August 22, 2008

To All Parties of Record in R.08-02-007:

Re: Southern California Edison Company’s (U 338-E) Pre-Workshop Comments re Scenarios and Metrics

Attached are the Pre-Workshop Comments of Southern California Edison Company on the Scenarios and Metrics Analysis for the workshop scheduled on August 28, 2008.

Very truly yours,

/s/ Robert B. Keeler

Robert B. Keeler

Enclosure(s)
Southern California Edison Company’s Pre-Workshop Comments Re Scenarios and Metrics

In accordance with the request of the Commission’s Energy Division, Southern California Edison Company (SCE) respectfully submits these pre-workshop comments for the workshop on scenarios and metrics scheduled for August 28, 2008.

Introduction

SCE appreciates this opportunity to provide pre-workshop comments in response to the request of the Energy Division and is hopeful that the process the Commission is following in this proceeding will lead to a constructive result regarding the Commission’s Scenarios and Metrics. SCE is also pleased that the Commission is pursuing a collaborative approach in this LTPP proceeding, and SCE looks forward to discussing these Scenarios and Metric issues with parties in the upcoming workshop.

Overview Questions

At the outset, the Energy Division has posed five questions on Scenarios and six questions on Metrics that seek to broadly address which utility scenarios should be analyzed and what are the appropriate metrics to be evaluated. SCE responds to these questions below.

Energy Division Questions on Scenarios

1. Do parties disagree with the proposed guiding principals for scenario development? If so, what would be an appropriate definition of the guiding principals for scenario development?

SCE generally agrees with the proposed “guiding principles,” but suggests some minor revisions. Regarding the first principle, alternative futures that are “reasonably likely to occur” should not be the standard for scenario selection. The range of scenarios considered should encompass less likely, but still plausible events. The second sentence in this statement of principle (regarding maintaining alternative scenarios that result in different preferred portfolios) should be a separate principle. SCE suggests that this be stated in a positive manner: the range of scenarios considered should be sufficiently broad in scope as to span a wide range of different portfolio outcomes. One of the key benefits of scenario development is that it allows parties to set aside preconceived notions of what is “reasonably likely,” and instead explore the consequences of less likely, but still plausible alternatives.

2. Using the information template provided in this data request, please provide as much definition as you can for each of the Scenarios that you propose the LTPPs be required to consider.
   • Is there a useful distinction to be made between “Scenario Analysis” and “Sensitivity Analysis”, or are these essentially the same thing?
   • If there is a useful distinction, are Staff’s proposed definitions of Scenario Analysis and Sensitivity Analysis valid and useful?
   • Which types of sensitivities are best handled with Sensitivity Analysis as opposed to Scenario Analysis?
SCE’s recommendation regarding specific scenarios is described in an attachment to these responses. Regarding staff’s questions on scenarios and sensitivities, SCE agrees that it is useful to distinguish between scenario and sensitivity analysis. SCE generally agrees with Staff’s proposed definition of scenario and sensitivity analysis.

Scenario analysis and sensitivity analysis serve different purposes. Scenario analysis should be undertaken to gain understanding of the potentially wide range in future “states of the world”, so that we do not make myopic decisions that are regretted later if the assumptions about the future prove to be inaccurate.

In contrast, sensitivity analysis is more technical in nature, and should focus on gaining insight into the relationship between variables. For example, a sensitivity analysis might ask questions such as “how much do average portfolio prices rise for each 1% increase in natural gas prices under each of the scenarios” or “how high does the implicit cost of CO2 need to increase to make coal-fired generation more expensive than natural gas.”

3. Given the need to balance robust analysis against information overload and resource constraints, how many Scenarios is a reasonable number for the LTTPs to consider?

A maximum of three (3) common scenarios done by the IOUs should be considered reasonable for the LTTP.

4. Should the Commission require the IOUs to conduct a given number of identical scenarios? If so, which ones should be required for all LTTPs?

