

Comments of Powerex Corp. on Day-Ahead Market Enhancements Phase 2

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Powerex appreciates the opportunity to comment on CAISO’s Issue Paper and Straw Proposal (“Straw Proposal”) in Phase 2 of the Day-Ahead Market Enhancements proceeding. In the Straw Proposal, CAISO explains that it is considering significant modifications to the structure of the existing CAISO day-ahead market (“DAM”), including implementing a Day-Ahead Flexible Ramping Product and eliminating the existing residual unit commitment (“RUC”) process.

Powerex appreciates the time and effort that CAISO has put into attempting to identify substantive day-ahead market design changes that have the potential to enhance the efficiency of the CAISO DAM. Powerex supports, in concept, both the implementation of a Day-Ahead Flexible Ramping Product and the elimination of CAISO’s RUC process.

However, as further discussed herein, Powerex strongly opposes the specific approach proposed by the CAISO in this stakeholder process.

While seeking to pursue enhanced efficiency in the CAISO DAM, the Phase 2 Straw Proposal does not alter the CAISO’s current “energy only” market design, and thus the proposal perpetuates the myriad challenges that CAISO has experienced as a result of market awards that are *presumed* to be capable and committed to physically delivering energy. These challenges have included reliability events and inefficient commitment and dispatch of units. They also have resulted in inefficient pricing in the CAISO DAM, as the CAISO is forced to frequently take out-of-market actions to backstop and backfill the supply that was accepted in its day-ahead market. The Phase 2 Straw Proposal would maintain the existing “energy-only” market design that enables energy products that lack bundled capacity attributes—including both virtual supply and lower-quality physical supply—to displace firm energy products.

The Phase 2 Straw Proposal was issued notwithstanding that Powerex and other stakeholders have urged the CAISO to consider pursuing an alternative DAM design that leads to more efficient commitment, dispatch, pricing, and settlement. In addition to improving market efficiency and price formation within the current CAISO DAM footprint, such a design would also be better aligned with the firm energy construct that underlies market transactions in the west outside the CAISO BAA, and thus may be a more workable approach for a future regional day-ahead organized market.

Based on the Phase 2 Straw Proposal, and the discussion on the associated stakeholder call, it appears to Powerex that CAISO is proceeding in this initiative under two implicit but critical

assumptions. First, the enhancements adopted in this stakeholder process appear to be assumed to also define an acceptable starting point for a Western Extended Day-Ahead Market (“EDAM”). Second, it appears to be assumed that other entities in the west will be willing to transition from the west’s existing firm energy paradigm—with the associated reliability and price formation properties—to a paradigm in which market transactions and prices reflect an “energy-only” product, and reliability requires extensive out-of-market actions and procurement. Powerex strongly believes that both of these assumptions are misplaced.

Powerex therefore opposes pursuing major structural changes to the CAISO DAM at this time, given the potential for conflicts with market design elements that may be necessary and/or desired by stakeholders as part of a future Western EDAM stakeholder initiative.

In the recent stakeholder initiative on Local Market Power Mitigation enhancements, CAISO successfully fostered a highly collaborative process for defining proposed changes in market design. This approach permitted a wide array of stakeholders—including market participants from the broader western region—to identify key considerations, evaluate proposals, and suggest alternatives or refinements. These enhancements were specifically undertaken with a view to making the CAISO’s existing local market power mitigation process and the options for calculating a resource’s default energy bid more workable in the context of voluntary participation in the expanded regional footprint of the Energy Imbalance Market.

In light of the CAISO’s stated objective of exploring a Western EDAM, any CAISO DAM enhancements undertaken at the present time should be done with a view to making transitional design changes that are capable of creating a potential path forward for a Western EDAM. As explained below, Powerex believes such enhancements must address the critical misalignment between the energy products and price formation practices that characterize each specific existing organized market, including the CAISO DAM, and the requirements and practices that characterize the well-established “firm energy” framework that exists in the west outside of the CAISO BAA. More specifically, western forward and day-ahead bilateral transactions and associated market prices outside of the CAISO Balancing Authority Area (“BAA”) are most typically for WSPP Schedule C Firm Energy—which bundles hourly and multi-hour energy with sufficient capacity to ensure performance—whereas the current CAISO DAM is best characterized as an “energy only” market design.

