory the payout might be linked to some analysis of marginal benefits, in practice the earnings and caps are guided by notions of fairness and equity. For example, the Gas Cost Incentive Mechanism, adopted for SoCalGas in D.94-03-076, is an example of a "shared savings" incentive mechanism. It has been successful at least in part because the benchmark (market cost of gas) is based on identified exogenous indices (published gas price indices). Nevertheless, when this mechanism resulted in inordinately high shareholder earnings of $106 million in its seventh year of operation, parties agreed to a settlement that capped incentives at 1.5% of costs, thus retroactively reducing the shareholder incentive to a more equitable $30.8 million.[24]

Ultimately, an incentive mechanism that pay outs hundreds of millions of dollars based on "benefits" that are somewhat uncertain cannot pass the basic fairness test. If we truly believe that utilities cannot pursue energy efficiency without such large incentive payments due to "lost" supply-side opportunities, then we should not put the utilities in a position of acting against their own interests.

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[22] D.04-07-022, Sec. 13.2.
[23] TURN has not compiled all results under various PBR mechanisms. SCE reported in July of 2006 (in I.06-06-014) that it had rewards of $13 million and penalties of $5 million under its reliability mechanism for the period 1997-2003.
[24] D.02-06-023, Sec. 4, *mimeo.* at 8-9.

2.2.4 Other States Provide Lower Caps on Energy Efficiency Incentives

The incentive cap proposed by TURN[25] are consistent with the level of incentives available to energy efficiency administrators in other states utilizing a management fee type of incentive system. For example, Efficiency Vermont, which administers energy efficiency programs in Vermont, has budgeted $3.3 million for its performance-based fee for programs in 2012-2014, or about $1.1 million a year. This fee represents 2.5 percent of the total budget of $133.2 million,[26] and is paid depending on performance relative to seven targets. The utility is also paid an Operations Fee, equal to 1.6 percent of the budget for 2012-2014.

Connecticut also uses a performance-based incentive for the two main electric utilities which run the state's efficiency program. During annual hearings, the Energy Conservation Management Board (ECMB) reviews the past year's results and determines a performance incentive based on achieving or exceeding the established goals. The incentive, referred to as a "management fee," can be from 1 to 8% of the program costs before taxes. At 100% of the goal, the incentive would be 5% of program costs, and at 130% of goals, it would be 8%.[27] In 2011, Connecticut Light and Power projected an incentive of $4,035,671, which was 5% of the program budget of $80,713,418. About 85% of the goals are for electric system benefits in the residential, commercial and industrial program sectors. The remaining 15% of incentives are for

[25] TURN's proposal caps incentives at 5% of budget. In prior pleadings, TURN has supported a cap based on 5% of spending.
[26] Efficiency Vermont, Annual Plan 2012, December 20, 2011, Table 10: http://www.efficiencyvermont.com/docs/about_efficiency_vermont/annual_plans/EVT_AnnualPlan2012.pdf
[27] ACEEE State Energy Efficiency Policy Database: http://www.aceee.org/energy-efficiency-sector/state-policy/connecticut/180/all/191

individual program goals such as conducting workshops and training events which do not directly lower the costs of individual programs or produce kWh/kW saving.[28]

Hawaii also provides an incentive for its third-party administrator of energy efficiency programs (currently Hawaii Energy). The administrator is eligible for a Performance Award if it meets the targets set for five performance indicators. In 2010, Hawaii Energy earned $542,935 out of a total budget of $21.2 million (actual expenditures totaled $19.5 million), although it was eligible for a maximum of $833,000. The claimed Performance Award was almost 3% of expenditures and 2.6% of the approved budget. The target Performance Award of $700,000 was 3.3% of the approved budget.[29]

The District of Columbia also provides performance incentives for energy efficiency. The District of Columbia has an arrangement similar to Vermont. It provides an operations fee of 4% of program delivery costs and a performance fee of 4% of the total budget assuming targets are met. In the 2012 budget, this yielded compensation totaling 7% of spending.[30]

The Commission in D.07-09-043 likewise dismissed comparisons to other states based on a lack of evidence concerning "the characteristics of individual states that may make them have greater or lesser relevance for California policy makers."[31]

TURN agrees that any such comparisons have to account for potentially relevant differences and should be used as a qualitative tool. Nevertheless, the Commission could easily

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[28] DPUC Review of the Connecticut Energy Efficiency Fund's Conservation and Load Management Plan for 2011, Docket No. 10-10-03, January 6, 2011, page 43: http://www.dpuc.state.ct.us/dockhist.nsf/8e6fc37a54110e3e852576190052b64d/9f6bce800160f54b8525790a0069d412?OpenDocument

[29] Hawaii Energy Annual Report Program Year 2010, November 22, 2011 R2, pages 6, 12,19; Tables 10 and 11: http://www.hawaiienergy.com/media/assets/PY2010AnnualReport.pdf

[30] District of Columbia Sustainable Energy Utility Annual Report for Fiscal Year 2011, Attachment 2 – Annual Budget for FY 2012: http://green.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/Q4-11-DCSEU.pdf

[31] D.07-09-043, Sec. 6.3.2.3, *mimeo.* at 69.

request that staff compile relevant information concerning those other states. TURN suggests that such data would be instructive in assessing whether California's "shared savings" approach is an industry standard to be followed by other states, or reflects a failed model that has been supplanted by more practical approaches to motivating energy efficiency.

