

**Comments of Pacific Gas & Electric Company on the
CAISO MSC Opinion on Long-Term Resource Adequacy under MRTU
November 9, 2007**

I. Introduction

Pacific Gas and Electric Company (“PG&E”) commends the Market Surveillance Committee (“MSC”) for its careful consideration of the issues associated with introducing a new paradigm for Resource Adequacy (“RA”) that will truly meet California’s changing needs. We share many of the MSC’s concerns about the potentially substantial undue costs of implementing a new RA paradigm without careful consideration of the effect that developing changes in major California energy policies will have on reliability and the resources needed to sustain it, as well as the effect that the RA paradigm itself would have on the success of those important California energy policies. We also largely agree with the MSC’s view of how the current RA paradigm could be improved, and some of the essential elements of any future RA paradigm.

While we agree with many elements of the MSC’s opinion, PG&E is concerned that the need for new resources may arrive sooner than anticipated in the studies relied on by the MSC. The important points raised by the MSC must be addressed before adopting any major change in the RA paradigm, but we cannot afford to wait indefinitely. We must take the time that we do have to keenly focus on the changing nature of California’s markets and energy infrastructure, to determine the future needs that arise from those changes, and to optimize major changes in the RA structure to meet those needs, which will become more clear over the next two years. As uncertainties are resolved, the best methods to address the MSC’s concerns, whether in a centralized or decentralized fashion, can be explored. In the meantime, we agree that it would be most prudent to meet interim needs through more moderate changes in the RA paradigm, such as extending the current paradigm forward.

Our comments largely follow the organization of the MSC’s opinion.

II. Integration with other markets

Centralized capacity markets of the types under consideration in California are effectively residual markets, *i.e.*, intended to provide the compensation required to incent new entry that energy, ancillary services, and other markets do not provide. To the extent that other, non-capacity markets are not well-developed and/or do not provide appropriate price signals, a centralized capacity market would likely lead to investment decisions that are inconsistent with state policy goals and the efficient and reliable operation of the CAISO system unless express constraints on the procurement of specific resource attributes are incorporated into the mechanism. The MSC opinion enumerates a number of contexts in which non-capacity markets are insufficiently developed and/or state policy is insufficiently settled to provide the clear economic signals that a centralized

market approach would need to induce investment in the desired resources (factors that should be considered to determine, in the first instance, whether major changes to RA will truly be necessary to meet future conditions):

A. *MRTU*

As the MSC indicates, “[t]here are many remaining market design challenges associated with successfully implementing MRTU.”¹ MRTU markets are not yet in operation, and we will have had limited experience with them by the time that currently proposed new centralized market approaches would be implemented. This means that suppliers will have very limited experience with a fully locational market on which to base expectations about locational energy premia. Consequently, the RA paradigm in combination with MRTU markets may not provide clear signals to invest in the right locations.

In addition, as the MSC notes, there is considerable uncertainty about whether the combination of energy and AS markets under MRTU will provide appropriate signals to invest in flexible generation to accommodate the dramatic increase in intermittent generation from renewables that is expected pursuant to the California’s Renewables Portfolio Standard (“RPS”) program. In the event that they do not, a poorly designed RA paradigm may lead to investment in the wrong types of resources, which could lead to substantially increased prices to consumers that might well have been avoided with more careful design.

B. *Direct Access*

Without taking a view on the timing and scope of the reintroduction of direct access or other forms of load migration, PG&E does believe that it makes sense to establish much more clarity with regards to the extent and timing of load migration before introducing a major new RA paradigm. The development of a potentially very costly and complex mechanism that, as its primary virtue, is intended to serve as an efficient mechanism for addressing the cost allocation issues associated with load migration would likely be suboptimal if it occurs before that understanding has been developed.

C. *Preferred Resources*

As the MSC notes, a substantial portion of California’s additional procurement needs for the near future is not for generic capacity, but for the preferred resources identified in the Loading Order and other state policies (e.g., demand response (“DR”), energy efficiency (“EE”) and renewables), and the specific resource types needed to support those preferred resources.² There are presently no clear price signals that reflect these policy constraints and new reliability needs. The nascent REC market may eventually provide a transparent price signal that reflects RPS policy constraints, but this is only one strand of the needed symphony of economic signals that would be needed to attract the right resources to meet the Loading Order and new reliability needs. There are

¹ p. 2

² While PG&E is less optimistic than the MSC about the time frame for needed new investment, PG&E agrees with the principles, concepts and approach the MSC outlines.

no explicit markets for “DR credits” or “EE credits,” in contrast, and the entire structure of the regulation of greenhouse gas (“GHG”) emissions from the power sector is still very much unsettled and will undoubtedly be a major force in restructuring how California views its energy future.

