BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate
And Refine Procurement Policies
Underlying Long-Term Procurement Plans

R. 08-02-007

PACIFIC GAS AND ELECTRIC COMPANY’S (U 39 E)
RESPONSE TO DATA REQUEST ON
PLANNING SCENARIOS AND METRICS

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RESPONSE TO DATA REQUEST ON  
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On August 5, 2008, the Commission issued a Notice of August 28, 2008 Workshop on Planning Scenarios & Metrics and a related data request. PG&E submits these responses in advance of the August 28, 2008 workshop regarding the development of long-term resource planning scenarios and metrics. In general, PG&E supports the proposed guiding principles for scenario development and the broad categories of metrics to evaluate tradeoffs and performance of a given portfolio. Below, PG&E provides responses to the specific questions raised by the Energy Division (“ED”) in the data request.

RESPONSE TO QUESTIONS ON SCENARIOS

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

In general, PG&E supports the guiding principles proposed for scenario development. However, there is much more that needs to be done to define a clear and useful analytical framework. For instance, PG&E is concerned with the apparent confusion between portfolios, plans, and scenarios. Portfolios or plans are combinations
of actions or initiatives; scenarios are combinations of uncertain outcomes or states of the world. The examples of scenarios that ED provides include a mix of actions and uncertain outcomes. PG&E recommends that portfolios, not the scenarios, be defined exclusively as combinations of actions, initiatives, or policy choices; and that scenarios be defined exclusively as combinations of uncertain outcomes of states of the world.

PG&E is also concerned with the lack of clear process and outcome. Will the Commission adopt a preferred portfolio or plan for each scenario? If there are three scenarios with four portfolios per scenario, will the Commission choose a scenario, and for its “selected” scenario adopt or modify the preferred portfolio or plan proposed by the utility? Or, does the Commission intend to evaluate trade-offs among scenarios and among portfolios for each scenario? Ultimately, there needs to be the selection of a single portfolio that does reasonably well among all scenarios in order for the utilities to have clear guidance as to how they are to commercially proceed with their procurement efforts given an appropriate needs assessment.

Incorporating too many metrics and no definite plan to figure out how the Commission will make the trade-offs among those metrics could also lead to a faulty selection process. Simplicity might be best in this situation: cost; reliability; and environment.

Finally, sensitivity analysis could be much more complex than ED envisions if resources need to be re-dispatched with changes in individual input variables. PG&E suggests the third principle be modified to include a limitation on the number of sensitivities as well. For the same reasons that ED pointed out in its Workshop Notice to
limit the number of scenarios (e.g., to produce purposeful and manageable analyses and information for the Commission, IOUs, and other parties), sensitivities should be narrowly focused to only those key parameters which are relevant to the performance of each portfolio.

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.

While PG&E believes that ED’s template is a valuable tool in the decision making process, it is premature to drill down into such detail when discussions surrounding scenario purpose and definition have not yet begun. To facilitate discussion at the workshop, PG&E provides a general description of which scenarios (or portfolios)\(^1\) would be useful to inform the Commission on policy decisions. Ultimately, a purposeful and appropriate need assessment will need to be derived from these scenarios, and that a single preferred candidate portfolio must adequately reflect PG&E’s need for future procurement activities. PG&E believes the following scenarios may be appropriate:

- **33% RPS Scenario:** This scenario would produce a preferred portfolio that meets a 33% RPS by 2020 target.

- **Unconstrained GHG Scenario:** This scenario would calculate the cost of complying with GHG reduction goals using any available means. This does not mean that current policies (e.g., AB 32) would not be complied with; it just means that other tools could be utilized, even if those are outside the electric sector (e.g., allowance and offsets).

- **Reference Scenario:** This scenario would meet all the current policies, regulations, and statutory requirements already in place (e.g., SB 1368, AB

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\(^1\) As indicated above, PG&E recommends that portfolios, not the scenarios, be defined exclusively as combinations of actions, initiatives, or policy choices; and that scenarios be defined exclusively as combinations of uncertain outcomes of states of the world. For purposes of responding to the remaining questions, however, PG&E uses the ED definitions of scenarios and portfolios.
32, and 20% RPS by 2010). Beyond those requirements, the scenario would be constructed which would minimize customer cost. This scenario would serve as a baseline to compare against the policy goals as highlighted by other scenarios, informing the commission on the relative impact of such policy decisions. Each utility may have different input parameter assumptions to satisfy this goal, but the basic premise would be shared.

- **Is there a useful distinction to be made between “Scenario Analysis” and “Sensitivity Analysis”, or are these essentially the same thing?**

Yes, there is a clear distinction between scenarios and sensitivity analysis.

