

Remarks to be presented to the July 31, 2013 FERC Technical Conference on Technical Conference on Flexible and Local Resources Needed for Reliability in the California Wholesale Electric Market

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Thank you for the opportunity to address the technical conference. My name is Matthew Barmack. I am a Director of Market & Regulatory Analysis for Calpine. At Calpine, I focus on long-term procurement policy, including resource adequacy, capacity markets, and utility procurement practices. I joined Calpine in 2009. Prior to Calpine, I worked at PG&E for three years. Before PG&E, I worked in economic consulting focusing on a range of issues related to wholesale power markets. I earned my Ph.D. in economics from M.I.T. in 1998.

Calpine has approximately 6,500 MW in California. Calpine's California fleet includes "merchant" conventional generation, conventional generation under long-term contracts, renewables, and CHP. Calpine is also a retailer, providing power to many of Safeway's California stores. In addition, Calpine owns and operates generation in PJM, NYISO, ISO-NE, and MISO, and is actively involved in resource adequacy and capacity market debates in those markets. Because of Calpine's diverse experience in California and other markets, Calpine has a unique perspective on California wholesale market issues.

In the remainder of my remarks, I will offer a few general observations on energy procurement policy in California and the recently proposed Joint Multi-Year Reliability Framework (JRF) before addressing the specific questions posed by FERC staff for this panel.

As readily acknowledged by CPUC commissioners and staff, energy procurement in California is fundamentally discriminatory. Renewables, DR, CHP, energy efficiency, new conventional generation, and now storage all are procured through targeted procurement programs outside of organized wholesale markets. Given the extent of out-of-market procurement in California, designing a market that assures the viability of the limited class of resources that depend on the market, primarily existing conventional generation that is not under long-term contract, raises unique challenges. Out-of-market procurement generally has assured that organized wholesale markets, such as the CAISO's energy and ancillary services markets and the bilateral Resource Adequacy (RA) market, are oversupplied relative to specific numeric procurement targets.¹ The result of this oversupply is that merchant conventional generation resources, on which the CAISO relies to maintain reliability and integrate California's growing renewable portfolio, has insufficient opportunities to recover going-forward and capital costs.

There are relatively simple policy changes that could help address the inherent discrimination in California energy procurement policy. For example, the CPUC could allow existing resources to compete with new resources in long-term solicitations, which are currently open only to new resources. Although these changes are outside of the scope of the proposals before us today, they must be addressed at

¹ For example, a recent CPUC analysis projects planning reserve margins no lower than 18% through 2019. See rows 31-37 of the Summary tab of "Summary Data of Revised Scenariosv6.xls," (<http://www.cpuc.ca.gov/NR/rdonlyres/CA96D98A-F855-4C48-B6BC-298901887082/0/SummaryDataofRevisedScenariosv6.xls>)

some point in order to ensure a fully functioning market in California.

With respect to the JRF itself, Calpine generally supports the main elements of the JRF including binding multi-year forward procurement requirements complemented by clearing-price auctions for capacity. The success of the proposal will depend on important implementation details. Calpine has five general concerns about the proposal:

- a. The levels of required forward procurement
- b. Supplier obligations to sell capacity in relation to the levels of required forward procurement
- c. The treatment of capacity in excess of procurement targets
- d. The treatment of “out-of-market” procurement in the Reliability Services Auctions (RSAs)
- e. Defining flexible capacity

I will address each of these concerns.

- a. The levels of required forward procurement

The proposal does not specify the amount of two- and three-year forward procurement that will be required. Given that the IOUs already have secured a substantial amount of resources through long-term contracts and ownership, it is conceivable that they are more than 70% hedged 2- and 3-years forward already.² In order for the proposal to result in additional forward procurement, procurement targets must be relatively high. Calpine suggests procurement targets close to 100% of projected requirements. These higher targets will reduce risk for suppliers and hence the risk premium that suppliers must recover from customers.

- b. Supplier obligations to sell capacity in relation to the levels of required forward procurement

If LSEs are not required to satisfy 100 percent of their forward requirements, suppliers should not have a “must offer” obligation to sell all capacity forward, either bilaterally or through the RSAs. Otherwise, the RA market will clear less than 100 percent of demand against 100 percent of supply, resulting in artificially low prices.