3 The Commission Should Adopt Performance Measures That Do Not Rely on Avoided Cost Calculations Derived from Load Impact Analyses of Energy Efficiency Savings

3.1 A New Mechanism Is Warranted That Motivates Management, Promotes Policy Objectives and Eliminates Controversy Regarding Load Impact Measurement

The Commission and stakeholders have enunciated various design objectives for an incentive mechanism. The ALJ Ruling presents the six principles for an effective incentive mechanism described in the Staff White Paper issued on April 1, 2009.[32] The ALJ Ruling also reiterates the characteristics for a RRIM specified in D.07-09-043, which presumed a shared savings model with supply-side comparability.

TURN has long argued that energy efficiency activities are best pursued by non-utility market participants, and TURN has opposed providing utilities with financial incentives for energy efficiency. However, if the Commission chooses to adopt an incentive mechanism for 2013-2014, TURN does not disagree with the list of objectives from the Staff White Paper as providing guidance for an incentive mechanism. The key problem is to define metrics that reflect Commission goals, are easy to calculate, and result in "sufficient but not excessive" financial awards.

[32] ALJ Ruling at 9-10.

Identifying such metrics is not easy. One appeal of the 'shared savings' model is that it eschews the need for independent metrics of success, aside from quantifying and monetizing energy savings.

Nevertheless, TURN suggests that adopting a "performance metric" incentive mechanism is superior to using the "cost savings" mechanism. As discussed below, the shared savings mechanism has created inordinate controversy because it places hundreds of millions of dollars at stake based on the use of inherently uncertain load impact analyses, coupled with inherently imprecise avoided cost modeling, to quantify one supposedly accurate number.

Such a result is impossible to achieve, and has led to unproductive and time-consuming controversy. The result has been to divert resources and attention away from using EM&V for improving program design and implementation. The outcomes have not necessarily benefitted ratepayers.

3.2 The Shared Savings Method Inherently Breeds Controversy Since It Requires a Single Point Estimate Based on Statistically Uncertain Load Impact Analyses

The shared savings incentive approach relies first on the calculation of energy and demand savings from all energy efficiency activities and measures. These calculations are performed by load impact analyses conducted as part of the evaluation, measurement and verification activities ("EM&V"). For example, the "savings" from installing a high efficiency dishwasher are calculated based on the difference in energy consumption between the high efficiency model and the "standard model" that would have been purchased, summed up over an expected number of hours of operation over the useful life of the dishwasher. The monetized "avoided cost" value of these energy savings in theory represents the value to ratepayers. Especially if the calculation accounts for lifecycle savings, providing incentives based on

maximizing such "savings" would in theory promote utilities to obtain the best value for customers.

However, measuring the actual results of energy efficiency activities through load impact analyses is not an exact science, even though it relies on very sophisticated methods and anlyses. The output of a power plant can be measured fairly accurately by installing a high grade meter. The reduction in consumption from the purchase of thousands of high efficiency dishwashers can only be estimated, since the actual hours of operation, useful life and baseline "standard model" will be different for each buyer. The measurement problems are similar when calculating the impact of replacing a 60-watt incandescent by a 15 watt CFL. While the savings are theoretically readily calculated based on parameters included in the Database for Energy Efficiency Resources ("DEER"), each person may differ in where they install the bulbs, how often they turn on/off the bulbs (impacting the useful life), and how many hours they use the bulbs. The actual reduction due to the purchase of millions of bulbs can only be estimated. Accounting for free ridership or spillover involves even more uncertain estimates based on consumer surveys.

EM&V results due to energy efficiency reflect the best estimate from a statistical outcome. Because California has based hundreds of millions of dollars of utility profits at stake based on a specific numerical result, the EM&V process has become subverted to a battle to define one correct number for the "savings" from energy efficiency.

TURN originally strongly supported the use of *ex post* measures as proposed in D.07-09-043, based on the notion that huge profits should only be paid for actual results. However, given the level of controversy in the resulting EM&V process to calculate the *ex post* values, TURN reluctantly agreed that reduced incentives should be based on *ex ante* values. However, as explained in the ALJ Ruling, even this shift did not resolve the EM&V battles, as illustrated in

the controversy over the timing of when to "freeze" the *ex ante* values for the 2010-12 programs.[33]

Thus, at this stage TURN suggests that any "shared savings" mechanism that relies on using the results of EM&V load impact analyses and net-to-gross estimates fails the principles of simplicity and transparency. Moreover, other incentive methods and metrics are available that will promote desirable policy outcomes without the disputes inherent in the shared savings model. While these incentive methods may not be as "ideal" as a shared savings model, they will likely be more practical.

3.3 The Savings Calculated Using Avoided Cost Modeling Do Not Provide an Accurate Reflection of Ratepayer Benefits

The shared savings model assumes that savings from energy efficiency directly displace supply-side capital investments as calculated using the E3 avoided cost model. The avoided cost modeling is used to monetize the value of net savings, calculating the so-called Performance Earnings Basis ("PEB").