SCE is willing to work with the other IOUs and joint agency staff to develop a common reference case scenario. A scenario where the IOUs need to comply with CARB requirements to meet AB 32’s GHG reduction targets might be such a scenario. While this scenario might entail using common assumptions such as a 33% RPS goal for all three IOUs, the IOUs might have other differences in their proposed future resource needs that would lead to different results. Allowing analysis of such differences, even in a common reference case, would be useful.

5. Should the IOUs be allowed or encouraged to develop additional scenarios for their LTTPs to consider?

Yes, the IOUs should be allowed to develop additional scenarios for the LTTP.

Energy Division Questions on Metrics

1. Are there any additional categories of metrics that would provide useful information for evaluating the portfolios besides the four that Staff has posited?

In general, SCE agrees with the four categories of metrics identified by staff, i.e., cost, reliability, risk, and environmental performance. However, we disagree with several individual metrics in each category, as indicated in our responses to the questions below.
2. Please comment on the relative usefulness of the Cost metrics that Staff has posited.
• Is it important to focus on a Cost metric that focuses on total bills or utility revenue requirement rather than rates as a way of leveling the playing field for conservation heavy portfolios?

SCE recommends focusing on the first two cost metrics identified by the staff, i.e., cumulative revenue requirements and levelized average retail rates. Regarding levelized average retail rates, SCE recommends looking only at the generation component of retail rates.

Staff’s suggestion to look at levelized average bills and pre-conservation average retail rates is less useful in the context of LTPP scenario analysis. In view of the high levels of energy efficiency now incorporated into IOU LTPPs, SCE appreciates the concerns that have presumably led the staff to suggest these metrics. If staff desires that energy efficiency rate impacts be considered within the LTPP, SCE suggests that a sensitivity analysis in which the volume of energy efficiency is varied would be a more appropriate analytical approach.

3. Please comment on the relative usefulness of statistical risk metrics.
• Is it worthwhile to consider annual volatility in the utility revenue requirements?
• Would considering this metric be likely to result in different preferred portfolios?
• Are there alternative metrics for measuring exposure to annual market prices?
• Which risk is likely to be more important: the risk associated with exposure to natural gas prices, or the risk associated with exposure to CO2 allowance prices?

The issue of appropriately considering risks in resource planning is a complicated one, with many dimensions. The specific risk metrics suggested by staff do not capture the dimensions of risk well and further discussions and development of this area are needed. At the broadest level, the key resource planning risk we face is making the wrong investment decisions, and choosing to procure resources from generation sources that are not optimal, considering all the state’s important policy objectives. There are widely divergent and often polarized views on this subject among the various stakeholders, and the selection of scenarios should be designed to help quantify the implications of various resource choices. These kinds of risks are identified through a comparison of the various scenarios, not through metrics.

On a narrower level, key input assumptions such as natural gas prices should be subject to sensitivity analysis to assess the impact of uncertainty on other performance metrics. For example, one metric could be the impact of a 10% increase in natural gas prices on cumulative revenue requirements. These relationships can be expressed as separate metrics, and will vary across scenarios.

It is premature to ask if the risk associated with CO2 allowance prices will be either greater or more volatile than gas prices. SCE suspects that in the near term, natural gas prices would have a greater impact on overall ratepayer cost than CO2 allowance prices; however, this will depend on the rules for a CO2 allowance market.

Finally, it should be noted that these comments on staff’s suggested risk metrics are provided in the context of the Commission’s interest in integrated resource planning. Within the context of utility AB 57 procurement plans, risk metrics and limits are well established. Utilities use
TEVaR as a primary measure of exposure to market price risks, and develop procurement plans that limit customer risk exposure to an acceptable “customer risk tolerance (CRT)” level. AB 57 procurement plan risk assessment should be limited to TEVaR metrics. The Commission should not force IOUs to assess “investment risk” or “project development risk” related to each LTPP scenario.

