



BEFORE THE PUBLIC UTILITIES COMMISSION OF THE **FILED**

STATE OF CALIFORNIA

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Order Instituting Rulemaking to Reform )  
the Commission's Energy Efficiency ) Rulemaking 12-01-005  
Risk/Reward Incentive Mechanism. ) (Filed January 12, 2012)  
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**SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) COMMENTS**  
**ON ORDER INSTITUTING RULEMAKING TO REFORM THE COMMISSION'S**  
**ENERGY EFFICIENCY RISK/REWARD INCENTIVE MECHANISM**

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Dated: **February 2, 2012**

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE  
STATE OF CALIFORNIA**

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|--|---|--------------------------|
| Order Instituting Rulemaking to Reform | ) |                          |
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| Risk/Reward Incentive Mechanism.       | ) | (Filed January 12, 2012) |
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**I.**

**INTRODUCTION**

Pursuant to the California Public Utilities Commission (Commission) Rules of Practice and Procedure and in Response to the Order Instituting Rulemaking to Reform the Commission's Energy Efficiency Risk/Reward Incentive Mechanism, issued on January 19, 2012 (OIR), Southern California Edison Company (SCE) hereby provides its opening comments. The OIR allows parties to file comments on various issues regarding the Rulemaking and directs parties to incorporate responses to the Assigned Commissioner's Ruling Soliciting Further Comments and Production of Data Regarding Energy Efficiency Incentive Reforms (Ruling) issued on December 16, 2011, in Docket R.09-01-019. SCE appreciates the opportunity to provide this input and hereby respectfully submits the following comments on the OIR and the calculations requested in the Ruling.

## II.

### EXECUTIVE SUMMARY

SCE supports the Commission's desire to significantly reform California's energy efficiency incentive mechanism framework. The fundamental premise that California should provide incentives for energy efficiency is a sound policy direction that has been echoed over the past several years in California's Energy Action Plan<sup>1</sup> and in the Decisions and Rulings of this Commission. However, only an effective, predictable, and reliable incentive mechanism can fulfill the State's policy objective of making energy efficiency a central element of the California utility business model and putting energy efficiency on equal footing with supply-side investments.

It is now clear that the approach most recently adopted in California fell far short of this policy objective. Instead of being an effective, predictable, and reliable mechanism that focused utility management attention on producing energy efficiency results, the most recent mechanism focused everyone's attention and resources on the tremendous controversy injected into the state's measurement and evaluation processes, putting a harsh and unflattering spotlight on everything from the validity of conclusions drawn from studies (including and especially those related to what motivated consumers who participated in utility programs) to the timing of the studies completion and their appropriate use. In short, it's time for a new approach.

SCE strongly believes that we need to transition away from a mechanism that is grounded in estimations, calculations and conclusions drawn from subjective studies to a simpler, more straight-forward mechanism that rewards implementation of the portfolio approved by the Commission and which reflects the three cornerstones of California's energy policy: reliability,

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<sup>1</sup> California Energy Action Plan II (EAP II), dated October 2005, p. 4.4. The EAP II is *available at* <http://docs.cpuc.ca.gov/published/REPORT/51604.htm> [as of February 1, 2011].

affordability, and environmental protection.<sup>2</sup> (Under the current economic conditions and the increasing rate pressure felt by California consumers, the Energy Action Plan II's balanced focus on affordability, reliability and other public policy objectives can be viewed as all the more prescient.) As the Commission focuses on the 2013-2014 energy efficiency program cycle extension, we need to move away from the fragile underpinnings of the past controversial and cumbersome mechanism (i.e., after-the-fact guesses about what motivated consumers to pursue efficiency, shared savings approaches that put tremendous stress on measurement processes and estimates, and sure-to-be controversial calculations of risk-adjusted supply-side comparability) in favor of a mechanism that rewards the utility for implementing the Commission-approved actions it takes to help consumers install energy efficiency.

Notwithstanding the importance of making the transition described above, in these comments SCE presents its step-by-step calculations as requested in the Commission's Ruling. These numbers reflect the forecasted energy efficiency achievements of the current 2010-2012 program cycle, compliant with all Commission directives, including Decision (D.)11-07-030. In order to determine supply-side equivalency, SCE has utilized current information to refresh the comparability calculations adopted by the Commission in D.07-09-043.<sup>3</sup>

SCE does not support the adoption of these submitted calculations for the development of a new energy efficiency incentive mechanism; however, SCE will work closely and diligently with the Commission and all stakeholders to develop an effective prospective incentive mechanism for energy efficiency.