- c. The treatment of capacity in excess of procurement targets

As discussed earlier, Calpine believes that, given the extent of out-of-market procurement in California, the RA market is likely to continue to be oversupplied relative to specific numeric procurement targets. Consequently, it will be important for the market to reflect the fact that capacity in excess of specific

² TURN, a consumer advocacy group that has access to IOU procurement data, has suggested that the IOUs are 70% hedged as far as five years forward. (See TURN’s May 10, 2013 *Reply Comments of The Utility Reform Network On track III Rules Issues* in R.12-03-014.)

numeric procurement targets still contributes to reliability. In NYISO and PJM, the sloped demand curves utilized in their capacity markets reflect the value of capacity in excess of specific numeric procurement targets. Calpine recommends the use of similar sloped demand curves in the proposed RSAs. Especially given current over-supply conditions, the sloped demand curve should include a floor price that is sufficiently high to support the continued operation of resources that are necessary to maintain reliability and to obviate the need for CAISO backstop procurement.

The absence of a sloped demand curve can lead to artificially low and/or volatile prices. For example, MISO recently added voluntary clearing-price capacity auctions to a bilateral resource adequacy construct similar to California's. The price from the first auction was extremely low (\$0.032/kW-month). MISO's market monitor attributes this perverse outcome to the absence of a sloped demand curve.³

d. The treatment of "out-of-market" procurement in the Reliability Services Auctions (RSAs)

Existing capacity markets have rules governing how resources procured outside of the market are treated in the market and counted towards reliability requirements. These rules, frequently known as Minimum Offer Price Rules (MOPR), limit the extent to which out-of-market purchases can depress prices artificially by requiring resources to be offered into the market at levels that reasonably reflect their costs (and risk not clearing). While Calpine recognizes the CPUC's desire to ensure that resources procured pursuant to various policy mandates count towards capacity procurement requirements, exempting most or all CPUC-jurisdictional LSE procurement from flowing through the RSAs could artificially depress prices in the RSAs and associated bilateral markets. There may be environmental or other policy justifications to ensure that purchases of "preferred" resources, such as renewables, count toward capacity procurement requirements, but Calpine believes that the set of resources exempt from participation in the market should be limited. Consequently, Calpine recommends requiring at least new conventional generation to be offered in the RSAs at prices that reasonably reflect its cost (and risk not clearing). Forcing new conventional generation into the RSAs would provide strong incentives to avoid over-procurement and manage electricity costs and a more flexible means of managing the commercial operation dates of new resources, e.g., to the extent that cheaper capacity is available from the market, a developer or off-taker might delay the on-line date of a new project.

e. Defining flexible capacity

The JRF should provide incentives to maintain and upgrade the right types of resources. As Calpine has expressed repeatedly in the RA proceeding and in related stakeholder processes at the CAISO, Calpine remains concerned about definitions of flexibility that unjustifiably discriminate against combined cycles as they are currently configured and would provide no incentive to upgrade combined cycles to shorten start times and increase ramp rates to provide precisely the flexibility that will be necessary to satisfy the State's renewable policy goals.⁴ Calpine urges the CAISO and the CPUC to continue to refine definitions of flexibility before they are embedded in forward capacity procurement requirements.

³ See section III.F of MISO's *2012 State Of The Market Report for the MISO Electricity Markets* (http://www.potomaceconomics.com/uploads/midwest_reports/2012_SOM_Report_final_6-10-13.pdf)

⁴ For example, see Calpine's April 5, 2013 comments in the R.11-10-023 (<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M064/K207/64207304.PDF>)

With respect to the specific questions addressed to the panel, I offer the following answers:

- What are the preferred market-based solutions that could be used to address the forward flexible and local reliability concerns raised in the FLRR proceeding?