The ALJ Ruling cogently summarized some of TURN's concerns concerning the accuracy of the PEB calculations.[34] As discussed in TURN's September 23, 2011 Comments in response to the August 30, 2011 Assigned Commissioner's Ruling, the accuracy of the potential earnings basis calculation goes to the complex question of how actual utility energy and capacity procurement meshes with the valuation of energy efficiency in the E3 avoided cost model. The E3 model uses long-term capacity and energy values. The assumptions and inputs have not been updated since 2006. However, there have been profound changes in electric procurement since 2005-06.

[33] ALJ Ruling, at 8, quoting from D.12-05-015, at 25.
[34] ALJ Ruling at 7.

Utility generation capacity procurement is driven by resource adequacy standards (year-ahead and month-ahead forecasts of system peak demand) and, even more importantly, by local reliability needs driven by local peak demand forecasts. System-wide planning reserve margins, which are the basis of the E3 model, are forecast to be high for the current decade. However, local reliability needs and potential replacement of retired plants due to once-through cooling continue to drive conventional procurement. It is not clear to what extent these are completely included in the E3 model.

Moreover, much of utility energy procurement is driven by environmental goals established since 2006 – 33% RPS, CHP feed-in tariff and various tariffs and programs for DG solar. While energy efficiency investments may reduce variable running costs of marginal gas-fired supplies, it is not at all clear that financial avoided costs to utility ratepayers are accurately reflected in the PEB calculation.

TURN did recommend an alternative incentive mechanism that paid incentives based on actual spending adjusted by two factors, which considered accomplishment of savings goals and spending as a percentage of budget.[35] This mechanism had the advantage of not relying on a net benefits calculation. However, it still required calculation of net savings using *ex ante* parameters. Given our experience for the 2010-2012 program cycle, TURN no longer supports relying even on savings calculations for an incentive mechanism.

[35] See, R.09-01-019, TURN Post-Workshop Comments, August 7, 2009, p. 7-9.

4 TURN Proposes a Two-Part Incentive Mechanism Based on a Management Fee and Performance Metrics that Advance Commission Policies

4.1 Summary of Proposed Mechanism

In response to the ALJ Ruling, TURN here provides a new RRIM, which would apply to *all programs* contained in the 2013-2014 portfolios. TURN's proposed mechanism supports the policy goals enunciated in D.12-05-015 without relying on complex and controversial calculations of savings and net benefits. The proposed mechanism is quick and easy to implement, transparent, and results-oriented.

In summary, TURN's new proposal consists of a two-part incentive payment. The first part part would pay a fixed 2.5% of spending, contingent on at least 50% of recorded spending covering incentives, rebates and financing program costs. This incentive would promote all activities and provide an incentive to maximize participation. The second part would pay a amount based on performance relative to two metrics related to HVAC and whole house retrofits. This incentive would promote activities related to the policy guidance directives in D.12-05-015. The entire incentive payment would be capped at 5% of *budget*, or $50 million per year for all four utilities.

Table 1 below summarizes TURN's proposed mechanism:

Table 1: Summary of TURN's Proposed Incentive Mechanism

TURN EE Shareholder Incentive Mechanism 2013-2014					
Spending and Profit Potential (millions)					
	PG&E	SCE	SDG&E	SCG	Total
2013-2014 Proposed Budgets	$859.50	$786.20	$228.70	$179.50	$2,053.90
Performance Metrics					
Hard Cap at 5% Budget (2 years)	$ 42.98	$ 39.31	$ 11.44	$ 8.98	$ 102.70
2.5% spending 50%/50% incentives and other costs	$ 21.49	$ 19.66	$ 5.72	$ 4.49	$ 51.35
HVAC: increase in # units rebated 1.25%	$ 10.75	$ 9.83	$ 2.86	$ 2.25	$ 25.68
Residential Retrofits: increase in participants in hotter CZs 1.25%	$ 10.75	$ 9.83	$ 2.86	$ 2.25	$ 25.68

4.2 Cap on Total Earnings Based on 5% of Budgets

TURN's mechanism sets an upper limit (or hard cap) on maximum possible incentives that could be earned in total at 5% of the IOUs' 2013-2014 EE Portfolio budgets. Given the utilities' July 2nd applications with proposed budgets totaling $2,053.9 million, shareholder incentives would be capped at $102.7 million. Table 2 provides the 5% hard caps for each utility, and compares these amounts to the RRIM awards for 2006-2008. TURN's proposal results in annual maximum profits of $51.35 million, while the 2006-2008 RRIM paid an annual average of $70.62 million.

Table 2: Potential Capped Earnings Under TURN Mechanism

TURN EE Shareholder Incentive Mechanism 2013-2014 "HARD CAP" and Comparison to 2006-2008 RRIM Awards					
(millions)	PG&E	SCE	SDG&E	SCG	Total
2013-2014 Proposed Budgets	$ 859.50	$ 786.20	$ 228.70	$ 179.50	$ 2,053.90
5% Cap Incentives 2 years	$ 42.98	$ 39.31	$ 11.44	$ 8.98	$ 102.70
5% Cap Incentives Annual Average	**$ 21.49**	**$ 19.66**	**$ 5.72**	**$ 4.49**	**$ 51.35**
2006-2008 EE Budgets					$ 2,200.00
RRIM Awards 3 years	$ 104.05	$ 74.44	$ 16.17	$ 17.19	$ 211.85
RRIM Awards Annual Average	**$ 34.68**	**$ 24.81**	**$ 5.39**	**$ 5.73**	**$ 70.62**

TURN suggests that shareholder incentives of this magnitude are sufficient to motivate utility performance. As discussed in previously, these amounts are above the average or maximum earnings associated with most other incentive mechanisms.

