Comments of Powerex Corp. on
Extended Day-Ahead Market
Revised Straw Proposal

Submitted by	Company	Date Submitted
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Powerex appreciates the opportunity to provide comments on the CAISO's August 16, 2022 Extended Day-Ahead Market ("EDAM") Revised Straw Proposal, and the stakeholder meetings on August 29, September 7, September 8 and September 14 ("Revised Straw Proposal").

Powerex continues to observe widespread and ever-growing interest in, and support for, increased regional wholesale electricity market coordination. Entities across the west are moving forward with initiatives to develop regional frameworks to maintain reliability and keep electricity affordable as the region transitions to a lower-carbon grid. This momentum is most evident in the recent FERC filing by the Western Power Pool for approval of its Western Resource Adequacy Program (WRAP). It is also evident in the engagement and active participation in the two leading initiatives to establish day-ahead organized markets: CAISO's EDAM, and SPP's Markets+ initiatives.

In the months ahead, entities will be making important choices regarding these two competing organized market initiatives, and will need to articulate to their customers, regulators, and stakeholders the rationale for their decision, including the expected costs and benefits. There are well-known analytical approaches for quantifying the potential economic benefits of a day-ahead organized market as compared to the "business as usual" scenario of day-ahead bilateral trading and scheduling. In particular, models can be configured to estimate the economic benefits associated with:

- Hourly transaction granularity, as compared to transacting in 16-hour and 8-hour blocks;
- Centralized unit commitment across a multi-BAA footprint, as compared to each BAA committing its own resources on a stand-alone basis; and
- More efficient transmission utilization, both through the use of flow-based limits and the elimination of pancaked transmission "hurdle" rates.

These critical features are the primary drivers of production-cost savings. But they are also standard components of any day-ahead and real-time organized market platform, and can therefore be expected to be found in both EDAM and in Markets+. This means that any cost-benefit analysis that focuses on these characteristics, without more, will be of little value in comparing the potential benefits available to particular entities under EDAM as opposed to Markets+.

There also may be only limited differences in aggregate economic benefits resulting from differences in the assumed footprints for the two initiatives, particularly as it relates to assumptions regarding which entities participate outside of California under each market option. The above is consistent with the results of the 2021 State-Led Study, which evaluated the potential production-cost savings for each state from a day-ahead market, under both a "One Market" scenario and a "Two Market" configuration. Notably, states outside California realized greater production-cost savings under the "Two Market" footprint; whereas California realized substantially greater production-cost savings under a "One Market" scenario with a single market footprint.[1]

The State-Led Study also highlighted that a single west-wide market footprint *would* make a material difference in the context of capacity investment savings (as opposed to production-cost savings).[2] Critically, however, capacity investment savings are largely unlocked in the forward resource planning timeframe, through regional resource adequacy programs such as WRAP, and not through day-ahead and real-time organized markets such as EDAM and Markets+.

The above means that entities seeking to compare the benefits available under EDAM and Markets+ will need to look beyond the common approach of examining production-cost savings arising from implementing a standard day-ahead organized market relative to a counter-factual with no day-ahead organized market at all.

Instead, entities will need to evaluate the benefits and costs stemming from the specific and material differences between the two day-ahead market proposals. From Powerex's own experience participating in all FERC-jurisdictional organized markets, as well as Alberta, ***the market design details can have a profound impact on both the total benefits that a market achieves, and on which entities and sub-regions receive those benefits***. The importance of market design is perhaps especially important where, as here, the day-ahead organized market will co-exist with existing frameworks for resource planning, funding and operating transmission systems, and maintaining reliability. Accordingly, Powerex's ongoing assessment of both the EDAM and Markets+ development processes is focused on where the proposed designs appear to have material differences in regards to the economic, environmental and reliability benefits that will accrue to California versus the aggregate external region, particularly with respect to the following questions:

- Is the proposal compatible with forward resource planning programs, such as WRAP?
- Will the design have a common resource adequacy requirement (*i.e.*, WRAP), or will it require a day-ahead resource sufficiency test to reconcile different approaches to resource adequacy? If it is the latter, will that resource sufficiency test enable systemic leaning by—and associated energy arbitrage profits for—entities in the CAISO BAA, as has been extensively experienced in the Western EIM?
- Will the proposal maximize the transmission capability that will be available to support market transactions? And will it do so while providing an equitable distribution of congestion rents to the entities that fund the transmission facilities that congest? Will the approach to transmission availability, resource adequacy/sufficiency and GHG-pricing programs collectively continue to provide strong incentives for third parties to invest in longer term external transmission service under the OATT, or will it instead cause extensive free riding on the external transmission system, with resulting transmission cost shifts onto native load customers outside California?

[1] https://www.energystrat.com/s/Final-Roadmap-Technical-Report-210730.pdf, page 40

[2] https://www.energystrat.com/s/Final-Roadmap-Technical-Report-210730.pdf, page 38

- Does the proposal provide for equitable pricing of energy transactions, favoring neither net sellers nor net buyers? Or are the price formation practices likely to lead to inaccurately suppressed prices, particularly during the non-solar hours when California is a large importer from the rest of the west?
- Does the proposal support accurate application of state GHG-pricing programs in the dispatch, pricing, and settlement of generation resources?
- Does the proposal provide for broadly inclusive decision-making below the board or governing body level, both in the initial design and the ongoing evolution and oversight of the market?