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<sup>2</sup> EAP II, dated October 2005, pp. 1-2. [Note: Although EAP II does not explicitly refer to safety as an element of reliability, SCE joins the Commission in recognizing that public safety and employee safety are a critical and necessary foundation of system reliability.]

<sup>3</sup> D.07-09-043, pp. 92-102.

### III.

#### **SCE'S STEP-BY-STEP CALCULATIONS REQUESTED BY THE RULING**

The Ruling requests “specific step-by-step calculations necessary to derive energy efficiency incentive earnings formulas for the 2010-2012 period.”<sup>4</sup> SCE has developed the following calculations, in conjunction with the other IOUs to ensure a consistent approach. These calculations are provided in compliance with the Ruling and are not representative of SCE’s position on a new energy efficiency risk/reward incentive mechanism.

#### **A. Step 1: Identify The Energy Savings In GWh Associated With The 2010-2012 Portfolio**

In order to present the portfolio impacts of the 2010-2012 program cycle, SCE utilized actual results from January 2010 to December 2011 and forecasted impacts for 2012. In each period, SCE utilized the frozen *ex ante* impacts adopted by the Commission in D.11-07-030 for the 2010-2012 portfolio.<sup>5</sup>

As required by the Ruling, SCE provides two scenarios. The first, Scenario A, is the portfolio impacts at 100% of the adopted goal. SCE interprets this scenario as 100% of the Commission’s 2006-2012 cumulative energy efficiency goals. SCE’s current forecast for the remainder of the program cycle is on track to achieve the Commission’s cumulative demand reduction (MW) goal. Note that SCE will exceed the energy savings (GWh) goal in order to achieve the MW goal. As a result, because SCE’s current portfolio forecast represents reality and achievement of the cumulative energy efficiency goals, it was used as a proxy for Scenario A.

Scenario B is the portfolio impacts at 125% of the adopted goal. Again, SCE interprets this scenario as 125% of the Commission’s 2006-2012 cumulative energy efficiency goals. As a

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<sup>4</sup> Assigned Commissioner’s Ruling Soliciting Further Comments and Production of Data Regarding Energy Efficiency Incentive Reforms, dated December 16, 2011, in proceeding R.09-01-019, p. 2.

<sup>5</sup> Decision 11-07-030, Ordering Paragraph (O.P.) # 1, p. 47-48.

result, SCE increased its remaining forecast sufficiently to achieve 125% of the cumulative kW goal. Note that SCE would have to achieve greater than 125% of the GWh goal in order to meet 125% of the MW goal. Because the 2010 and 2011 results are final, SCE applied the impacts needed to achieve 125% to its 2012 forecast. This is an unrealistic expectation given that SCE does not have sufficient budget to achieve these levels; however, SCE presents it as a proxy for Scenario B.

SCE’s forecasted GWh and MW impacts are presented below:

**Scenario A: 2010-2012 Impacts at 100% of Cumulative Goal**

| <b>Year</b>  | <b>Energy Savings (GWh)</b> | <b>Demand Reduction (MW)</b> |
|--------------|-----------------------------|------------------------------|
| 2010         | 1,878                       | 356                          |
| 2011         | 1,799                       | 340                          |
| 2012         | 1,678                       | 339                          |
| <b>Total</b> | <b>5,354</b>                | <b>1,035</b>                 |

**Scenario B: 2010-2012 Impacts at 125% of Cumulative Goal**

| <b>Year</b>  | <b>Energy Savings (GWh)</b> | <b>Demand Reduction (MW)</b> |
|--------------|-----------------------------|------------------------------|
| 2010         | 1,878                       | 356                          |
| 2011         | 1,799                       | 340                          |
| 2012         | 3,833                       | 776                          |
| <b>Total</b> | <b>7,509</b>                | <b>1,472</b>                 |

**B. Step 2: Provide The Calculation Of The Performance Earnings Basis (PEB)**

SCE calculated its portfolio impacts and PEB using the values adopted by the Commission in D.11-07-030.<sup>6</sup> This includes a 10% discount rate for all customized measures by applying the 90% Gross Realization Rate adopted in D.11-07-30. The energy savings from carryover CFLs from prior years’ programs that were installed in the 2010 – 2012 portfolio period were included in this analysis using the Energy Division’s methodology presented in D.11-12-036. Furthermore, because D.11-07-030 applies retroactively to the entire 2010-2012

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<sup>6</sup> D.11-07-030, O.P. # 1, pp. 47-48.

program cycle, SCE did not delineate its portfolio impacts prior to and after the release of D.11-07-030.