4.3 Part 1 - A Management Fee Based on Spending Subject to One Condition that Promotes Participation and Lower Up-front Costs

Part 1 of TURN's incentive mechanism would award the utilities' 2.5% of actual spending, including all costs, up to 50% of the hard cap described above. However, any payout is fully contingent the ratio of customer incentive expenditures to all other expenditures.

The payment linked to actual spending in essence represents a "management fee," as discussed in the ALJ Ruling and Staff White Paper. However, unlike the suggestion in the Staff White Paper, TURN believes the management fee actually provides an incentive for all programs, including non-resource programs. Indeed, it is a stronger incentive for non-resource and market transformation programs, which by definition do not have easily measurable performance metrics.

However, the payout based on spending is contingent on a criterion that will require the utilities to promote customer participation. The utilities' proposed budgets, as reflected in the July 2nd Applications, show a split of 44%/56% between (1) incentives / rebates/ financing and (2) all other non-incentive costs, as illustrated in Table 3 below.

Table 3: Utility Cost Allocation for 2013-2014 Between Customer Rebates/Incentives and Other Costs

Summary IOUs' July 2nd EE Applications Budget Allocation: (1) Incentives, Rebates, Financing, and (2) All Other Costs										
$ millions/ % Total Budget	PG&E		SCE		SDGE		SoCalGas		Total	
Incentives, Rebates, Financing	$ 362.40	42%	$ 373.40	47%	$ 101.00	44%	$ 69.10	39%	$ 905.90	4%
All Other Costs	$ 497.10	**58%**	$ 412.80	**53%**	$ 127.70	**56%**	$ 110.30	**61%**	$ 1,148.00	**6%**
Total Budgets	$ 859.5	100%	$ 786.2	100%	$ 228.7	100%	$ 179.5	100%	$ 2,053.9	00%

The 44/56 split is in utility budgets is detrimental to the accomplishment Commission goals. The up-front costs of EE are one of the most significant market barriers to EE. One of the biggest challenges is how to convince customers to make these investments. This challenge requires both lowering the marginal cost of efficient equipment (through rebates) as well as motivating customers and their agents (contractors) to make the investment due to the long-term savings. An incentive mechanism cannot "tell" the utility how to accomplish this complex task. However, success in promoting participation will be directly reflected in having a greater percentage of spending on consumer rebates and incentives.

The IOUs' allocation of 40%/60% (incentives and all other costs) as being essentially inverse to the national trend, as shown in Table 4 below.[36]

[36] A.08-07-021, TURN Comments, May 11, 2009, Table 4, page 18.

Table 4: Comparison of Cost Allocation in Other States

TURN TABLE 4 Per A.08-07-021 Energy Efficiency Programs Budget Breakdown: Selected States								
	Oregon Energy Trust 2007	National Grid (MA) 2009	NSTAR Years (MA) 2009	Cape Light Compact (MA) 2009	New Jersey Clean Energy 2007	Conn. Utilities 2009	Efficiency Vermont 2007	AVERAGE
Administrative Costs & Program Management	**10%**	**10%**	**10%**	**5%**	**10%**	**8%**	**2%**	**8%**
Marketing Costs (includes development)	5%	3%	7%	3%	5%	2%	18%	6%
Incentives & rebates	**51%**	**72%**	**64%**	**64%**	**75%**	**65%**	**32%**	**60%**
Program Delivery (excluding incentives & rebates)*	27%	11%	15%	24%	**9%**	10%	44%	20%
Measurement / Evaluation / Market Research	3%	4%	4%	4%	0.20%	2%		3%
Other Expenses (including IT)	4%	-	-	-	1%	14%	4%	6%
TOTAL	100%	100%	100%	100%	100%	100%	100%	

* Program delivery includes direct install labor and materials, sales, technical assistance and quality control. In Vermont, it includes the "Services and Initiatives" category. In New Jersey, it includes "rebate processing".

Sources:

Connecticut: http://www.ctsavesenergy.org/files/FINAL%202009%20C&LM%20Electric%2

National Grid: http://www.mass.gov/Eoeea/docs/dpu/electri

NSTAR: http://www.mass.gov/Eoeea/docs/dpu/electric/08-1

Cape Light: http://www.mass.gov/Eoeea/docs/dpu/electric/

Efficiency Vermont: http://www.efficiencyvermont.com/stella/filelib/AR20

New Jersey: http://www.njcleanenergy.com/files/file/Library/BPURpt4Q07Master

Oregon Trust: http://www.energytrust.org/library/financial/2008-09_Budg

The Commission's guidance in D.12-05-015 that comprehensive retrofit strategies with strong HVAC elements be the hallmark of the 2013-2014 portfolios right to the heart of the more expensive efficiency improvements needed. These will not be achieved in any significant scale unless more of the portfolio funds are devoted to lowering the upfront capital costs via rebates, incentives, and financing.