The lack of transparent price signals reflecting California’s energy policy goals has two major implications. First, to the extent that the desired resource attributes are not clearly and appropriately priced to reflect their value to California policymakers, a centralized capacity market is unlikely to lead to investment that will attain state policy goals, absent constraints to ensure procurement of specific resource attributes. Second, the absence of explicit attribute pricing might undermine the capacity market as a cost allocation tool. If the costs of desired attributes are not included in the costs to be allocated through the market, the market cannot allocate the cost of the attributes, at best masking but at worst potentially stranding the cost of the additional investment that is needed to achieve our energy policy goals.

In addition to the problems associated with pricing the impact of state policy on the future energy infrastructure, the new directions in California’s energy policies will introduce new challenges related to the physical operation of the CAISO-controlled grid, as the MSC explains. In particular, as the CAISO itself has noted³ and as discussed above, the addition of significant amounts of new intermittent renewable generation is likely to increase the need for more flexible conventional generation and possibly storage. It is not clear that the centralized capacity market designs that have been proposed, even in combination with other markets, will provide the right incentives to invest in the required conventional resources. As noted above, procurement constraints could resolve that concern, but the concern must be taken seriously and incorporated within the fundamental design. While reliability may be maintained without optimal infrastructure investments, the costs to consumers of the CAISO’s operation of a suboptimal infrastructure would undoubtedly be substantially and unnecessarily higher. California cannot afford additional avoidable costs as it undertakes numerous courageous, but costly, policy initiatives.

Further, because of the growing significance of preferred resources, we agree with the MSC that the “new fossil-fuel capacity likely to be constructed in California in the next ten years will be needed at specific locations in the network or to serve particular system reliability goals.”⁴ To the extent that the bulk of the needed procurement of conventional resources is i) in non-competitive local areas possessing significant non-price barriers to new entry, or ii) for units with particular operational characteristics that may not be explicitly priced, the advantages of introducing a centralized capacity market may be less than in other markets seeking greater amounts of conventional generation.

³ For example, see this summary, <http://www.caiso.com/1c64/1c64e60aa4c0.pdf>, of the CAISO’s recent *Renewable Integration Study*.

⁴ p. 5

III. Learning from other markets

It is certainly true that California could benefit from the ongoing experience of other markets. The first real auction under New England's FCM will take place this February, and may provide initial evidence on whether new resources can be procured through a centralized forward market in cost-effective manner. PG&E notes that in order to fully assess the viability of the new capacity markets, it will be necessary to track not only several auctions, but whether the resources procured through the auctions actually come on line and perform. While this evidence will not be sufficiently complete for at least five to ten years, the next two years will provide a more firm basis for conclusions as to the mechanisms that are the most promising- and those that are the most problematic. For example, as the MSC recognizes, the non-capacity market approach to resource adequacy in Texas may have successful elements worth adapting to California's environment. Such an approach may become increasingly viable in California as real-time meters are installed and the demand-side plays a more active role in wholesale markets.

IV. The current RA paradigm

We generally agree with the MSC's recommendations for potential improvements of the current RA regime.

A. Calpine approach to standardized RA

We support the standardized RA approach championed by Calpine. We may disagree with the MSC with respect to whether the Calpine approach can be implemented without changes to the CAISO tariff,⁵ and note that the CAISO tariff can be relatively easily amended to focus on the performance requirements for specific attributes needed in the future, compared with the restructuring that major market designs would require to adapt to such shifts in focus. The Calpine contracting approach relies heavily on shifting the burden of verifying compliance and levying performance penalties to a single entity. Given the CAISO's central role in operating the system, it is well-positioned to perform this role, and would benefit from doing so. It is unclear how the CAISO would perform this function without having the function clearly defined in its tariff. PG&E does support the MSC's call for clearer identification of the future reliability needs of the changing California infrastructure, and would support future changes of the CAISO tariff needed to adapt to that new information.