SCE provides the PEB calculations corresponding to the portfolio impacts identified in Step 1 below:

**Scenario A: 2010-2012 Impacts at 100% of Cumulative Goal**

| <b>Year</b>  | <b>Performance Earnings Basis (Million \$)</b> |
|--------------|--|
| 2010         | \$ 274   |
| 2011         | \$ 201   |
| 2012         | \$ 190   |
| <b>Total</b> | <b>\$ 664</b>                                  |

**Scenario B: 2010-2012 Impacts at 125% of Cumulative Goal**

| <b>Year</b>  | <b>Performance Earnings Basis (Million \$)</b> |
|--------------|--|
| 2010         | \$ 274   |
| 2011         | \$ 201   |
| 2012         | \$ 476   |
| <b>Total</b> | <b>\$ 950</b>                                  |

**C. Step 3: Calculate 2010-2012 Earnings Associated With Supply-Side Resources Avoided By Energy Efficiency**

As required by the Commission’s Ruling, SCE utilized the methodology adopted by the Commission in D.07-09-043 as a basis for determining the supply-side equivalency of energy efficiency. SCE refreshed the assumptions used in the adopted methodology to reflect more current information. SCE did so in conjunction with the other IOUs to ensure a consistent approach. For example, SCE updated the following parameters:

- The average useful life of energy efficiency measures of nine years
- The percentage of utility built versus bought resources is 25%

- The avoided cost of installed generation capacity stated in the California Energy Commission (CEC) Cost of Generation report 1,180/kW<sup>7</sup>

The table below identifies the assumptions used by SCE:

| Assumption                         | SCE's Previous Assumptions | Current Assumptions            |
|------------------------------------|----------------------------|--------------------------------|
| Build or Existing                  | 100% Build                 | 100% Build                     |
| Owned vs. Purchased Power          | 50%/50%                    | 25%/75%                        |
| Generation Mix                     | 100% CCGT                  | 100% CCGT                      |
| Avoided Cost, \$/kw installed cost | 2005 MPR, \$939 /kw        | 2009 CEC Report, ~\$1,180 / kw |
| Measure Life                       | 10, 12 and 15 years        | 9 years                        |
| Debt Equivalence:                  |                            |                                |
| Risk Factor                        | 30%                        | 25%                            |
| Discount Rate                      | WACC                       | WACC Debt Cost                 |
| Avoided T&D Investment             | \$119 / kw                 | \$203 / kw                     |
| Peak Line Losses                   | n/a                        | 9%                             |
| Capacity Reserve Margin            | Not used                   | Not used                       |

The detailed formulas and calculations utilized by SCE are provided in **Attachment A**.

As a result of the prescribed methodology, SCE has determined the following supply-side equivalent earnings:

- Scenario A = \$510 million
- Scenario B = \$726 million

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<sup>7</sup> Using the installed cost for an IOU-built Combined Cycle Gas Turbine (CCGT) without duct firing from the worksheet supporting the CEC cost of generation report. *Available at* [http://www.energy.ca.gov/2010publications/CEC-200-2010-002/count/CEC\\_COG\\_Model\\_Version\\_2.02-4-5-10x.php](http://www.energy.ca.gov/2010publications/CEC-200-2010-002/count/CEC_COG_Model_Version_2.02-4-5-10x.php) [as of February 1, 2012].

**D. Step 4: Calculate The RRIM Shared-Savings Percentage Rate Required To Yield The Supply-Side Equivalent Earnings**

The supply-side equivalent earnings, for Scenario A, calculated in Step 3 total \$510 million. When total supply-side equivalent earnings are divided by \$664 million in PEB from Step 2, the corresponding shared savings rate is 77%.

