

Comments on Day-Ahead Market Enhancements Straw Proposal (February 3, 2020)

Department of Market Monitoring

March 30, 2020

Overview

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the Day-Ahead Market Enhancements (DAME) Straw Proposal.¹ As explained in these comments, DMM is providing four key recommendations on the DAME initiative:

- The ISO should consider reasonable alternatives to the “reliability energy” (REN) proposal, such as increasing the imbalance reserve up requirements to cover the difference between the ISO load forecast and cleared physical supply.
- A stronger incentive is needed to ensure day-ahead imbalance reserves perform in the real-time market.
- The ISO should consider procuring imbalance reserves for multiple ramp time frames.
- The ISO should extend the real-time flexing ramping product time horizon to preserve the value of day-ahead flexible reserves that are procured.

The ISO should consider reasonable alternatives to REN constraints

Most stakeholders, including DMM, agree that day-ahead procurement of flexible reserves is desirable and needed as the western grid continues to increasingly rely on renewable generation. However, there is controversy regarding the “reliability energy” (REN) products that would clear against the ISO forecast. This controversy has consumed much of the DAME initiative process for the last couple years. If this controversy continues it may continue to delay the DAME initiative and the introduction of flexible imbalance reserve products to the day-ahead market.

To expedite the completion of the complicated design work that still needs to be done for imbalance reserve products, DMM recommends that the ISO separate any potential future development of a REN product or combined IFM/RUC into a separate stakeholder process from imbalance reserves. The REN product would significantly increase the role that the ISO plays in determining day-ahead market energy awards and prices. Separating the REN product into a different stakeholder initiative from imbalance reserves would allow the REN product development to proceed on a slower track and to not interfere with the development of the imbalance reserves product and the extended day-ahead market.

As the ISO proceeds with designing the imbalance reserves product, the ISO should consider design alternatives to address the issues that the REN product was intended to address. One alternative for the ISO to consider is to increase the imbalance reserve up requirements to cover the difference between the ISO load forecast and cleared physical supply. DMM’s understanding is that the problem that the

¹ *Day-Ahead Market Enhancements: Straw Proposal*, California ISO, February 3, 2020:
<http://www.caiso.com/InitiativeDocuments/StrawProposal-Day-AheadMarketEnhancements.pdf>

REN constraints are meant to solve is that without REN constraints, during some hours the physical supply clearing the IFM may be less than the forecast (expected) net load. However, the imbalance reserve up product could be designed to alleviate this concern.

Under the ISO's current proposal, if the ISO implemented upward imbalance reserves without the REN constraints, the upward imbalance reserves could in some circumstances not cover the difference between forecasted load and day-ahead cleared physical supply. The current RUC process would commit additional capacity to cover the difference between physical capacity and the ISO forecast. However, if some of the imbalance reserves are used to meet the difference between forecasted load and day-ahead cleared physical supply, then these reserves will not be available to meet the full uncertainty requirement for which they were procured.² As an alternative to REN constraints, the ISO should consider increasing the total upward imbalance reserves to account for this difference. By adjusting the imbalance up requirement to cover this difference, RUC would no longer be needed.

Because the ISO has the forecast and all the bids before the day-ahead market runs, it seems feasible that the ISO could create a very good estimate of the difference between forecasted load and day-ahead cleared physical supply and adjust the imbalance up reserves requirement accordingly.

Adjusting the up requirements would achieve much of the REN constraint's aims without all the complications that have caused the controversy. Importantly, these adjustments would ensure sufficient physical capacity scheduled in the IFM to meet the full range of uncertainty over what the real-time net load may end up being.

As noted below, enforcing a fifteen-minute ramp requirement for all imbalance reserve procurement would be overly restrictive. A mix of procurement that is rampable over multiple timeframes, such as an hour, fifteen-minutes, and five-minutes may be more appropriate. The adjustments to upward imbalance reserves proposed above would be made to the hourly requirements.

Imbalance reserves lack real-time financial incentives

As currently proposed, the financial incentive for a resource operator to offer their imbalance reserves into the real-time market would not be significantly larger than the resource operator's financial incentive for offering capacity that has neither a day-ahead energy schedule nor an imbalance reserve award into the real-time market.³ The only differences are that imbalance reserve awards have a real-time must-offer obligation and that the ISO could claw back day-ahead imbalance reserve payments. This leaves open the possibility that resources with no intention of being available in real-time could try to get day-ahead imbalance award payments knowing that if they are called upon in real-time and do not deliver the only market consequence is they lose some of the payments. This is unlike energy and ancillary service awards where resources that do not deliver must pay the real-time price for these products. While DMM recognizes that finding an appropriate real-time incentive for imbalance reserves may not be straight forward, a stronger real-time incentive is needed.

² Assuming the requirements are based on differences between day-ahead and real-time forecasts.

³ The only incentive is the potential to profit from an incremental real-time market award.

The ISO should consider procuring imbalance reserves for multiple ramp time frames

The ISO currently proposes procuring imbalance reserves with individual awards constrained by fifteen-minute ramp capability. The imbalance reserve requirements will be based on the uncertain difference between day-ahead and real-time net load for a trade hour. But not all of this uncertainty is realized within that trade hour alone or just within fifteen minutes. Often much of the uncertainty is realized over the course of the day.⁴ Enforcing fifteen-minute ramp constraints on all the capacity procured to meet the entire uncertainty requirement could overly restrict what is counted as available supply.

As an alternative the ISO should consider breaking the total uncertainty into multiple requirements one with a fifteen-minute ramp timeframe, and the others with different ramp timeframes. For example, there might be three products with hourly, fifteen-minute and five-minute ramp timeframes. Figuring out how to treat ramp capabilities can be tricky, particularly given the different market granularities between day-ahead and real-time, but DMM thinks this aspect of the imbalance reserve design requires additional design consideration.

DMM continues to recommend that the ISO extend the real-time flexing ramping product time horizon to preserve the value of day-ahead flexible reserves that are procured.

DMM continues to recommend that the ISO enhance the real-time flexible ramping product to address uncertainty in net load forecasts over longer time horizons.⁵ Currently ISO operators take numerous and significant out of market actions to procure additional flexible reserves. Extending the real-time market uncertainty time horizon would reduce such manual intervention, increase procurement of flexible reserves through the real-time market, and also maintain and utilize the value of flexible reserves procured in the EDAM.

⁴ The hourly uncertainty requirements are not independent of each other but are correlated.

⁵ *Comments on Flexible Ramping Product Refinements: Issue Paper and Straw Proposal*, Department of Market Monitoring, December 5, 2019: <http://www.caiso.com/InitiativeDocuments/DMMComments-ExtendedDay-AheadMarket-IssuePaper.pdf>

Comments on Issue Paper on Extending the Day-Ahead Market to EIM Entities, Department of Market Monitoring, November 22, 2019: <http://www.caiso.com/InitiativeDocuments/DMMComments-ExtendedDay-AheadMarket-IssuePaper.pdf>