Comments of Powerex Corp. on
Imbalance Conformance Enhancements

Submitted by	Company	Date Submitted
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Powerex appreciates the opportunity to provide comments on CAISO's January 30, 2018 Draft Final Proposal on the Imbalance Conformance Enhancements.[1] In the Draft Final Proposal, CAISO states that it is expanding the scope of this proceeding to include improvements to the use of load biasing and the load bias limiter. Among other things, CAISO proposes to revise its tariff to reflect its use of the load bias limiter and to continue to apply the limiter for a period of two years while CAISO continues to pursue enhancements to its load biasing capabilities.

As discussed further below, Powerex remains concerned about the impact of CAISO's use of load biasing and the load bias limiter on the CAISO markets. In particular, Powerex believes that:

- CAISO should immediately eliminate its use of the load bias limiter. The Draft Final Proposal acknowledges that the limiter may prevent the appropriate application of penalty pricing during conditions of genuine scarcity. While the Draft Final Proposal asserts it is "in the best interest of all parties" to continue applying the limiter, Powerex disagrees.
- CAISO should provide additional transparency regarding the impact of load biasing on the CAISO-operated markets, including whether the application of the resource sufficiency test to the CAISO BAA and the calculation of flexible ramping requirements are failing to include CAISO's load-biasing activity.
- The Capacity Ramping Tool appears to improperly and pre-emptively limit load adjustments based on the amount of available ramping capacity in each interval, raising many of the same concerns as the load bias limiter.

[1] For consistency with its prior comments, and the terminology used in other CAISO reports, Powerex uses the term load biasing in these comments.

I. CAISO Should Eliminate The Load Bias Limiter

CAISO market rules apply penalty prices when one or more requirements cannot be satisfied during a particular interval. The load bias limiter, however, prevents penalty prices from applying where a load adjustment exposes a supply infeasibility. CAISO has described the load bias limiter as a tool to "avoid invalid price spikes"[2] during "artificial market infeasibility[.]"[3]

Powerex agrees that, when scarcity conditions do not exist, there is no need to apply penalty prices. But it is well-established that penalty prices *must* apply when scarcity conditions *do* exist. Of great concern to Powerex during this stakeholder process has been the extent to which the load bias limiter prevents the proper application of penalty prices during conditions of genuine scarcity. In its previous comments and during the December 8, 2017 stakeholder meeting, Powerex requested that CAISO provide data regarding how frequently the load bias limiter had prevented penalty prices from being applied during periods of genuine scarcity.

The Draft Final Proposal does not provide any new data regarding how the limiter is being applied in practice and does not deny that the load bias limiter may, indeed, suppress penalty prices during genuine scarcity conditions. Instead, CAISO merely states that "it is impossible to determine when the limiter 'correctly' or 'incorrectly' triggers."[4] CAISO further insists that the load bias limiter should continue to be applied, for three reasons: (1) operator adjustments are "coarse"; (2) operator adjustments are "over-estimates" of the actual need for imbalance energy; and (3) continued application of the limiter is "in the best interest of all parties." Powerex believes that CAISO's reasoning is flawed in a number of respects.

First, the Draft Final Proposal provides an analysis purporting to show that operators tend to submit "coarse" adjustments. However, the fact that an adjustment was "coarse" does not imply anything about whether the adjustment accurately approximated actual system needs or not. The key issue is not whether an operator adjustment is "coarse," but whether the adjustment resulted in a more accurate forecast of actual system needs or not. The "coarseness" of adjustments does *not* mean that the adjustment is over-stated (versus under-stated) or that it is triggering artificial (as opposed to genuine) scarcity prices.

Second, the Draft Final Proposal repeatedly describes operator adjustments as "over-estimates." However, it does not provide any analysis to show that load biases entered

[2] Draft Final Proposal at 13.

[3] Draft Final Proposal at 14.

[4] Draft Final Proposal at 17.

by CAISO operators systematically overestimate actual system needs.[5] And even if correct, this statement does not show that scarcity conditions are only a result of the amount of over-estimated load. That is, a tendency to over-estimate the adjustment necessary to a load forecast does not justify ignoring up to the full quantity of load adjustment for pricing purposes.