**E. Step 5: Adjust The Shared Savings Percentage Rate As Appropriate To Reflect The Reduced Risk Associated With Earnings Received As Incentives**

SCE believes that in order to compare risk between supply-side and energy efficiency earnings for benchmarking purposes, both regulatory risk and market risk must be accounted for. Regulatory risk includes the volatility of earnings from the stability of regulations, whereas market risk reflects the uncertainty of both cost and revenue. Generally, given the regulatory compact requiring that IOUs be given the opportunity to earn a fair return on its invested capital, the earnings volatility of supply-side earnings is relatively low compared to that of unregulated firms. However, no such compact exists regarding energy efficiency earnings, which has led to a relatively high volatility of such earnings over the past few years. So while energy efficiency earnings possess little or no market risk, their regulatory risk far surpasses that of supply-side earnings. SCE would conclude that energy efficiency earnings are more volatile and therefore riskier than supply-side investments.

However, a comparison of regulatory and market risk between supply-side and energy efficiency earnings may not be useful in evaluating the results of Step 4 as a practical shared savings percentage rate. The derived shared savings rate for the 2010-2012 energy efficiency program cycle is not a palpable number. While comparability to supply-side investments does provide an appropriate benchmark, it must also be reasonable. As a shared savings rate is intended to determine the percentage in which IOU shareholders and ratepayers share in the resource benefits created by energy efficiency, it is not reasonable for shareholders to reap nearly two-thirds of the benefits.

Generally speaking, it is reasonable to expect that the design of an incentive mechanism that reduces the associated risk would offer a reduced rate of expected return. For instance, an incentive mechanism predicated on metrics established up-front, under a reasonableness review, similar to supply-side investments, would reduce the risks associated with the current mechanism. Similarly, other dynamics including the elimination of potential penalties, a ministerial regulatory process, and timely payment guarantees would all further reduce risks associated with the past, undesirable mechanism.

However, the derived shared savings rate above may demonstrate that a shared savings approach is not the appropriate means to achieve the Commission's policies in a manner consistent with the Energy Action Plan II. SCE proposes below, in Section IV, an alternative approach for the Commission to consider.

#### **IV.**

#### **COMMENTS ON ORDER INSTITUTING RULEMAKING 12-01-005**

SCE supports the continuation of an energy efficiency incentive mechanism as an effective way to align shareholder and ratepayer interests, supply-side and demand-side resource options, as well as provide a level of management attention needed to pursue significant levels of energy efficiency. However, given the shifting dynamic in Commission policy towards deeper, long-term energy savings, the current shared savings mechanism may no longer be an effective approach. The current incentive mechanism rewards primarily resource benefits, an approach that is no longer consistent with the new focus on market transformation, and comprehensive Strategic Plan actions. As a result, the Commission and stakeholders must now reevaluate the construct of a relevant incentive mechanism framework that supports the Commission objectives, referenced above, with a shifting program design focus.

SCE commends the Commission for initiating Rulemaking 12-01-005 to accomplish this endeavor. The Commission and stakeholders must now come together to develop a comprehensive and aligned approach for an energy efficiency incentive mechanism. In SCE's

September 23, 2011 comments,<sup>8</sup> SCE offered several illustrative proposals for an incentive mechanism that could be examined further by stakeholders for their viability. For example, SCE proffered a mechanism that increases the IOUs' ability to satisfy some of its Renewable Portfolio Standard requirements through lower-cost energy efficiency, or a mechanism that utilizes greenhouse gas allowance credits as an incentive. While these are simply illustrative examples, SCE believes that a mechanism should seek to integrate energy efficiency into the core utility business, while simultaneously focusing on mitigating rate pressures on utility customers, improving reliability, and achieving California's environmental objectives.

Over the course of this proceeding, the Commission should conduct workshops in order to develop and discuss alternative incentive mechanism proposals that would align all Commission objectives. SCE believes that such a collaborative process should be focused towards adopting an incentive mechanism simultaneously with the adoption and implementation of the 2013-2014 energy efficiency programs. Such alignment is crucial in order to ensure that the objectives of the incentive mechanism and the implementation of the programs are in congruence, both in timing and design. SCE addresses some of the specific topics raised in Rulemaking 12-01-005 below:

**A. Timing of the Energy Efficiency Incentive Mechanism**

An incentive mechanism is meant to provide a key motivator for utility administrators to implement effective programs that exceed the Commission's energy efficiency goals. SCE recognizes that any Commission Decision on a 2010-2012 incentive mechanism would be issued well into 2012, and, as such, would provide a weakened incentive signal regarding the construction and execution of the program portfolio. For this reason, SCE is convinced that everyone's collective time and efforts would be best spent looking ahead towards the

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<sup>8</sup> SCE's Comments in Response to Assigned Commissioner's Ruling to Refresh the Record on Outstanding Issues, dated September 23, 2011, in proceeding R.09-01-019.

construction and implementation of an incentive mechanism that is aligned with the program designs for 2013-2014 and beyond. Doing so, under the premise of the principles of the Energy Action Plan II will ensure that California's policy of cost-effective energy efficiency is the resource of first choice for meeting California's energy needs because energy efficiency is the least-cost, most reliable and most environmentally-sensitive energy resource available.