4.4 Part 2 – Performance Metrics that Advance Vital Policy Goals

D.12-05-015 highlights that the HVAC market for residential and non-residential units is as high as 800,000 units per year.[37] How to achieve significant levels of energy efficiency via central space cooling and heating equipment (HVAC) has been one of the toughest problems for energy efficiency program design and delivery. The efficiency of the equipment unit as well as the proper sizing, installation, and maintenance of the unit all matter for providing energy and demand savings. Currently the utilities provide rebates for higher efficiency HVAC units (distributor program) for non-residential applications, rebates for higher efficiency HVAC units as part of the EUC residential retrofit program, and contractor incentives for quality installation/ quality maintenance for central HVAC units residential and non-residential applications.

Part 2 of TURN's incentive mechanism with continue to advance the Commission's vital policy goal of encouraging increased efficiencies in the HVAC markets by allocating the other 2.5% for increased participation in residential retrofits and HVAC.

4.4.1 HVAC

Given the number of HVAC units replaced annually in California (with the majority in residences), and the relatively small number of EUC residential retrofit projects involving HVAC replacements (approximately 500 for PG&E in 2011), TURN believes it important that in addition to compliance with the HVAC-related directives of D.12-05-015, the utilities should also re-introduce to the HVAC distributor incentive program providing rebates for central units in residential applications.

Because of the high existing efficiency baseline under new code requirements, the resultant low incremental energy savings and the high upfront cost of higher efficiency code-

[37] D.12-05-015, Sec. 8.1.4.3.

compliant HVAC equipment, code compliance rates are very low. TURN recommends tha the utilities provide rebates for code-compliant HVAC equipment during the 2013-2014 transition period.

TURN's proposes an incentive that would award 25% of the hard cap (equal to 1.25% spending) based on number of residential HVAC units incented through the HVAC distributor program. We propose that the 2013 and 2014 goal for this incentive award should be 10% of the estimated number of HVAC units replaced annually in the IOU service territories, as illustrated in Table 5 below. [38]

Table 5: HVAC Performance Metric

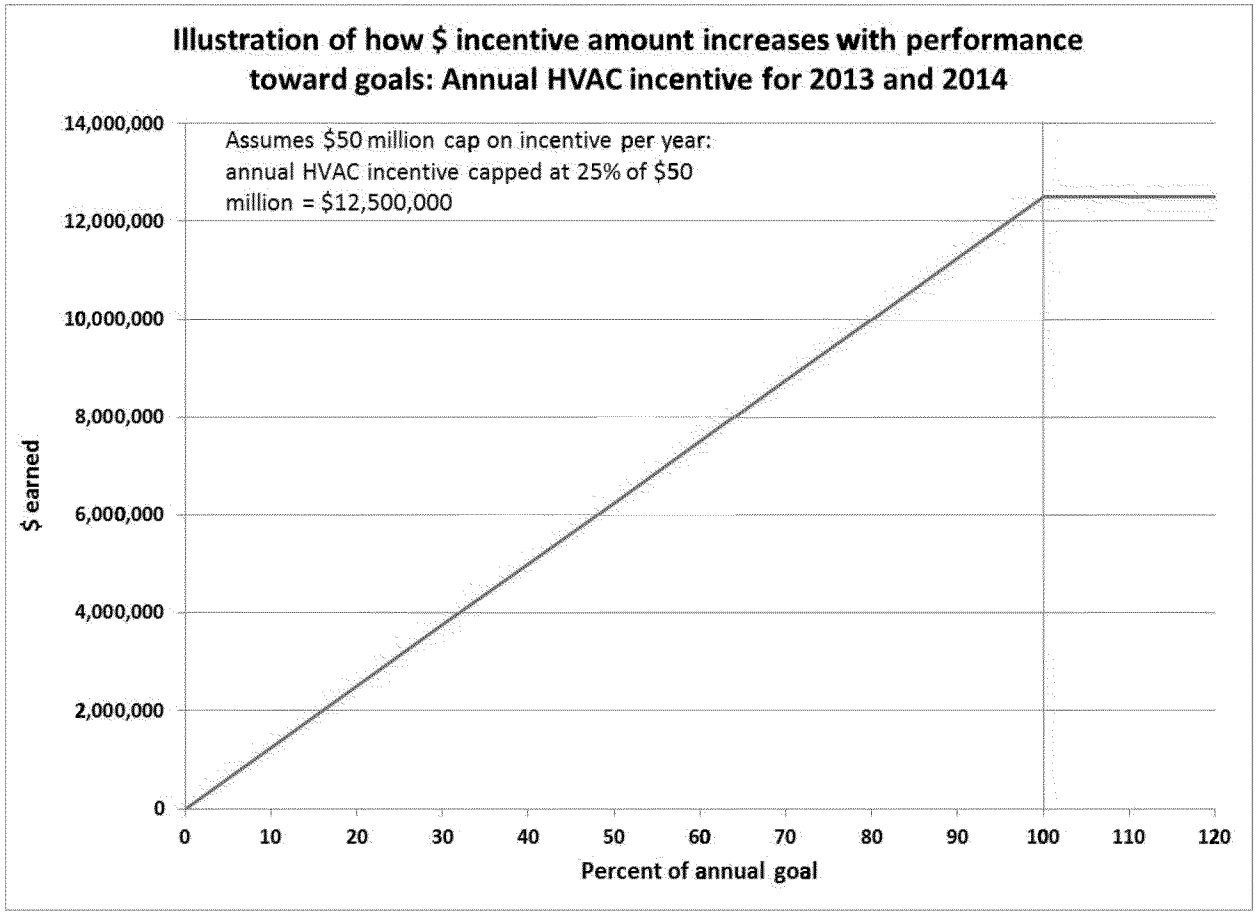
Illustration of HVAC Equipment Rebate Metric				
	Electricity Consumption by Planning Area	Annual Replacements Central HVAC 640,000	2013 HVAC Rebates	2014 HVAC Rebates
PG&E	39%	249,600	24,960	24,960
SCE	36%	230,400	23,040	23,040
SDG&E	7%	44,800	4,480	4,480
Total	82%	524,800	52,480	52,480