Under the CAISO DAM’s existing “energy only” approach (and under the Phase 2 Straw Proposal), the CAISO dispatch, pricing and settlement processes treat an offer to supply energy that is backed with physical capacity and transmission necessary to support delivery the same, as other offers that are not backed on a day-ahead basis by the physical resources and transmission necessary to support delivery, that are subject to interruption at the seller’s discretion, or that represent purely virtual or speculative supply. In other words, in the CAISO DAM’s “energy only” framework, firm energy is treated the same as:

- (i) **Unit Contingent Energy** - in which a supplier may interrupt deliveries due to lower production from a particular supply resource, such as a variable energy resource (rather than backstopping the delivery with sufficient bundled balancing reserves in the source BAA for the delivery period).

- (ii) **Non-firm Energy** - in which a supplier may curtail the delivery for any reason, including insufficient supply from a particular resource, a decision to recall the supply to support a better sale opportunity, or any other reason.
- (iii) **Speculative Supply** - an offer from a marketer or financial participant that is counting on its ability to later purchase energy in the short-term bilateral markets *after* it is dispatched by the CAISO in the DAM.
- (iv) **Virtual Supply** – an offer that is explicitly financial in nature and that will be “reversed” in the real-time market, thereby providing no physical energy or capacity to the grid.

In this “energy only” paradigm, the failure of a supplier to deliver on a CAISO DAM award carries only financial settlement consequences and is not treated as a failure to perform on an obligation under the CAISO tariff.

The CAISO’s existing DAM framework stands in marked contrast to the transactional framework that exists outside of the CAISO BAA, where suppliers are required to make clear whether they are supplying firm energy, unit contingent energy, non-firm energy, or energy that is otherwise subject to interruption. In practice, the vast majority of physical transactions outside of the CAISO BAA are for WSPP Schedule C firm energy, under which the seller is expected to back up its supply commitment with physical capacity and transmission rights that ensure that it can meet its delivery obligation except in very limited circumstances (*e.g.*, transmission curtailments or reliability emergencies). This is the case regardless of whether the sale is sourced from baseload resources, dispatchable resources, or variable energy resources—all of which are typically bundled with balancing reserve capacity in the source BAA to ensure delivery for the period of the commitment. Entities seeking to sell energy only, non-firm, unit-contingent, or other lower quality products are required to do so explicitly and *often at a significant price discount* from the prevailing price for WSPP Schedule C.

Importantly, the “energy only” nature of the CAISO DAM does not mean that CAISO does not procure physical capacity on a day-ahead basis. Indeed, CAISO will regularly procure backstop and/or residual capacity on an hourly and/or multi-hour basis after the DAM to “firm up” energy awards that cannot be counted upon to perform. In addition, the CAISO tariff permits the CAISO to regularly take other out-of-market actions such as “exceptionally dispatching” real-time resources to provide “backfill” energy. However, these commitments of capacity and/or backfill energy take place *outside* of the organized market for energy, with the result that the costs of the committed units are compensated through side payments (*e.g.*, residual unit commitment payments, exceptional dispatch payments, etc.) and are not reflected in market clearing prices. At the same time, the capacity attributes of suppliers that do provide firm supply into the CAISO DAM—and in doing so directly reduce the need for additional alternative capacity commitments—are not taken into account in the CAISO DAM’s selection and dispatch of resources or in the CAISO DAM’s price formation or settlement processes.

The table below provides an overview of the differences between the CAISO approach and the approach that is used throughout the rest of the west.

Energy Product	Bilateral Commercial Product	Transacted In Bilateral Markets?	Included In Bilateral Price Formation And Process For Standard Product & For Price Indices?	Participates In CAISO Day-ahead and Real-Time Markets (As Fungible Products)?	Included In CAISO Dispatch, Energy Price Formation And Settlement Processes (As Fungible Products)?
Firm Energy	WSPP Schedule C	Yes	Yes	Yes	Yes
Unit Contingent Energy	WSPP Schedule B	Yes	No	Yes	Yes
Non-Firm Energy	WSPP Schedule A	Yes	No	Yes	Yes
Speculative Supply		No	N/A	Yes	Yes
Virtual Supply		No	N/A	Yes	Yes

The Phase 2 Straw Proposal appears to perpetuate the CAISO’s existing “energy only” market design. For example, the Straw Proposal will continue to allow virtual supply (as well as other supply products that lack sufficient bundled capacity to be considered “firm”) to be directly substitutable for, and compete directly with, firm supply. To the extent the CAISO needs to procure additional energy or capacity to backstop of backfill supply awards that are not firm, Powerex understands CAISO will use new and existing out-of-market mechanisms such as reliability/residual unit commitment and exceptional dispatch processes.