The Commission should craft a schedule that sets stakeholders on this path. Although the timing is not yet defined, SCE expects to file an Application for the 2013-2014 program period in June, 2012, culminating in Commission approval in the fourth quarter. The incentive mechanism proceeding should follow a similar course to ensure that its development is integrated with and influential on the development of the 2013-2014 programs.

**B. An Incentive Mechanism Should Rely On *Ex Ante* Parameters**

In the issuance of the Rulemaking 12-01-005, the Commission recognized that the previous incentive mechanism was overly complex, not timely, and "has encountered repeated controversy."<sup>9</sup> SCE agrees that an incentive mechanism that contains unnecessary controversy should be avoided in lieu of a simpler, more transparent incentive mechanism process. The major source of controversy in the 2006-2008 incentive mechanism was the inherent disconnect between the development of the goals and the use of *ex post* assumptions to measure performance. In D.10-12-049, the Commission recognized this disconnect and instead established the use of *ex ante* parameters as the most appropriate basis for determining incentive awards. Specifically, the Commission stated, "The utilities should receive incentive rewards or face penalties based on their effective administration of the energy efficiency portfolios given the information they had access to at the time the portfolios were being implemented."<sup>10</sup> SCE supported the Commission's determination then and believes that it is still appropriate as a

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<sup>9</sup> Order Instituting Rulemaking to Reform the Commission's Energy Efficiency Risk/Reward Incentive Mechanism, dated January 19, 2012, p. 7.

<sup>10</sup> D.10-12-049, p. 22.

cornerstone of any energy efficiency incentive mechanism going forward. Furthermore, the use of *ex ante* parameters is appropriate for use in an incentive mechanism as it would create a greater alignment with the supply-side. When a supply-side project, such as a construction of a power plant or a signed power purchase agreement is conducted, the parameters to measure success are established well in advance of the project. The performance metrics are subject to a reasonableness review, and then adhered to for the duration of the project. Why should energy efficiency be treated differently?

The Commission also relied on an objective that, “Incentive methodologies should be applied in a fair, transparent, and conceptually consistent manner.”<sup>11</sup> Subjecting SCE to a set of metrics different than what the goals are based on and how the programs were developed is not fair or consistent. Instead, the Commission should establish a frozen set of *ex ante* metrics, up front, and hold SCE accountable to them, which is the process the Commission adopted for the 2010-2012 program cycle.<sup>12</sup> Anything less will create the same non-transparency and controversy that embroiled the 2006-2008 incentive mechanism.

### **C. Inclusion of Customized Energy Efficiency Projects**

SCE supports the inclusion of all energy efficiency resource programs and projects into an incentive mechanism. A customized project is not different than a deemed project, and should not be treated differently. Each project relies on an *ex ante* set of inputs, net-to-gross ratios, effective useful lives, and costs that result in a measure being replaced by a more efficient measure.

In the 2010-2012 program cycle, the Commission adopted a review process for customized projects. It includes an Energy Division review of selected projects and the application of a realization rate to all non-reviewed projects. Additionally, the process requires

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<sup>11</sup> D.10-12-049, p. 22.

<sup>12</sup> D.09-09-047, O.P. #48, p. 390.

up-front Energy Division review of the IOU calculation tools as well as in-cycle process adjustments resulting from any findings from the Energy Division's project reviews. As a result, there is sufficient rigor to determine the *ex ante* parameters associated with customized projects, and as such, should be treated equally to deemed projects in an incentive mechanism.