TURN's proposed mechanism awards the HVAC incentive as a linear function of the utilities' progress towards the benchmark. If 100% of the goal is met, the utility will earn 100% of the available HVAC incentive; if 10% of the goal is met, the utility will earn 10% of the available HVAC incentive, as illustrated in Figure 2. The benchmark for 2014 should be based on the same benchmark, but the incentive payment should be paid for performance starting at

[38] TURN assumes that approximately 80% of the 800,0000 units replaced annually are in residential applications.

111% of the benchmark, with full payout at 120% of benchmark. Payments would be in equal 1/10th increments for each percent increase between 111-120% of benchmark.

Figure 2: HVAC Incentives for 2013 and 2014



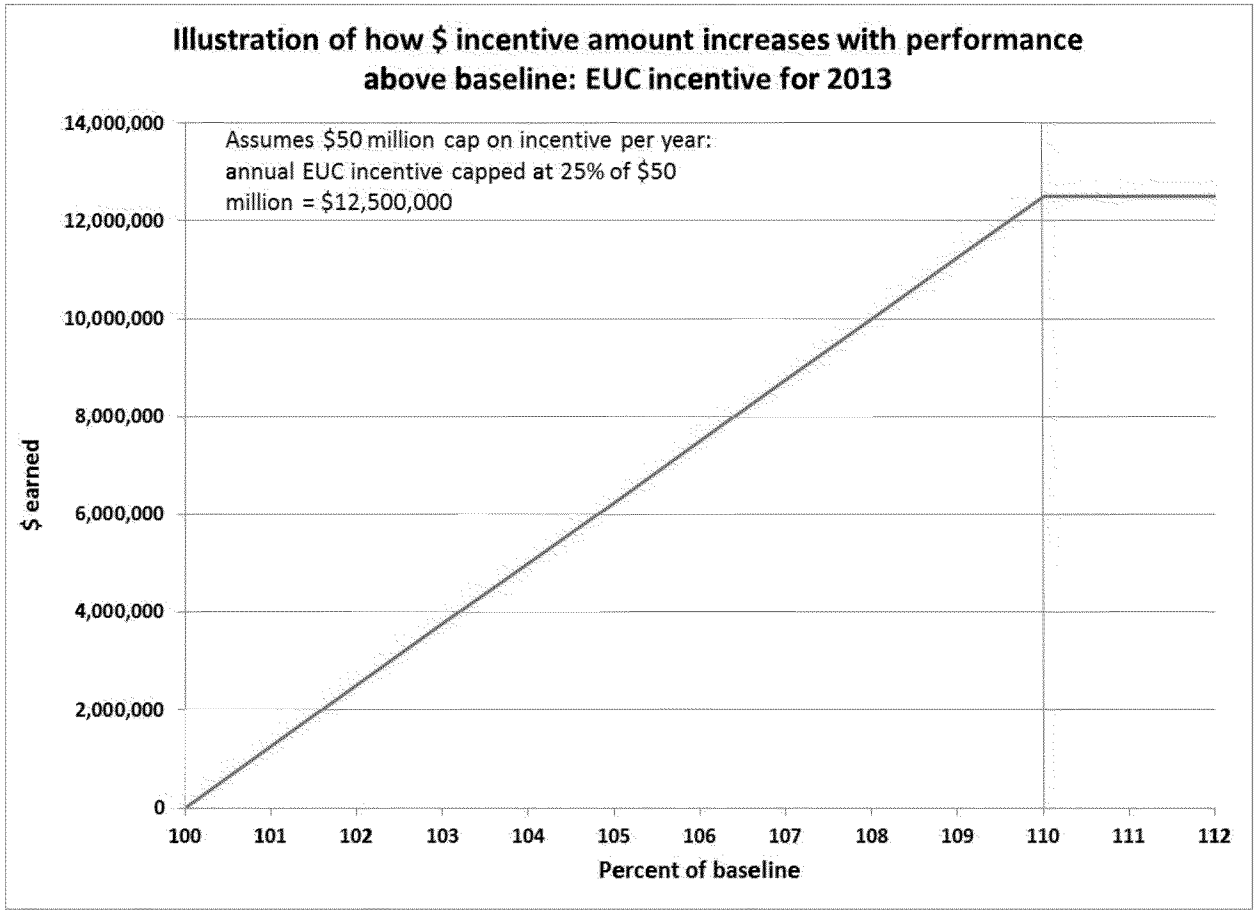
4.4.2 Residential Retrofits

TURN's mechanism would award 25% of the hard cap (equal to 1.25% of spending) based on increased in participants in residential retrofit programs, conducted as part of the Energy Upgrade California ("EUC") program, located in the IOUs' hotter climate zones. TURN targets performance in hot climate zones due to the significantly higher efficiency and bill savings in those areas.

