

**Comments of Powerex Corp. on
March 2, 2022 Day Ahead Market Enhancements
Workshop**

Submitted by	Company	Date Submitted
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Powerex appreciates the opportunity to submit comments on CAISO’s March 2, 2022 Day-Ahead Market Enhancements Stakeholder Workshop (“Workshop”). As explained more fully below:

- Powerex supports the CAISO’s proposal to apply an Imbalance Reserve demand curve, as this would be an incremental step toward more appropriate scarcity pricing;
- Powerex supports CAISO’s exploration of ways to consider energy offer price when selecting Reliability Capacity Up (“RCU”) and Imbalance Reserve Up (“IRU”), but believes it should do so in a manner that does not distort real-time energy offer prices;
- Powerex believes key areas of the proposal—particularly expansion of bid mitigation and the continued fragmentation of IFM and RUC—must be considered in the context of CAISO’s EDAM initiative and stakeholder outreach, as these elements appear to be taking DAME on a path that may not provide the basis of an EDAM design that is workable for a critical mass of western entities.

Powerex supports the CAISO’s application of an Imbalance Reserve demand curve, as it is an incremental step toward more appropriate scarcity pricing

Powerex has long supported CAISO exploring enhancements to incorporate demand curves for reserves into its market optimization. The use of demand curves is an accepted and established design element in other organized markets, and its use improves the accuracy of market price signals during stressed grid conditions. Powerex therefore welcomes the inclusion of a demand curve for Imbalance Reserves in this stakeholder process, as a positive step to more accurate pricing in the CAISO-operated markets. At this time, Powerex does not have comments on the specific price and quantity levels of this price curve.

Powerex does note that the purpose of a demand curve—to indicate the economic cost of carrying a reduced level of reserve capacity—may be undermined if the market design does not appropriately recognize conditions when physical capacity is limited. The current CAISO market design currently enables virtual supply to displace physical supply in the IFM for satisfying bid-in demand. While Powerex recognizes the Imbalance Reserve product will be a physical capacity product, clearing additional virtual supply bids can counter the capacity benefits of the IRU product, while also giving the appearance of making more physical supply available to provide Imbalance Reserve. Powerex believes this possibility provides further reason to revisit incorporating a physical capacity constraint in the day-ahead market optimization, as discussed further below.

Powerex supports CAISO’s exploration of ways to consider energy offer price when selecting RCU and IRU, provided such actions can be done in a manner that does not distort real-time energy offer prices

Powerex appreciates the additional exploration of approaches to consider a resource’s energy offer price when selecting resources to provide RCU or IRU. This is a significant challenge that is not easily addressed.

Alternative 1 would import an RT offer price cap on resources receiving IRU or RCU awards. Any such offer caps are generally problematic, as they raise the possibility that resources will not be able to accurately reflect their marginal costs in their offer price in real-time. Resources that are unable to accurately reflect their marginal costs in offer prices will be discouraged from offering to provide IRU or RCU and will have incentives not to follow real-time dispatch instructions if they are selected.

Alternative 2 would limit IRU and RCU awards to capacity with a day-ahead offer price below an upper limit published by the CAISO and representing the estimated marginal cost of meeting the p97.5 net load forecast using day-ahead energy bids. This approach effectively declares that resources with day-ahead energy offers above this price level are too costly to be worth committing as IRU or RCU. This approach may be workable in the day-ahead timeframe, particularly if IRU and RCU demand curves are used to provide appropriate price signals when the market is unable to procure the target level of these products (due, among other reasons, to supply limits resulting from the energy price criterion). It is unclear whether this alternative would also require selected resources to limit their real-time offer price to the p97.5 limit; if so, the same concerns would apply as under Alternative 1.

Both approaches appear designed to create incentives for participants to reflect their relative expected energy offer prices in their day-ahead IRU or RCU bids (*i.e.*, such that resources with a risk of being dispatched “out of the money” will have a higher cost of providing IRU or RCU, leading to differentiation of these resources in their IRU and RCU

offer prices). Powerex believes it may be possible to achieve this goal without expressly limiting the energy offer prices used for real-time dispatch. Namely, the financial settlement of IRU or RCU awards could include a real-time option, with the p97.5 price used as the strike price. Importantly, this settlement occurs *regardless of whether the IRU or RCU resource is dispatched for energy in real-time*. Any real-time energy dispatch would be settled separately, as it is today. This would result in an entity that receives an IRU or RCU award being able to offer its supply in real-time at a price that reflects its estimate of its evolving marginal cost, but it would be financially exposed to the extent that offer price is above the p97.5 price. The IRU and RCU bidding incentives would still be achieved, as lower-cost resources will be naturally hedged to the exposure of the option-like settlement. Powerex understands that this type of approach was part of a recent proposal by ISO New England, and believes it may merit further consideration by CAISO and stakeholders.

Powerex believes key areas of the proposal—particularly expansion of bid mitigation and the continued fragmentation of IFM and RUC—must be considered in the context of CAISO’s EDAM initiative and stakeholder outreach

The enhancements being considered in this stakeholder process are highly relevant to the CAISO’s efforts, with regional stakeholders, to develop a proposal for an Extended Day-Ahead Market (“EDAM”). CAISO has explained that it seeks enhancements in the DAME stakeholder process that would be beneficial regardless of whether EDAM moves forward. Now that the stakeholder process for a potential EDAM is once again moving forward, the compatibility between the DAME proposals in this initiative and the EDAM proposal must be reconsidered. If the current DAME stakeholder process leads to a market design that is unworkable as the basis for an EDAM, then either the success of EDAM will be at risk, or the market design will need to be revisited anew, rendering the efforts in this stakeholder process largely wasted.

