

BAMx Comments on September 26, 2017 Flexible Resource Adequacy Criteria and Must Offer  
Obligation Working Group Meeting  
October 25, 2017

During the September 26, 2017 Flexible Resource Adequacy Criteria and Must Offer Obligation (FRACMOO) Working Group meeting, CAISO presented Key Findings from its initial analysis:

- Need for speed: maximum monthly one-hour net load ramps are consistently over 40 percent of the maximum three-hour net load ramp, and can be 50%; expected to increase
- More regulation is needed more often
- Downward ramps speed and magnitude are comparable to upward ramps
- Time between minimum and maximum net load and MWs ramped are increasing
- Forecast error (load and VERs) and load following needs are greatest between IFM and FMM markets
- Forecast error between post-IFM markets must be addressed by real-time flexible resources
- The cumulative non-coincident forecast error and load following needs are about 3,000 MW greater than the coincident error

Based on these needs, the CAISO is recommending that Flexible RA should be sufficient to cover:

- The entire ramping range over the course of a month
- Sufficient economic bids to clear the day-ahead market with a market based solution
- Faster ramp rates with potentially shorter notice in real-time
- An increased regulation quantity and frequency of use
- And that a new flexible RA framework should be developed based on a quantification of total ramping range and expected levels of possible uncertainty between market runs

Each of the CAISO's findings relate to the need for ramping capacity or regulation capacity, however, the recommendations regarding the amount of needed flexible capacity go beyond the ramping needs. Is CAISO proposing that flexible RA resources must address more than just ramping requirements? If so, how should the boundary between needed flexible RA and system RA be determined? Using the entire ramping range over a month greatly overstates the maximum ramping need in any given day within the month – the use of the entire ramping range over a month appears to be closer to describing a system RA solution rather than a flexible RA solution. Also, rather than comparing the minimum net load to the maximum gross load plus PRM, the ramping requirement should be based on the maximum changes in net load for any x-hour period within the month (where x is currently 3 hours). This approach would be more directly linked to the CAISO's ramping needs.

There needs to be a clear linkage between the CAISO's determination of the flexible RA need and the allocation (to LRAs and their LSEs) of the obligation for meeting the need. Those entities with resources and loads that are driving the need for flexible (ramping) resources should be allocated responsibility for meeting the needs in proportion to their contribution to

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the need. Any proposal to revise the flexible RA requirements must be designed to allocate the obligations consistent with cost causation principles. It isn't clear from the Working Group presentation and discussion that the suggested changes in flexible RA allocation will be able to meet this principle.

Redefining net load to be gross load less inflexible generation is problematic. First, a particular generator may bid a portion of its output and self-schedule a portion of its output in any given hour. It also may self-schedule in some hours, but bid in other hours. Second, if a self-scheduled resource was following the LSE's (or the CAISO's) load, it may be reducing the CAISO's ramping needs, rather than contributing to the ramping needs. How would such resources be treated for purposes of determining the net load and for allocating flexible RA obligations in these two circumstances? Third, even if VERs are bid and if they are willing to continue to operate even when prices are negative, they may continue to reduce the net load and contribute to the need for both downward and upward ramping resources. Therefore, it may be reasonable to continue to subtract VERs from the gross load, even if they submit economic bids.

How does the CAISO propose to address resource deviations between the RTD and actual metered generation? Consider a VER that submits no bids into any CAISO market, yet shows up after the RTD. CAISO's previous approach to determining net load incorporated this resource variability into its needs determination. Would the CAISO's new proposed approach do so, and if so, how?

CAISO is proposing that flexible capacity values need not necessarily reflect NQC. This would create an incentive for VERs to provide additional flexibility to address operational needs, though the CAISO may need to determine if additional reliability studies are needed. How would the capacity above the NQC be treated for purposes of determining if an LSE's RA obligations have been met? Would obligations exist requiring such VER resources to bid above their NQC? If CAISO continues to explore this concept, CAISO also should consider how it could rely on the additional flexibility provided by the EIM to reduce its need for FMM and RTD flexible capacity. The additional EIM intertie capability may be more consistently available for meeting flexibility needs than the VER resources within the balancing area.