The baseline for 2013 is set based on the average participation values for 2011-2012 in the hotter climate zones.[39] TURN recommends that the incentive payment be a linear function of 10% of the payment for each 1% increase above the baseline, as illustrated in Figure 3. In this way, the entire incentive (approximately $12.5 million annually for illustrative purposes) would be paid for any increase of 10% or more above the baseline. In other words, there is no deadband and the liveband is at 1-10% above baseline, with a linear function of payout.

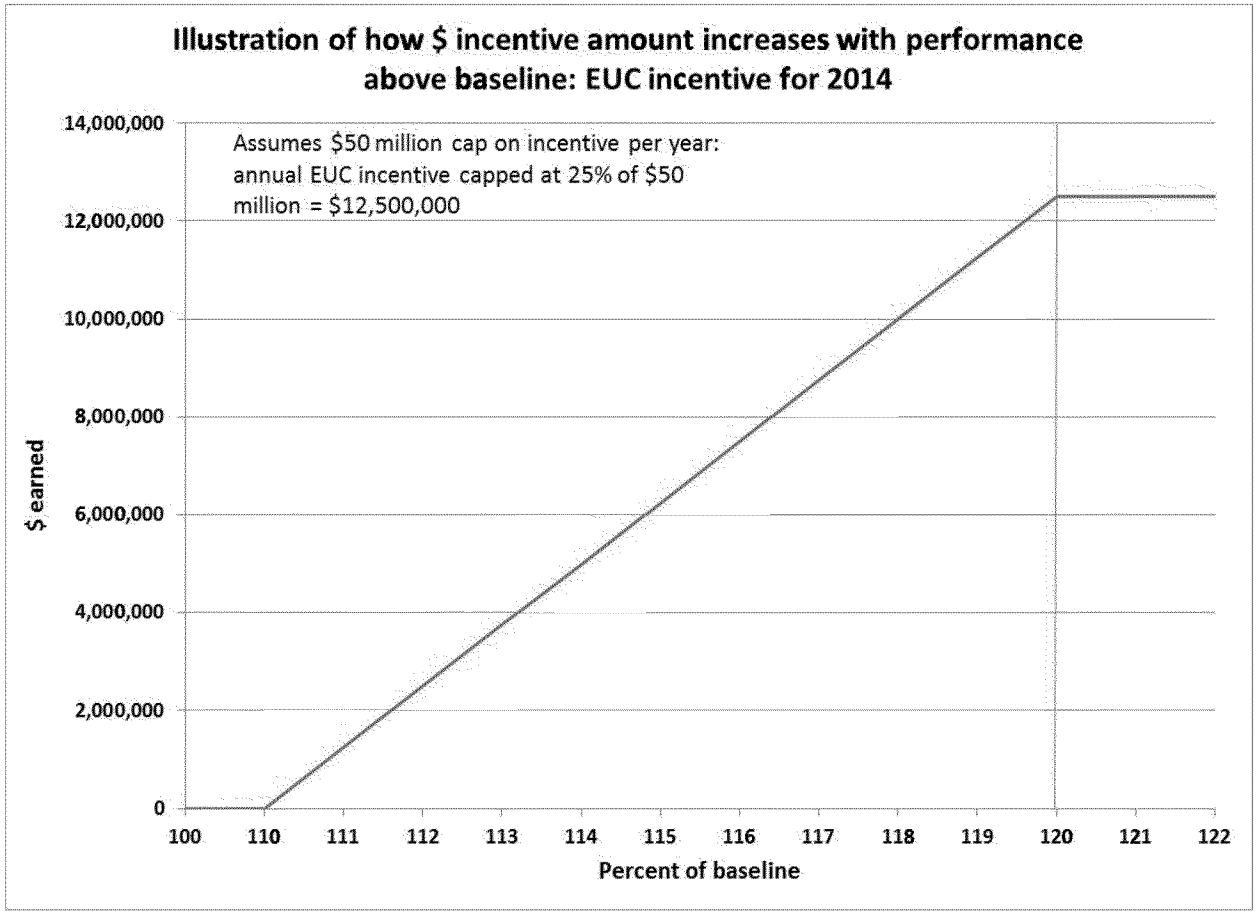
[39] The Energy Upgrade California web portal was launched in 2011 (see PGE, RES PIP Addendum Subprogram Approach Change.doc, 5/21/12, page 4: http://eega.cpuc.ca.gov/Documents.aspx). The data for 2012 may be more appropriate as a baseline given the slow start to the program.

