

Comments on Day-Ahead Market Enhancements: Draft Final Proposal

Department of Market Monitoring

December 21, 2022

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *Day-Ahead Market Enhancements: Draft Final Proposal*.¹

The net export constraint will help balancing areas address their own capacity needs in the day-ahead and real-time markets

In previous comments, DMM has described how the proposed imbalance reserve product and requirements cannot be relied upon to ensure sufficient real-time energy bids within individual EDAM balancing areas.² The revised EDAM proposal addresses this issue by allowing each balancing area to set a net export constraint in the EDAM for their area. With the addition of the net export constraint, a balancing area will be able to participate in EDAM while also maintaining the capacity necessary to meet its own reliability needs given inherent uncertainty between the day-ahead and real-time markets. The constraint can be utilized in tight system conditions to prevent a balancing area from having to rely on imbalance reserves from within its area or another EDAM balancing area. This will be critical in tight system conditions because the quantity of imbalance reserves procured will be based on a statistical estimate of load uncertainty at the 97.5% confidence level. This approach will (at best) not ensure sufficient supply in 2.5% of hours under tight system conditions – which may not meet standard reliability criteria used by different balancing areas, such as loss of load in 1 day every 10 years.

Imbalance reserves should be procured based on a demand curve

As explained above and in prior DMM comments, procuring imbalance reserve capacity based on a 97.5% confidence level will not ensure there are sufficient real-time bids to meet standard reliability criteria, such as loss of load in 1 day every 10 years. However, with the proposed EDAM net export constraint, balancing areas will not need to rely on imbalance reserves to ensure EDAM energy transfers out of a balancing area do not jeopardize the reliability of that source balancing area. Therefore, setting the imbalance reserve up requirements at a level sufficiently above 97.5% to meet standard reliability criteria is not necessary as part of the DAME or EDAM design.

¹ California ISO, *Day-Ahead Market Enhancements: Draft Final Proposal*, December 1, 2022:

<http://www.caiso.com/InitiativeDocuments/DraftFinalProposal-Day-AheadMarketEnhancements.pdf>

² For example see: Department of Market Monitoring, *Comments on Day-Ahead Market Enhancements: Third Revised Straw Proposal*, May 19, 2022, pp. 5-6:

<http://www.caiso.com/Documents/DMM-Comments-Day-Ahead-Market-Enhancements-3rd-Revised-Straw-Proposal-May-20-2022.pdf>

Instead, DMM recommends that the CAISO procure imbalance reserves in the day-ahead market based on a demand curve, allowing the market to make tradeoffs between the cost of procuring reserves and an estimated value of those reserves. A demand curve would allow the market to economically incorporate flexibility. A demand curve would also allow energy prices in the day-ahead market to rise as capacity becomes scarcer rather than energy prices rising in large, discontinuous price increases. Finally, a demand curve would help mitigate potential market power for imbalance reserve and reliability capacity up products stemming from locational and transmission constraints incorporated in the day-ahead market.

Local market power mitigation is an important component of the proposal

The imbalance reserve and reliability capacity up products established as part of the day-ahead market enhancements would be locational and transmission constrained. As a result, local market power could clearly exist for these products. Imbalance reserve bids could be used to exercise market power for reserves as well as for energy. Therefore, local market power tests and mitigation are an important component of the proposal.

The ISO proposes to establish a uniform default capacity floor calculated using historical ancillary service or imbalance reserve up prices. Although additional details need to be developed, DMM believes this is a reasonable approach.

Energy bid price threshold for imbalance reserve up procurement

The CAISO proposes not considering capacity with energy bids above a pre-set *price threshold* for imbalance reserve up procurement. The CAISO would set the price threshold so that resources with energy bids above the threshold would be those that are unlikely to receive real-time market awards. By considering only capacity with energy bids below this threshold, the CAISO will procure imbalance reserves from capacity that it is more likely to dispatch economically for energy in the real-time markets. This will meet the CAISO's policy objective of not routinely procuring imbalance reserves that it will rarely dispatch for energy in real-time.

The CAISO's proposed energy bid price threshold is a reasonable approach to meeting the CAISO's policy objective provided the imbalance reserve up demand curve is sufficiently elastic. The CAISO previously proposed similar methods of reducing capacity considered for imbalance reserve procurement while the procurement targets were highly inelastic or fixed with very high penalty prices. This could have led to excessively high imbalance reserve prices and unnecessary prices spikes. However, a sufficiently elastic demand curve — that balances the costs of procuring imbalance reserves against their effect on expected costs — would keep the reserve prices from unnecessarily spiking to high levels while more accurately aligning reserve prices with the value of the reserves to the market.

The imbalance reserve product definition would change with adjustable parameter

The CAISO proposes to make the period over which imbalance reserves must be deliverable an adjustable parameter. However, this parameter is fundamental to what the imbalance reserve

product is. For example, spinning reserves must be deliverable within 10 minutes — making them a 10-minute product. Without knowing whether imbalance reserves are a 15-minute, 30-minute, 60-minute, or product of some other duration, we cannot know what the product actually is. The CAISO does not explain how or with what criteria it will determine when adjustments would be made.

As DMM explained in previous comments, much of the day-ahead uncertainty is resolved before the start of the trade hour. The uncertainty does not all materialize in 15-minutes.³ Therefore, DMM believes the CAISO should procure a significant portion of imbalance reserve requirements as an hourly product. The CAISO could procure a subset of reserves, such as the 15-minute market flexible ramping product requirement, as 15-minute reserves.

Imbalance reserve demand should be settled at the locational prices of the locations where imbalance reserves are modeled as being withdrawn

The CAISO proposes to pay imbalance reserve suppliers at locational prices, but to not allocate imbalance reserve costs to load at these same locational prices. Instead, the CAISO will calculate total payments to imbalance reserve suppliers, and will allocate those payments based on imbalance demand. This is analogous to settling load at the generation prices rather than the load prices. The result is that the CAISO will not collect congestion rent from imbalance reserves even though imbalance reserves will use the transmission system. By not settling at the withdrawal node prices, the resulting congestion revenue imbalances will shift some of the costs of imbalance reserves to those who would receive the congestion rents — most likely holders of congestion revenue rights.⁴

DMM recommends that the CAISO settle payment for imbalance reserves at the withdrawal node prices. This will align the settlement prices with the market prices. The CAISO could still calculate the allocation shares the same as it now proposes, consistent with its cost causation principles, but apply the shares to the total cost calculated at the withdrawal nodes.

The real-time market needs to be able to hold and access reserves procured in day-ahead market.

As discussed in previous comments, the real-time market should have mechanisms to efficiently determine whether or not to hold onto flexible reserves that were procured in the day-ahead market. If the real-time market does not have a mechanism to maintain these reserves, the value of procuring them in the day-ahead market could be significantly reduced.⁵

³ Department of Market Monitoring, *Comments on Day-Ahead Market Enhancements: Revised Straw Proposal*, August 18, 2021, pp. 4-5
<http://www.caiso.com/Documents/DMM-Comments-on-Day-Ahead-Market-Enhancements-Revised-Straw-Proposal-Aug-18-2021.pdf>

⁴ To the extent that the shortfall increases revenue inadequacy offsets, the costs will be shifted to holders of congestion revenue rights. To the extent that the shortfall is not completely shifted to offsets, the remainder of the cost will shift to measured demand rather than the CAISO's proposed allocation of imbalance reserve costs.

⁵ *Ibid*, pp. 1-2