**D. 2013-2014 Energy Efficiency Program Changes**

As stated above, an energy efficiency incentive mechanism should be integrated with program design to ensure the congruence of all policy actions. As the 2013-2014 program cycle is developed through the Application process, the incentive mechanism should be similarly designed so that the resulting outcomes will be in alignment. For example, the 2013-2014 program cycle will undoubtedly be designed and implemented under different parameters than the 2010-2012 program cycle. The Ruling states, "In the 2013-2014 timeframe, I expect there to be a greater emphasis on programs designed for deeper savings, measures with higher up-front costs and longer design lives, and market transformation efforts (with correspondingly increased challenges associated with program participation levels and achieving savings from these programs)."<sup>13</sup> This sentiment was echoed again in the OIR and the December 7, 2011, ALJ Ruling on 2013-2014 program guidance in proceeding R.09-11-014. The December 7, 2011, Ruling indicated an increased focus on financing, energy upgrade California, and others coupled with a decreased emphasis on general purpose compact fluorescent lights (CFLs) and Appliance Recycling. These program changes will diminish the cost-effectiveness of the portfolio.

As the energy efficiency portfolio seeks a greater focus on deeper, long-term energy savings, the 2006-2008 shared savings incentive mechanism approach may not be appropriate as it places a greater emphasis on short-term resource savings. For example, if the 2013-2014 programs no longer include general purpose CFL rebates, the net benefits of the programs under

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<sup>13</sup> Assigned Commissioner's Ruling Soliciting Further Comments and Production of Data Regarding Energy Efficiency Incentive Reforms, dated December 16, 2011, p. 3.

the current shared savings approach would be greatly reduced relative to the 2010-2012 program cycle. All energy efficiency portfolios are required to be cost-effective; however, given the requested program modifications, coupled with increasing baselines, and decreasing *ex ante* savings, the portfolio will be less cost-effective over time. Given the reliance of the current shared savings mechanism on net benefits, the resulting net benefits and earnings may no longer be appropriate as a benchmark relative to supply-side equivalency. As a result, parties should collaborate through workshops to develop an incentive mechanism that would meet the objectives of the Commission, stated in the Energy Action Plan II, and be aligned with the policy initiatives the Commission wants to pursue in the 2013-2014 program period and beyond.

## V.

### **CONCLUSION**

SCE appreciates the opportunity to provide the Commission its detailed calculations and recommendations for an effective incentive mechanism. SCE stands ready to work side-by-side with the Commission and all other interested parties to develop and implement an effective energy efficiency incentive mechanism.

Respectfully submitted,

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**Attachment A**

**Assumptions and Supply Side Equivalence Calculations**

**Assumptions and Supply Side Equivalence Calculations - Scenario A**

Results are shown in "TEL Calculations" Worksheet  
Underlying Calculations are shown in the "Debt Eq" and "Rev Req Model" Worksheets

**Assumptions**

| <b>(Change These Values Here)</b>  |         |
|--|---------|
| 2010-2012 SCE performance for DSM programs (GWh saved)                             | 5354    |
| 2010-2012 MW saved   | 1035    |
| 2010-2012 SCE average performance earnings basis (\$million saved)                 | 664     |
| Avoided installed capital cost (\$/kW) based on CEC Cost of Generator <sup>1</sup> | \$1,180 |
| Avoided T&D investment (\$/kW)   | \$203   |
| Line Losses @ Peak   | 9%      |
| Utility Build Percentage   | 25%     |
| <b>(Change These Values in the Rev Req Model Worksheet)</b>                        |         |
| Capital Structure Equity Cost Percent  | 63%     |
| Capital Structure Equity Cost  | 11.50%  |
| Capital Structure Debt Cost  | 6.22%   |
| Capital Structure Equity Ratio Percent   | 48%     |
| Discount Rate  | 8.75%   |

<sup>1</sup> <http://www.energy.ca.gov/2010publications/CEC-200-2010-002/index.html>  
[http://www.energy.ca.gov/2010publications/CEC-200-2010-002/count/CEC\\_COG\\_Model\\_Version\\_2.02-4-5-10x.ph](http://www.energy.ca.gov/2010publications/CEC-200-2010-002/count/CEC_COG_Model_Version_2.02-4-5-10x.ph)

**Avoided Investment Amounts**

|   |                   |
|---|-------------------|
| <b>Generation Investment Cost (Millions)</b>      | <b>\$1,331.22</b> |
| KW Saved * (1+ Line losses) * Capital Cost per kW |                   |
| <b>T&amp;D Investment Cost (Millions)</b>         | <b>\$229</b>      |
| KW Saved * (1+ Line losses) * Capital Cost per kW |                   |
| <b>Tax Gross Up</b>                               | <b>1.62</b>       |
| Federal Tax Rate                                  | 33%               |
| Composite State Tax Rate                          | 8%                |
| 33% + 8% - 33% * 8% = 38.4%                       |                   |
| 1 / (1 - 38.4%) = 1.62                            |                   |