In Powerex's view, EDAM is currently on a path to proposing a market design that heavily favors California, both in terms of reliability and economic benefits, and would do so directly at the expense of entities outside of California. In contrast, Markets+ appears to be developing the foundation for a market design that maximizes the economic, environmental and reliability benefits for the entire Markets+ footprint, leading to an equitable allocation of those benefits among all participants and sub-regions. This contrast is most apparent in the following areas:

Resource Adequacy and Resource Sufficiency

- EDAM will be at a disadvantage to Markets+, since EDAM is not proposing to require participants to meet a common resource adequacy standard. In contrast, it appears Markets+ will require participants to participate in WRAP or meet a comparable reliability standard using the same metrics.
- As a result, EDAM will need to perform a Resource Sufficiency Evaluation ("RSE"), applied each day and each hour, to bridge the gap between participants' different resource adequacy frameworks. For entities in the external footprint, this raises two particular concerns:
    - External entities will need to incur additional costs to meet the EDAM RSE on days they experience challenging conditions such as high load, outages or low forecast renewable output. Markets+ would not impose such additional costs.
    - CAISO continues to resist adopting straightforward measures to ensure it brings its fair share of resources to EDAM, such as requiring a day-ahead e-Tag and requiring imports to be supported by identified resources. This resistance, combined with experience with the Western EIM's RSE, strongly indicates that the EDAM RSE may well perpetuate extensive and inequitable leaning by the CAISO BAA on supply procured by entities in the rest of the west. Such leaning could socialize the reliability risk associated with the CAISO BAA's chronic resource shortfalls, while enabling CAISO to enjoy "energy arbitrage profits" by buying the supply others brought to the table only in the hours it needs it, and at prices that are substantially less than the cost external entities incur to procure that supply.

Price Formation

- There is both FERC policy and industry best practices in other organized markets on price formation choices that drive efficient markets and produce equitable outcomes for both buyers and sellers.
- Markets+ appears to be on a path to adopting each of these best practices, including those related to fast-start pricing, robust but graduated scarcity pricing during tight system

conditions, balanced approaches to market power mitigation through a conduct and impact framework, and accurate GHG pricing.

- While dedicating a separate initiative on Price Formation, CAISO has made minimal progress on these issues to date:
  - On fast-start pricing and scarcity pricing, it has only proposed to discuss the topics in the future.
  - On market power mitigation, the CAISO is proposing to expand its current approach, including introducing a new variation of System Market Power Mitigation for the CAISO BAA, and has not been willing to consider implementing an alternative framework such as the conduct-and-impact test used in several other organized markets, and repeatedly suggested by CAISO's external stakeholders.
  - On GHG pricing, the CAISO is proposing to largely extend its flawed algorithmic "deeming" approach, which dispatches external coal and gas generation to support imports into California, but without recognizing the GHG costs of those resources and suppressing market prices when California is importing.
- In summary, EDAM appears to extend the existing price formation practices of the CAISO markets, which collectively lead to suppressed pricing, particularly in hours that the CAISO BAA is importing from the rest of the west, and which cause significant value shifts from external ratepayers to California ratepayers as a result.

Transmission

- Collectively, EDAM's transmission-related proposals appear to undermine incentives for entities to invest in long-term external OATT transmission rights on paths to California, which can be expected to lead to reduced third-party revenues to external transmission providers and associated cost shifts to external native load.
  - Unlike the general principle for the broader EDAM footprint, CAISO is so far unwilling to propose an equitable 50/50 sharing of congestion value on the major CAISO interties, and particularly on the interties between the Northwest and California.
  - There is no requirement to procure external OATT transmission service in connection with imports for California's RA Program (unlike WRAP), and it appears EDAM will not require external OATT transmission service for imports to count as supply in the EDAM RSE.
  - It appears EDAM will not require external transmission service, or perform any deliverability test, in connection with delivering clean supply to California.
  - In determining who will flow during critical conditions when transmission may limit the ability to serve all load in the footprint, EDAM has not provided any detail on whether or how it would respect OATT transmission priority. EDAM will, however, enforce CAISO-determined priority on the CAISO transmission system under such conditions. This is likely to cause adverse reliability implications for external entities, in addition to undermining investment incentives for securing high priority rights.

GHG Pricing

- EDAM appears to largely adopt the Western EIM's flawed algorithmic "deeming" approach to GHG-pricing programs.
  - This approach dispatches external coal and gas resources to support imports into California, but without recognizing the GHG emissions of those resources.
  - It also leads to suppressed market prices when California is importing, increased use of external coal and gas units, and failure to encourage the use of clean and renewable supply.
- The inaccuracies in this approach have been discussed repeatedly over the last several months, and Powerex has provided extensive analysis showing the extent of the problems.
  - At this point, it appears that the CAISO is unwilling to consider a different and more accurate approach, even though viable solutions are available.
- EDAM is on path to providing greater benefits for:
  - California LSEs, which would pay market prices that do not reflect the full cost of GHG emissions associated with imports; and
  - External utilities with a generation fleet that includes coal and other high-GHG resources that may be sold to California in EDAM without being subject to the costs intended under California Cap & Trade Program.
- EDAM is on a path to providing reduced benefits to clean resources, such as Northwest hydro but also to renewable and clean resources within and external to California, who will be undercompensated in EDAM.

Powerex has explained its concerns with these multiple elements of the EDAM Revised Straw Proposal in more detail in its prior comments and workshops. Powerex also agrees with and supports the detailed comments on the Revised Straw Proposal submitted by Vistra Corp.