Third, there is no basis for asserting that continued application of the limiter is in the best interests of all parties. To the contrary, it is clear that not all regions outside the CAISO BAA are better off under pricing practices that suppress proper penalty prices for EIM transfers to the CAISO BAA. It is also clear that suppliers located within the CAISO BAA are *not* better off under this approach. It is likely that it is the CAISO BAA—and particularly the net purchasers within the CAISO BAA—that benefit from the suppression or real-time market prices and price volatility as a result of the application of the load-bias limiter. As the number of entities affected by CAISO's price formation practices continues to grow—especially outside of California—Powerex believes it is critical for CAISO's decisions to be guided by best practices and FERC precedent on price formation and scarcity pricing.

For the foregoing reasons, Powerex believes that the load bias limiter should be eliminated immediately.

II. CAISO Should Provide Additional Information Regarding Its Use Of Load Biasing

In the Draft Final Proposal, in response to concerns regarding CAISO's persistent and significant use of load biasing, CAISO states that it is pursuing a number of initiatives that it believes will minimize the need for operators to manually adjust CAISO's load forecast. CAISO also states that it plans to pursue additional modifications to the load bias process to ensure that operators are more accurately able to predict system needs.

Powerex appreciates CAISO's commitment to pursue enhancements that have the potential to reduce the need to engage in load biasing and to improve the accuracy of operator adjustments.[6] Nevertheless, Powerex believes that additional transparency is necessary regarding the current use and impact of load biasing to determine whether

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[5] The description of load biases as "over-estimates" also seems inconsistent with the Draft Final Proposal's claim that "it is impossible to determine when the limiter 'correctly' or 'incorrectly' triggers," since both statements ultimately require a comparison of the load forecast used in the market run and the actual need for imbalance energy.

[6] While Powerex appreciates CAISO's commitment to design tools to enhance the accuracy of load biasing, Powerex notes that, as described, CAISO's proposed "ramping capacity tool" appears to do little to improve the accuracy of operator adjustments. While CAISO explains that the ramping capacity tool will tell the operator the amount of ramping capability available in the upcoming interval, it is important to recognize that obtaining additional information regarding the resources available in the market will not do anything to improve the operator's ability to accurately predict load in a given interval.

more immediate steps are necessary. It is important to recognize that CAISO's load forecast is a critical input into the CAISO markets and directly affects a range of CAISO's market processes, including the flexible ramping sufficiency test applied in the EIM and the calculation of requirements of flexible ramping products.

Given the frequent use of load biasing, however, it is unclear whether these processes are employing accurate forecasts of load, with the result that these processes may over- or under-estimate actual system needs. For instance, if the load forecast used for purposes of the flexible ramping sufficiency test does not accurately reflect system needs, there is no assurance that passing the test will mean that there is actually sufficient ramping capability available within the CAISO BAA. Similarly, use of an inaccurate load forecast for purposes of the flexible ramping product may result in CAISO procuring insufficient amounts of upward and downward ramping capability, thereby undermining the ability of this product to help ensure that sufficient ramping capability is available to maintain reliability.

In order to provide additional transparency into the impact that load biasing is having on the CAISO markets, Powerex requests that CAISO clarify what forecast CAISO is using for purposes of its flexible ramping sufficiency test and procurement of the flexible ramping product. Specifically, Powerex requests that CAISO address whether operator adjustments are reflected in the load forecast employed for the flexible ramping sufficiency test and flexible ramping product.

III. The Capacity Ramping Tool Would Improperly Limit Load Forecasts Based on Available Supply

Powerex supports CAISO's commitment to improve its load forecasts and reduce the need for load biasing. Powerex also supports improvements that make operator load biasing, when it is necessary, as accurate as possible. The Draft Final Proposal identifies several initiatives intended to pursue these goals.

One of the proposed tools is the Ramping Capacity Tool, which "displays the ramping capacity available for each market run."[7] The actual use of the tool is not entirely clear. On the one hand, it is described as "reducing the need for the limiter," implying that operators would use it to pre-emptively limit the amount of load bias they enter. On the other hand, "If the operator needs more than is available, he will still input that amount…," implying that the proposed tool would not change the amount of operator load bias that is entered, in which case there seems to be no reason to develop the tool.

Powerex believes it would be highly inappropriate for the load forecast used in a market run to be influenced by the amount of supply that is available in a given interval. This approach raises all of the same concerns as the load bias limiter; namely, that it would

[7] Draft Final Proposal at 13.

prevent market prices from reflecting scarcity conditions. Accurate price formation requires that markets be run with the most accurate and objective forecast of the system's need for imbalance energy in each interval. It is unclear to Powerex how information regarding available ramping capability is relevant to this objective.