Performance risks, including those associated with project development are a more complicated subject. In general, such risks are addressed through a variety of techniques including collateral posting, developer fees and milestone obligations, and procurement flexibility to procure somewhat in advance of when a resource shortfall is forecast to occur based on market conditions. There is no need to address these metrics in the context of an integrated resource planning analysis.

4. Are there any additional environmental metrics that would provide useful information at the portfolio level?
   • Keep in mind that environmental aspects of individual resources or resource zones are likely to already have been considered in evaluating individual resources for inclusion in portfolios.
   • Is it sufficient to evaluate these aspects at the resource level, or does it provide useful information to consider non-quantitative environmental indicators when considering alternative portfolios?

SCE recommends against the use of “criteria pollutant emissions” or “water use” as evaluation metrics. Also, regarding CO₂ emissions, SCE suggests that in addition to CO₂ emissions for each LTPP scenario, staff should consider the cost effectiveness of each portfolio in reducing levels of CO₂.

Because of the strong statewide interest in GHG regulation, CO₂ should be the only environmental metric considered as part of the 2010 LTPPs. The other environmental performance metrics identified by staff are important. However, pollutant emission and water use are currently considered in the project evaluation and permitting process, so it is a lower priority to consider them in the context of LTPP policy development.

Additionally, staff should be aware that water usage has not been a performance metric in past LTPPs and there is little data on such impacts. Incorporating water usage as a performance metric would be extremely burdensome. In addition, if such metrics were to be used it would be necessary to determine what kind of water (i.e. ocean, waste or recycled, or fresh) would be utilized by potential generation projects and this would add more complexity and burdens to the process of selecting generic resource characteristics.

5. Should the LTPPs calculate reliability metrics in addition to reserve margin, or can the IOUs assume that the Resource Adequacy proceeding has developed an appropriate reserve margin such that each portfolio that meets the established reserve margin provides roughly equivalent reliability?

The Planning Reserve Margin proceeding should develop an appropriate reserve margin which can then be used as an input to the LTPP filing. If a decision in that proceeding is not issued
prior to a scoping memo in the 2010 LTPP, IOUs should continue to use the existing 15%-17% range for planning purposes. There is no need to separately calculate reliability metrics.

6. Risk metrics, such as TEVaR which model annual variation in revenue requirements are primarily driven by regional hydro variations that alter the need for (more expensive) natural gas-fired generation. Is it necessary or advisable to require the utilities to stochastically model hydro conditions for 10 years for each scenario and/or sensitivity case?

From the perspective of an integrated resource planning analysis, SCE regards modeling hydro variations using stochastic modeling to be unnecessary because our exposure to hydro variability is small in relation to other resource availability uncertainties. SCE’s typical practice is to de-rate hydro system performance based on adverse conditions. Within SCE’s AB 57 procurement planning process, we already model hydro conditions stochastically. SCE uses three different “Must-Take” supply scenarios to which we apply Monte-Carlo simulation techniques as part of the calculation of portfolio TEVaR.
ATTACHMENT
Preliminary Approach To Scenario Development

SCE believes that it is premature to develop and finalize specific scenarios at this time. The implications of emerging GHG regulation will loom large in the development of any LTPP planning scenario. As a result, CARB’s scoping plan for AB 32 implementation, possible additional state RPS legislation, an RPS ballot initiative, and possible federal legislation are all critical factors that could significantly impact the choice and design of appropriate scenarios.

In response to the Energy Division’s questions, SCE provides here its preliminary views on scenario development. SCE offers this information in order to engage in discussions with joint agency staff and parties. It is very likely that the recommendations SCE would make at the time the 2010 LTPP is initiated could vary somewhat, or perhaps fundamentally, from what is presented here.