B. Forward commitment

We agree with the MSC that a more forward commitment of RA has many benefits. First, it would enable new and existing resources to compete to provide RA,

⁵ p. 6

where such competition is a reasonable expectation.⁶ Second, it would facilitate planning by establishing binding commitments by resources to be available in the forward time frame. We also agree with the MSC that one trade-off of such an approach is that “the farther into the future such a requirement is extended, the more problems arise with forecasting future needs and other sources of uncertainties,”⁷ but feel that an approach that balances load and resource need forecast accuracy against the benefits of competition from new resources would be appropriate. While, in theory, we would agree with the MSC that “it may not be necessary to *require* such forward commitments through the RA process, if firms are entering into longer term arrangements on their own anyway,”⁸ we do not believe that track record to date provides any basis to be sanguine that load-serving entities (“LSEs”) other than investor-owned utilities (“IOUs”) are making the necessary investments in future infrastructure. While more is learned about the future needs of the system under the new energy policies, extending the existing paradigm forward would be a sensible solution.

C. Must-offer

As noted above, we agree with the MSC that it is essential for the CAISO to further define the additional ancillary services and capacity operating characteristics that will be needed to cost-effectively sustain reliability.⁹ The MSC’s view that the generic must-offer masks the true value of the characteristics most needed is worthy of careful consideration, and the MSC may well be correct that the generic must-offer will become less significant in the future. The must-offer requirement cannot compel units to perform in ways in which they are not physically capable, and the use of the generic must-offer to acquire the specific attributes of a subset of units is inefficient and unduly costly. The capabilities that are needed deserve much further focus to ensure cost-effective procurement and reduced customer cost in the future.

A topic related to must-offer that merits further attention is the RA counting rules.¹⁰ Intermittent generators, imports, and conventional generators may perform differently relative to their rated capacities under conditions in which capacity is scarce. The process for establishing the “firmness” of different types of capacity, including DR, is ongoing. We support an approach that assigns RA values to resources that reflect their actual performance and strong penalties for non-performance.

D. Backstop

As we have discussed elsewhere, we support the need for a strong new capacity backstop. The mechanisms and the agents charged with operating the mechanisms may

⁶ PG&E agrees with the MSC that contestability should not be assumed to be a universal cure-all, and that non-price barriers to entry or insufficient demand in a constrained area to support competition necessitates administrative market power mitigation measures.

⁷ p. 6

⁸ p. 6

⁹ p. 7

¹⁰ pp. 6-7

differ, depending on the market design and time frame, but the need to assure that resources required for reliability are developed on a timely basis is essential. Clear triggers and a proven, reliable, cost-effective mechanism that is ready, in place and secure will provide confidence to all market participants about when regulatory intervention can be expected to occur and what exactly will happen when it does occur, thus providing a stable environment for normally expected procurement.

V. Elements of a future long-term RA paradigm

The MSC has identified many important elements of a future RA paradigm, regardless of the exact form it may take.

A. Energy hedging

The MSC notes “the need to maintain a substantial coverage of final demand in California through long-term supply contracts that provide a hedge against short-term energy price risk.”¹¹ As the MSC explains,

There are several potential pathways to maintaining substantial energy hedging. Under certain wholesale and retail regulatory structures, firms will have a strong incentive to hedge virtually all of their short-term price risk without a regulatory mandate that they do so. If the vast majority of load in California continues to be served by regulated load-serving entities (LSEs), then the CPUC procurement process should ensure an adequate level of hedging of short-term price risk. Another pathway to adequate hedging of short-term energy price risk is a centralized capacity mechanism with an ex post peak energy rent refund that resembles a short-term energy price call option on the amount of capacity sold by the generation unit.¹²

Given the current retail environment, we are concerned that non-IOUs may have insufficiently strong incentives to contract forward for energy. To avoid some of the thorny cost allocation issues associated with load returning to IOU service from non-IOUs that may have failed to hedge, we support the MSC’s call for market design elements that will provide reasonable protections from high, and highly volatile, spot prices. As the MSC points out, a centralized capacity market with an ex post PER deduction is one comparatively simple means of implementing such measures.

B. Market power mitigation

The MSC explains, as noted above, that capacity markets in certain local areas are unlikely to be realistically contestable and competitive even in the forward time frame. We agree that under such circumstances, significant market monitoring and market power mitigation will be necessary.

¹¹ p. 7

¹² p. 8

VI. Conclusion

PG&E again commends the MSC for taking a hard look at the fundamental questions facing California as it considers the future needs to be served by, and potential expenses of, a major change in RA paradigm. Further definition of future needs, the evaluation of the effect of policy and market changes in California, and assessment of the results of experiments in the eastern markets and Texas are a prudent prerequisite to major RA changes. Only by basing major RA paradigm changes on a foundation that carefully considers these concerns can we realize California's vision of a new energy infrastructure without substantially and unnecessarily overburdening customers.