- **If there is a useful distinction, are Staff’s proposed definitions of Scenario Analysis and Sensitivity Analysis valid and useful?**

While the definition and rationale for sensitivity analyses appear appropriate, it does not speak to the robustness of such an analysis. Parties should realize that ED’s Sensitivity Analysis is an estimate of the impact of single input changes, while Scenario Analysis involves full consideration of interactions among other input variables. For example, appropriately estimating the effects of changing the gas price would normally require a “full-blown” modeling run to capture the re-dispatch of resources, which is equivalent in detail and labor time as that of a Scenario Analysis. However, to be manageable, estimating gas prices can be accomplished by making some simplifying assumptions. This rationale would hold true for any sensitivity.

- **Which types of sensitivities are best handled with Sensitivity Analysis as opposed to Scenario Analysis?**

Sensitivities should be comprised of variables which have limited or have no interactions with other variables. For example, the impact on portfolio cost due to natural gas market prices, assuming there is no interaction with other prices such as RPS prices,
3. **Given the need to balance robust analysis against information overload and resource constraints, how many Scenarios is a reasonable number for the LTPPs to consider?**

   A maximum of 3 required scenarios is reasonable.

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

   Yes. Other load-serving entities should also file the same number of scenarios as discussed in question #2.

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

   Yes.

**RESPONSE TO 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?**

   ED’s paper has noted several metrics. Each metric should be quantifiable and comparable to a present benchmark (e.g., the reliability metric should be the probability of customer outages and benchmarked against a 1 day in 10 year or 0.1 day/yr outage probability).

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 portfolio?
Yes, total bill or revenue requirement is useful alongside using an average rate; however, these two ignore other customer costs such as the cost of participating in demand-side programs. These costs should be considered as well.

3. **Please comment on the relative usefulness of statistical risk metrics.**

   - **Is it worthwhile to consider annual volatility in the utility revenue requirements?**

     The concept of “annual volatility” is not well defined. There is not enough information available to provide a meaningful statistical metric for most risks described in the ED’s paper. For example, it will be difficult to assign a probability to a scenario that combines multiple input variables. For this long-term procurement planning cycle, PG&E suggests estimating the cost impact of input variable changes.

     - **Would considering this metric be likely to result in different preferred portfolios?**

       In theory, it is possible; in practice, it is not likely without knowing ahead of time the customers risk preference and willingness to pay to reduce the various risks.

     - **Are there alternative metrics for measuring exposure to annual market prices?**

       The concept of “annual market prices” is not well defined. In general, there are many metrics which have been proposed to measure exposure for a portfolio. One of these is TeVaR; another is Expected Tail Loss (“ETL”). Another measure is the impact of individual input changes on the overall portfolio.

     - **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?**
PG&E is not able to answer this question at this point in the proceeding.

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?

ED’s paper has suggested CO₂ emissions, other criteria pollutant emissions, water and land use. Without reducing the importance of these impacts, PG&E recommends the Commission use CO₂ emissions only in this LTPP cycle.

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 alone is not enough to measure the reliability of each portfolio because there are no adequate counting rules today for all resources to measure their equivalent contributions to reliability. PG&E addressed this point in its prior LTPP filing.

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 scenarios and/or sensitivity case?

TeVaR, as PG&E currently calculates it, is only robust for a maximum of one year. Modeling hydro stochastically might be valid if we were looking at a one year forecast in isolation; however, the usefulness of such an analysis in 10-year plan is not
evident. To the extent any hydro uncertainty is incorporated, it would be best accomplished through a sensitivity analysis.

Respectfully submitted,

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Dated: August 22, 2008
CERTIFICATE OF SERVICE BY ELECTRONIC MAIL OR U.S. MAIL

I, the undersigned, state that I am a citizen of the United States and am employed in the City and County of San Francisco; that I am over the age of eighteen (18) years and not a party to the within cause; and that my business address is Pacific Gas and Electric Company, Law Department B30A, 77 Beale Street, San Francisco, CA 94105.

I am readily familiar with the business practice of Pacific Gas and Electric Company for collection and processing of correspondence for mailing with the United States Postal Service. In the ordinary course of business, correspondence is deposited with the United States Postal Service the same day it is submitted for mailing.

On the 22nd day of August 2008, I caused to be served a true copy of:

PACIFIC GAS AND ELECTRIC COMPANY’S (U 39 E) RESPONSE TO DATA REQUEST ON PLANNING SCENARIOS AND METRICS

[XX] By Electronic Mail – serving the enclosed via e-mail transmission to each of the parties listed on the official service list for R.08-02-007 with an e-mail address.

[XX] By U.S. Mail – by placing the enclosed for collection and mailing, in the course of ordinary business practice, with other correspondence of Pacific Gas and Electric Company, enclosed in a sealed envelope, with postage fully prepaid, addressed to those parties listed on the official service list for R.08-02-007 without an e-mail address.

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 22nd day of August, 2008 at San Francisco, California.

/s/

STEPHANIE LOUIE