Powerex opposes this approach as it is highly inefficient, and also because it is likely to create a number of distinct problems in the context of a broader regional day-ahead market.

- As an initial matter, a continuation of an energy-only approach in the context of a broader regional market will increase reliability risks for entities that elect to participate. While a purchase of energy under WSPP Schedule C provides a purchaser with the ability to de-commit or forego commitment of its own units, a BAA that elected to participate in a broader regional market that was “energy only” would have no way of knowing whether imports from the CAISO BAA scheduled to serve load on its system would actually materialize in real-time. If they did not, then the BAA relying on such imports may find itself in a position similar to the position that CAISO has found itself in when it has experienced significant intertie delivery failures: scrambling to find and commit additional resources to compensate for non-delivery through last-minute, short-term procurement and out-of-market dispatch. In other words, an entity that elects to participate in a day-ahead “energy-only” framework is likely to face new reliability risks associated with non-

delivery of supply or be forced to commit additional capacity in advance to mitigate the risk of non-delivery—potentially undermining the unit commitment savings that are one of the key potential benefits of a broader regional day-ahead market in the first place.

- Additionally, the CAISO DAM's current energy-only approach to participation and energy price formation is likely to inefficiently depress day-ahead market prices for firm energy in an EDAM, for at least two reasons:
 - First, the CAISO DAM's "energy only" approach enables the generally lower priced, and less valuable, energy products such as unit contingent energy, non-firm energy, explicitly virtual energy, and speculative energy to *inefficiently* displace firm energy products in the CAISO's DAM optimization and price formation processes, lowering market clearing prices.
 - Second, a broader regional market based on the current CAISO "energy only" DAM design would result in day-ahead prices that are expected to track average "energy only" EIM prices over time, since CAISO's virtual bidding mechanism is intended to converge day-ahead prices to real-time Fifteen Minute Market ("FMM") prices. Importantly, EIM price data reveals that EIM FMM prices in the northwest, particularly during peak hours in peak months, have generally been well below day-ahead bilateral firm energy prices reported in the same region (*i.e.* at the Mid-Columbia trading hub).

By suppressing the prices received for firm supply, the extension of the CAISO DAM's "energy-only" framework throughout the west has the potential to lead to very material shifts of value among ratepayers of different entities and regions. These concerns are substantially exacerbated by the fact that day-ahead market prices also have great importance to the value of forward energy market transactions, as futures contracts generally settle against day-ahead wholesale energy price indices.

Powerex notes that there are viable alternatives to the existing energy-only framework that could increase the efficiency of the day-ahead market for the CAISO BAA while taking into account the diverse interests of regions and stakeholders within a broader regional market. As described in detail in the whitepaper provided as an attachment to these comments, Powerex believes that a combined day-ahead market design that simultaneously optimizes the procurement of energy, ancillary services, and flexible capacity—and compensates all resources for the capacity and flexibility capacity attributes that they provide—has the potential to increase the efficiency of the CAISO's current DAM optimization process for the CAISO BAA while also potentially being workable for the diverse sets of entities and regions in the west.

Powerex welcomes any feedback that the CAISO or other stakeholders may have on the approach and issues set out in the attached whitepaper, including the discussion of other approaches that achieve these same reliability and efficiency objectives.

Powerex emphasizes, however, that any further discussion of significant changes in the near-term to the CAISO DAM should take place within the context of discussions related to a future

Western EDAM initiative. Any future Western EDAM initiative will necessarily include a comprehensive review of the CAISO existing day-ahead market design as well as other potential approaches; as a result, it would be inappropriate and inefficient to pursue significant changes to the existing CAISO DAM design only months before a Western EDAM initiative may formally commence.