**Supply Side Earnings Rates**

**(1) Equity Return on Investment (Utility Build)**

| Year                             | Return on Investment | Return on Equity (ROI x Eq%) |
|----------------------------------|----------------------|------------------------------|
| 1                                | 9.13%                | 5.76%                        |
| 2                                | 8.82%                | 5.56%                        |
| 3                                | 8.40%                | 5.30%                        |
| 4                                | 7.99%                | 5.04%                        |
| 5                                | 7.60%                | 4.80%                        |
| 6                                | 7.23%                | 4.56%                        |
| 7                                | 6.86%                | 4.33%                        |
| 8                                | 6.51%                | 4.11%                        |
| 9                                | 6.17%                | 3.90%                        |
| NPV ( For a 9-Year Measure Life) | 48%                  | 30%                          |

**(2) Debt Equivalence (Utility Buy)**

| Year | Total | 25% Equity % of Capital Investment | Capital Structure Rebalance | Cost of Equity |
|------|-------|------------------------------------|-----------------------------|----------------|
| 1    | 184.4 | 46.1                               | 22.1                        | 2.5            |
| 2    | 176.6 | 44.1                               | 21.2                        | 2.4            |
| 3    | 169.1 | 42.3                               | 20.3                        | 2.3            |
| 4    | 161.8 | 40.4                               | 19.4                        | 2.2            |
| 5    | 154.6 | 38.6                               | 18.5                        | 2.1            |
| 6    | 147.4 | 36.9                               | 17.7                        | 2.0            |
| 7    | 140.4 | 35.1                               | 16.9                        | 1.9            |
| 8    | 133.5 | 33.4                               | 16.0                        | 1.8            |
| 9    | 126.7 | 31.7                               | 15.2                        | 1.7            |
|      |       |                                    | 9 Year NPV                  | 15%            |

**TEL Calculations - Scenario A**

Equity Return on Investment - Utility Build

|                                  |              |
|----------------------------------|--------------|
| Investment (Millions)            | \$1,331      |
| Equity % of a capital investment | 30%          |
| Tax Gross Up                     | 1.62         |
|                                  | <b>\$647</b> |

Equity Return on T&D - Utility Build

|                           |              |
|---------------------------|--------------|
| T&D Investment            | \$229        |
| Equity% of T&D Investment | 30%          |
| Tax Gross Up              | 1.62         |
|                           | <b>\$111</b> |

Utility Buy - Debt Equivalence

|                       |              |
|-----------------------|--------------|
| Investment (Millions) | \$1,331      |
| Debt Equivalence      | 15%          |
| Tax Gross Up          | 1.62         |
|                       | <b>\$317</b> |

TEL Range

TEL/PEB

|                                   |       |      |
|-----------------------------------|-------|------|
| Utility Build<br>(equity return)  | \$758 | 114% |
| Utility Buy<br>(debt equivalence) | \$428 | 64%  |
| Weighted                          | \$510 | 77%  |



Equity Return on Investment - Utility Build

|                                  |              |
|----------------------------------|--------------|
| Investment (Millions)            | \$1,893      |
| Equity % of a capital investment | 30%          |
| Tax Gross Up                     | 1.62         |
|                                  | <hr/>        |
|                                  | <b>\$920</b> |

Equity Return on T&D - Utility Build

|                           |              |
|---------------------------|--------------|
| T&D Investment            | \$326        |
| Equity% of T&D Investment | 30%          |
| Tax Gross Up              | 1.62         |
|                           | <hr/>        |
|                           | <b>\$158</b> |

Utility Buy - Debt Equivalence

|                       |              |
|-----------------------|--------------|
| Investment (Millions) | \$1,893      |
| Debt Equivalence      | 15%          |
| Tax Gross Up          | 1.62         |
|                       | <hr/>        |
|                       | <b>\$450</b> |

TEL Range

TEL/PEB

|                                   |         |      |
|-----------------------------------|---------|------|
| Utility Build<br>(equity return)  | \$1,078 | 113% |
| Utility Buy<br>(debt equivalence) | \$608   | 64%  |
| Weighted                          | \$726   | 76%  |