Explicit requirements for LSEs or other entities to procure flexible and local capacity on a forward basis would provide the groundwork for a market-based solution to address forward flexible and local reliability concerns. Such requirements could be mediated through bilateral procurement, a centralized market, or some combination of both. Mandatory rather than voluntary centralized markets with appropriate buyer-side market power provisions, including sloped demand curves and minimum offer price rules, are less susceptible to artificial price suppression than purely bilateral approaches or approaches such as the JRF that allow unlimited self-supply outside of a centralized market. In addition, as I will discuss later, mandatory centralized markets potentially reduce credit requirements and lead to more efficient procurement.

- How would a forward procurement requirement, along with specific procurement targets for flexible and local resources, affect bilateral contract prices?

It is not clear how new forward procurement requirements would affect bilateral contract prices. If forward procurement requirements are consistent with current levels of forward procurement, forward procurement requirements may not affect the volume or pricing of bilateral contracting. Forward procurement requirements that lead to incremental procurement could lower bilateral contract prices on an annualized basis by providing suppliers the certainty to amortize maintenance and other costs over multiple years.

- Would the joint proposal's combination of multi-year ahead flexible capacity obligations procured through bi-lateral contracts, or via CAISO backstop procurement, provide sufficient revenues to resources?

The pricing that results from the implementation of the JRF will depend on many important details. For example, if forward procurement targets are set at levels consistent with current forward procurement levels, RA prices may not change significantly from current levels. Similarly, as discussed earlier, given near-term market fundamentals, CAISO-administered auctions that fail to utilize sloped demand curves or price floors likely will yield low prices. Similarly, if capacity is continually added to the market through out-of-market procurement, e.g., through the new build RFOs that result from the LTPP, the RA market is likely to remain oversupplied and yield low prices.

- Will the joint proposal's limited forward procurement of flexible and local capacity pursuant to a three-year forward resource adequacy obligation backed by a market-based CAISO backstop procurement mechanism provide sufficient procurement tools and sufficient additional revenue to mitigate the risk of retirement and retain needed flexible and local resources?

The efficacy of proposed three-year forward procurement requirements to retain needed flexible and local resources depends on the timing of need and near-term market conditions. For example, if a resource is needed beyond the three-year horizon of proposed forward procurement requirements and market conditions over the three years subject to procurement requirements are insufficient to support the continued operation of the resource, then three-year forward procurement requirements may be insufficient to support the continued operation of the resource.

- Will the joint proposal's voluntary backstop capacity market, along with market power mitigation measures, provide sufficient replacement for the capacity procurement mechanism when it sunsets in 2015? If a mechanism like the joint proposal were implemented, would CAISO still need an interim risk-of-retirement backstop mechanism and what would any such backstop mechanism look like?

As indicated above, the joint proposal is likely to yield capacity pricing in line with current RA pricing and below current CPM pricing, so the joint proposal may not serve as a sufficient replacement for CPM. In addition, as discussed earlier, the CAISO may still need a new risk-of-retirement backstop similar to the proposed FLRR mechanism with a time horizon that extends beyond the horizon of the forward procurement requirements proposed in the JRF.

- Is there a mechanism needed prior to the potential implementation of the joint proposal? For instance, is an interim mechanism necessary to procure resources at risk of retirement that are needed for flexibility? If so, what kind of mechanism?

Calpine's understanding is that the earliest that the joint proposal might be in place is late 2015 for the 2016-2018 delivery years. For needs that emerge during the implementation of the joint proposal that are relatively near-term, the CAISO may be able to rely on CPM. For needs that are further forward, the CAISO may need a mechanism similar to its proposed FLRR mechanism, if only on an interim basis.

- With respect to the goal of retaining flexible and local resources for reliability purposes that may be at risk of retirement, what alternatives to the joint proposal should be considered?

A mandatory centralized capacity market also should be considered. A mandatory capacity market would have many of the benefits of the joint proposal with respect to implementing binding forward procurement requirements for flexible capacity but, with appropriate market design elements, would be less susceptible to artificial price suppression associated with out-of-market procurement. In addition, it would minimize credit requirements by having the CAISO serve as a clearinghouse and lead to more efficient procurement by enabling the CAISO to optimize its procurement of resources to satisfy complex and inter-related requirements for system, local, and flexible capacity over a broader pool of resources.