Figure 3: EUC Incentive for 2013



The baseline for 2014 should be based on the same baseline as 2013, but the incentive payment should be paid for performance starting at 111% of the baseline (thus encouraging the utilities to reach 110% of the baseline in 2013), with full payout at 120% of benchmark. Payments would be in equal $1/10^{th}$ increments for each percent increase between 111-120% of baseline, as illustrated in Figure 4.

Figure 4: EUC Incentive for 2014



TURN uses a higher dead band in 2014 because this program just commenced in 2011, so TURN expects that the utilities should be able to achieve significantly higher performance in 2014.

TURN has compiled data to determine the benchmark only for PG&E. We recommend that the Commission order the other utilities to provide corresponding data, or else schedule a workshop to address how comparable data can be obtained to set the benchmark.

In 2011 PG&E completed 959 retrofits, with 579 (or 60%) in the hotter climate zones 11, 12, 13. In these three hotter climate zones the average energy savings were more than six times

greater than in more moderate climate zones (climate zones 2-5), and the average demand savings were 6.6 times greater than in the more moderate climate zones, as illustrated in Table 6 below.[40] Average gas savings (therm) were slightly higher in moderate climate zones.

Table 6: IOU EUC Whole House Retrofit Savings in 2011[41]

Summary 2011 Joint IOU Program Performance Metrics Report Energy Upgrade California (EUC) Whole House Residential Retrofits										
	PG&E				SCE		SDG&E			SCG
Participants	959				66		131			66
Climate Zones		Avoid kW	Avg kWh	Therm Savings	Avoid kW	Avg kWh	Avoid kW	Avg kWh	Therm Savings	Therm Savings
2	47	1.1	604	464						
3	256	0.4	547	365						
4	73	0.7	899	317						
5	3	0.2	208	359						
6					0.63	441				140
7							0.83	920	174	
8					**2.01**	**1373**				116
9					**3.59**	**3162**				**182**
10					**2.03**	**2808**	**3.73**	**4531**	**191**	141
11	64	**3.9**	**4374**	241						
12	463	**1.5**	**1392**	288						
13	52	**3.7**	**5573**	217						
14					**2.88**	**680**				**297**
16	1	5.1	7010	0						

5 If the Commission Makes Incremental Changes to the Existing RRIM, the Sharing Rate and Cap Must be Revised to Address Changes in Risk and Finance Benefits

Another area of concern regarding the use of avoided costs in the shared savings approach is the fact that the sharing rates derived using supply-side equivalence did not include

[40] 3780 kwh average in CZ 11-13 v. 565 kwh average in CZ 2-5.
[41] Sources: 2011 PG&E Annual EE Report (PPM RES 18.1); and PG&E Response of 5/17/2012 to DRA DR 5/4/2012, Q5 in proceeding R.09-11-014.

any adjustment for reduced risk due to using *ex ante* rather than *ex post* parameters in the calculations, or due to the alternative use of funds available to the utility.

TURN discussed these two issues extensively in Sections 2.1 and 2.2 of our February 2, 2012 response to the Assigned Commissioner's Ruling of December 16, 2011. In summary, TURN showed that the results of 2006-2008 EM&V process showed that evaluated benefits were only 45% of the reported benefits, reflecting primarily the difference between using *ex post* versus *ex ante* parameter values. [42] TURN thus argued that any potential earnings calculated using supply-side comparability analyses should be reduced by 55% to account for the reduced risk of using *ex ante* values in both the forecasts and the subsequent savings and net benefits calculations. The proper sharing rate can be derived once this adjustment is made.

TURN also showed that the potential financial benefits to the utility, if it can in fact avoid financing supply-side investments, result in lower 'foregone' earnings. [43] The results based on data in 2006-07 were to reduce the sharing rate to about 3.4%. The calculations would need to be updated for current financial conditions.

As a matter of simplicity, TURN recommends that if the Commission simply modifies the RRIM used in 2006-2009, it should adopt a sharing rate of 5%, applied to net benefits, as a fair and equitable solution.

6 Conclusion

TURN does not recommend that the Commission simply modify the RRIM for 2013-2014. TURN does not in this pleading repeat our objections to any incentive mechanism for energy efficiency. Energy efficiency is simply not part of the utility's core business.

[42] TURN, February 2, 2012, p. 9-10.
[43] TURN, February 2, 2012, p. 15.

However, if the Commission chooses to continue an incentive mechanism for 2013-2014, TURN recommends a two-part mechanism that provides for incentives up to a cap of 5% of the budget. One half of potential profits depend on maintaining spending levels, as long as most of the spending is for actual incentives and rebates. The second half rewards the utilities for greater activity in the residential HVAC market and for increasing participation in home retrofit programs in hot climate zones.

If the Commission chooses to simply modify the existing RRIM, TURN provides an analysis showing why the sharing rate should be significantly lower and should not be based on the "supply-side equivalence" model.

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Respectfully submitted,

By: _____/s/_____

Marcel Hawiger
Staff Attorney

THE UTILITY REFORM NETWORK
115 Sansome Street, Suite 900
San Francisco, CA 94104
Phone: (415) 929-8876
Fax: (415) 929-1132
E-mail: marcel@turn.org