

Comments on Flexible Ramping Product Refinements Revised Straw Proposal (March 16, 2020)

Department of Market Monitoring

April 7, 2020

Overview

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the Flexible Ramping Product Revised Straw Proposal.¹ The proposed refinements will continue the process of developing market based procurement of flexible capacity and reserves needed to manage a system that is increasingly comprised of intermittent renewable resources. The process started with the implementation of the real-time flexible ramping constraint, evolved into the current real-time flexible ramping product and now includes development of the ISO's proposed day-ahead imbalance reserve products.

DMM supports the proposed refinements as significant improvements to the flexible ramping product. DMM also continues to recommend that the ISO enhance the real-time flexible ramping product to address uncertainty in net load forecasts over longer time horizons.² Although this valuable change is not needed to implement the ISO's proposed refinements, the ISO should begin to explore extending the flexible ramping product time horizon as soon as practical.

Deliverability enhancements

Accounting for transmission constraints will significantly improve the effectiveness of procured flexible ramping reserves. It has been pointed out that the deployment scenarios will not ensure that all procured flexible ramping capacity is deliverable in all cases. While true, ensuring all capacity is always deliverable is too high a standard. Using the deployment scenarios will be a vast improvement over the current procurement which ignores transmission constraints altogether. The ISO's proposal should greatly improve the flexibility of the real-time dispatch to meet uncertain net load. To the extent that significant amounts of stranded flexible reserves persist, the ISO can continue to refine the deployment scenarios.

Proxy demand response eligibility

Restricting procurement of flexible reserves to resources that are dispatchable within the real-time market intervals is necessary given the purpose of the flexible ramping products. Therefore any proxy demand response and other resources that are not dispatchable within the real-time market intervals should not be eligible to meet flexible ramping requirements.

¹ *Flexible Ramping Product Refinements: Revised Straw Proposal*, California ISO, March 16, 2020: <http://www.ca.iso.com/InitiativeDocuments/RevisedStrawProposal-FlexibleRampingProductRefinements.pdf>

² *Comments on Flexible Ramping Product Refinements: Issue Paper and Straw Proposal*, Department of Market Monitoring, December 5, 2019: <http://www.ca.iso.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.ca.iso.com/InitiativeDocuments/DMMComments-ExtendedDay-AheadMarket-IssuePaper.pdf>

Deriving FRP demand curves from regressions

DMM supports the ISO's effort to improve the accuracy of its estimates of net load uncertainty. Using quantile regression to estimate the percentile points along the demand curve could be a significant improvement over the current approach.

The ISO plans to put the regression formulation in a BPM. The ISO should continue to inform stakeholders and seek their input on the regression formulation in this stakeholder process and through the BPM process. Stakeholders can provide valuable input on the formulation.

For example, in the day-ahead enhancements initiative, the ISO proposed estimating three different regressions for load, wind, and solar, adding them together, and then mechanically adjusting the result because the estimates would be non-coincident. Stakeholders pointed out that because load, wind, and solar are correlated (i.e. not independent), the statistical properties and accuracy of an estimate based on this proposed adjustment would be unknown.

Thus, the ISO should continue to inform stakeholders and seek their input on the regression formulation in order to benefit from stakeholder review and input.

FRP demand curve effects on energy prices

The ISO points out that by enforcing transmission constraints, energy prices will rise as the quantity of flexible ramping capacity procured is reduced along the demand curve. This reflects the intention of the flexible ramping product design, which is to have energy prices include the cost of reducing available flexible reserves.

Currently the energy price often does not include the cost of reducing *effective* flexible reserves. This is because the flexible ramping product does not account for transmission and the optimization can often procure *ineffective* flexible reserves behind transmission constraints that cannot be converted to energy. By enforcing transmission constraints in the flexible ramping procurement, the energy price will account for the cost of reducing effective flexible reserves consistent with the purpose of the flexible ramping product design.

Increasing system requirements because of minimum flexible ramping requirement

The ISO proposes to temporarily enforce a minimum flexible ramping requirement for some BAAs. The minimum requirements would end after the ISO implements nodal flexible ramping procurement. The ISO also proposes to increase the system uncertainty requirement by an amount based on the minimum requirements enforced for some BAAs.

In the ISO's example, the system requirement increases significantly due to these minimum BAA are requirements (i.e. by about 34 percent above the 97.5th percentile estimate of system uncertainty needs across the historical distribution).³ DMM is unsure of the reasoning behind the system requirement adjustments and is concerned the adjustments could lead to significant over procurement of flexible ramping capacity at the system level.

The ISO also proposed increasing the system requirement based on the BAA level requirements of BAAs that fail the flexible ramping sufficiency test. Increasing the system requirement as BAAs fail sufficiency

³ *Flexible Ramping Product Refinements Stakeholder Call 3/23/20* California ISO presentation pp. 15-16: <http://www.ca.iso.com/InitiativeDocuments/Presentation-FlexibleRampingProductRefinements-RevisedStrawProposal.pdf>

tests could create large changes from one hour to the next and potentially lead to further over procurement.

DMM requests that the ISO further detail why these potentially large increases to the system requirement are needed and how the ISO may ensure that the increases do not lead to unnecessary over procurement.

DMM continues to recommend that the ISO extend the real-time flexible ramping product time horizon

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.⁴ Currently ISO operators take numerous and significant out of market actions to procure additional flexible reserves. Extending the real-time market uncertainty time horizon should reduce the need such manual intervention, increase the procurement and pricing of flexible reserves through the real-time market, and also maintain and utilize the value of flexible reserves procured in the day-ahead or extended day-ahead market.

Extending the time horizon of the real-time flexible ramping product will be a significant but valuable design change. This change is not needed to implement the ISO's proposed refinements which should go forward without extending the time horizon. However, the ISO should begin to explore extending the flexible ramping product time horizon as soon as practical.

⁴ *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>

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