SCE offers two scenarios for consideration. One scenario is labeled a “utility preferred” scenario. This scenario will be the place for IOUs to deviate from common forecast assumptions where we believe such deviations are appropriate. This scenario does “double duty” by also relaxing forecast regulatory constraints (such as a 33% RPS goal), in order to assess the implications of a minimally constrained, economically optimized resource expansion. The second scenario, the “reference case” scenario, attempts to describe a likely evolution of GHG regulation consistent with current CARB statements, and to reflect reasonably likely forecasts of key input variables such as natural gas prices.

Each of these scenarios will begin with an IOU-area resource perspective that aggregates bundled and direct access customer loads and focuses on the integrated resource planning issues that the Commission has indicated it wishes to explore in the 2010 LTPP. These scenarios can then form the basis for each IOU to examine the implications of variations in direct access penetration on their AB57-based procurement plans to serve bundled customer load.

While the insights gained from examining alternative scenarios may help shape views on procurement practices, the linkage between policy objectives and specific procurement practices will be necessarily limited. As SCE observed in its initial comments on the 2008 LTPP rulemaking, the presence of retail and wholesale competition greatly constrains the Commission’s ability to effectuate its policy objectives through imposing regulatory obligations solely on utility procurement activities.1

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1 See R.08-02-007, Southern California Edison Company’s Comments on Preliminary Scoping Memo, March 17, 2008, page 2.
The table below, in the format requested by Energy Division, describes the two scenarios that SCE tentatively suggests for stakeholder discussion in the upcoming planning standards workshops.

<table>
<thead>
<tr>
<th>Purpose:</th>
<th>Utility Preferred Scenario</th>
<th>Reference Case (Likely GHG Regulatory Scenario)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose:</td>
<td>Allow utilities to present a scenario based on their views on reasonable assumptions; Explore the implications of an economically optimized resource plan with minimal regulatory constraints</td>
<td>Present a scenario based on a reasonably likely GHG control regime, taking into consideration CARB statements, legislative requirements, potential federal legislation, and likely forecasts of other data inputs</td>
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<td>Load Forecast:</td>
<td>Utility, if significantly different than CEC</td>
<td>CEC</td>
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<tr>
<td>Energy Efficiency Achievement:</td>
<td>Realistic “low case” EE targets from EE OIR to provide a procurement “cushion”</td>
<td>“Mid case” EE targets based on EE goals decision</td>
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<td>Demand Response Achievement:</td>
<td>To be determined later, based on Demand Response OIR</td>
<td>To be determined later, based on Demand Response OIR</td>
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<tr>
<td>CSI Achievement</td>
<td>CSI based on CPUC targets, adjusted for current expectations</td>
<td>CSI based on CPUC targets, adjusted for experience to date</td>
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<tr>
<td>CHP Achievement</td>
<td>Utility forecast of CHP</td>
<td>Utility forecast of CHP, subject to D.07-012-052 directives</td>
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<td>Plant Retirements:</td>
<td>Known plus exogenous (based on other elements of the scenario)</td>
<td>D.07-12-052, adjusted for recent events (e.g., technology developments and cooling requirement)</td>
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<td>Fuel Price Forecast:</td>
<td>Commercial forecast or California Gas Report Forecast</td>
<td>California Gas Report Forecast</td>
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<td>CO₂ Allowance Price Forecast:</td>
<td>Probably $30/ton to $50/ton</td>
<td>Forecast based on expected CARB/federal regulatory structure</td>
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<td>Greenhouse gas (GHG) regulation scheme</td>
<td>Flexibility to achieve electric utility sector share of statewide targets</td>
<td>Expected CARB and federal regulations</td>
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<td>--------------------------------------</td>
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<tr>
<td>CO₂ emission limits:</td>
<td>See above</td>
<td>See above</td>
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<tr>
<td>RPS definition:</td>
<td>At least 20% (scenario will determine cost effective level)</td>
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<tr>
<td>Resource costs and characteristics</td>
<td>Consensus assumptions (if possible)</td>
<td>Consensus assumptions (if possible)</td>
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