This potential is particularly acute given the ongoing consideration given to California-specific concerns in this DAME process. As an example, CAISO’s DAME proposal has long included eliminating the real-time must-offer requirement for RA resources. At the Workshop, however, the CAISO acknowledged that “California entities are firmly opposed,” and dropped this element from its proposal. The latest proposal will make a must-offer requirement “option” for each Local Reliability Authority, and commits to “provide LRAs with data to help them enforce.” Powerex does not take a position at this time on the issue of a must-offer requirement; rather, this issue highlights the challenge of developing the core engine of a potential multi-state organized market through a process in which the specific concerns of a stakeholder group in one of those states is elevated.

Two specific areas discussed at the Workshop elicit very different responses depending on whether they are considered in the context of a day-ahead market for the CAISO BAA only (*i.e.*, in DAME) or in the context of EDAM. Powerex urges the CAISO to consider the suitability of both of these areas for the fuller set of EDAM stakeholders before committing to a design. These two areas, as further described below, are (i) the need to co-optimize the procurement of all necessary products (minimizing the need for the sequential RUC process), and (ii) revisiting the approach to market power mitigation.

i. The Day-Ahead Market should jointly optimize procurement of all necessary products

A key “fork in the road” in this stakeholder process was whether to maintain the existing design of IFM and a sequential RUC process, or whether to integrate procurement of supply for all associated products into a single, optimized solution. CAISO previously developed a comprehensive design for integrated procurement of all products and service needed to not only clear bid-in demand for energy, but also to procure necessary reserve products to ensure reliability. Following strong opposition from CAISO load-serving entities and CPUC staff, CAISO abandoned that proposal, and has been pursuing a far less ambitious proposal that maintains fragmented procurement through separate day-ahead processes.

The current DAME proposal maintains the existing design of the CAISO Day-Ahead Market as largely a *financial* market, with physical performance generally being required only for real-time market results. This model stands in contrast to the rest of the west, the day-ahead bilateral market is the physical market, and entities are generally expected to physically perform according to their day-ahead commitments.

This is a critical difference, as the CAISO DAM does not differentiate between firm and non-firm energy resources, or between physical and virtual energy. In this manner, a day-ahead schedule for a highly reliable, dispatchable storage hydro unit is compensated identically to a schedule for a resource whose output is uncertain, or to an intertie bid that may be entirely speculative. It is recognized that the IFM solution does not attempt to procure reliable physical energy sufficient to meet the CAISO’s expected load; that is, the IFM solution is not intended to be a physically feasible solution. But the CAISO also recognizes that reliably serving load in real-time requires the procurement of physical supply, and this procurement cannot be deferred until the real-time market. For this reason, the CAISO procures additional physical supply through RUC in order to supplement whatever physical supply received a DAM award.

An organized day-ahead market that fully procures all products and services—including physical supply to meet expected load—would ensure that firm physical supply was appropriately differentiated and compensated for the additional value it provides relative to non-firm, speculative, or virtual supply. In other words, an integrated DAM design

would be more closely aligned with the physical nature of the existing bilateral day-ahead market in the west, and hence be a more workable starting point for a proposed EDAM.

It is Powerex's understanding that, at the time CAISO elected not to pursue an integrated DAM design, it also committed to re-examining this fundamental design element if and when development of an EDAM moved forward. Powerex requests that CAISO clarify the manner and timetable for this reconsideration to occur.

ii. Market Power Mitigation approach should be explored with regional stakeholders

Powerex fully supports the need for organized markets to include measures to protect against the exercise of either buyer or seller market power. There are various approaches to achieving this objective, however, and finding the approach that is workable and effective for a multi-state organized market is one of the core issues being explored in the EDAM stakeholder process. The Workshop indicated that the current DAME proposal would call for a further extension of the CAISO's historical Local Market Power Mitigation ("LMPM") framework to both the new IRU and RCU products. This extension includes the use of multiple deployment scenarios to determine the impact of non-competitive paths, and also the need to develop new "default availability bids" for RCU offers.

Powerex believes that prior to dedicating staff and stakeholder resources to further develop the details of expanding the CAISO's LMPM framework, the CAISO should seek input from potential EDAM participants whether this mitigation approach will be workable in the context of a multi-state organized market. One particular concern that has been repeatedly raised by external western entities is that the combination of resource participation requirements (*i.e.*, to pass RSE) together with the potential for offer prices to be mitigated can pose significant challenges for energy-limited resources, including storage hydro and battery storage resources, but also natural gas facilities with limited fuel. Entities have previously expressed that these concerns are specific to LMPM, and to its calculation of default energy bids, and are less applicable under the parameters of a conduct-and-impact test, which is the alternative approach applied in multiple other organized markets in the nation. Powerex therefore urges CAISO to seek input on this critical issue, including through a dedicated stakeholder process to evaluate whether a different approach to market power mitigation is needed in order for EDAM to be workable for a critical mass of western entities.