

Comments on Day-Ahead Market Enhancements Phase 2: Flexible Ramping Product Issue Paper/Straw Proposal

Department of Market Monitoring

April 9, 2019

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the Day Ahead Market Enhancements Phase 2: Issue Paper / Straw Proposal (Phase 2 Straw Proposal).¹ DMM is generally supportive of the ISO procuring day-ahead flexible reserves and re-optimizing ancillary services in real-time. DMM also supports the ISO's move to exogenous flexible requirements. The proposed changes have the potential to improve the ISO markets. Below DMM provides comments on several aspects of the Phase 2 Straw Proposal.

A demand curve is preferable to a requirement set at a “specified confidence interval”

The ISO requested feedback on approaches for procuring day-ahead flexible reserves. The ISO proposes procuring flexible reserves to a “specified confidence interval” such as 95%. The requirement would presumably only be relaxed at a penalty price near but below \$250/MW.

Setting a requirement at one specific value (above which the flexible reserves are valued by the ISO at \$0/MW and below which they are valued near \$250/MW) would create a discontinuous demand curve with a sudden large change in value. Since day-ahead flexible procurement will affect day-ahead energy prices and commitments, the ISO should consider a phased demand curve that allows for a trade-off between the costs and benefits of procuring flexible reserves (e.g. multi-step, linear, or piecewise-linear).

The ISO should consider allowing separate offer prices for separate products

The ISO is considering having resources submit one offer price for both flexible ramping product and corrective capacity, and potentially only one offer price for upward and downward capacity.

The ISO should consider allowing separate capacity offers for different products. Receiving one product award or another in the day-ahead market changes the set of options available to a resource going into the real-time market. When a product is sold in the day-ahead market the option to sell it in the real-time market is lost and the option to buy it back is gained. The option value lost or gained from a particular capacity award depends in part on the probability distribution of real-time prices for that capacity product. The distributions of real-time prices will likely be different across different capacity products. Therefore, a single capacity offer

¹ *Day-Ahead Market Enhancements Phase 2: Flexible Ramping Product Issue Paper / Straw Proposal*, California ISO, February 28, 2019: <http://www.caiso.com/Documents/IssuePaper-StrawProposal-Day-AheadMarketEnhancementsPhase2.pdf>

price will likely be insufficient to allow suppliers to represent the trade-offs of being awarded capacity among multiple different capacity products.

Offer caps may be the most straight forward market power mitigation at this stage

In the Phase 2 Straw Proposal, the ISO asks for comments on what form of capacity offer mitigation may be needed and how to generate reference costs for capacity.

An appropriate offer cap would be the most straight forward type of mitigation. This would avoid the complexity of creating a mitigation process which would involve carefully considering the interaction of both capacity and energy offers as well as creating methods to estimate resource specific reference costs.

Local procurement of flexible reserves is preferable to zonal procurement

The ISO also seeks input on consideration for deliverability of flexible reserves. The ISO has previously noted that the current real-time flexible ramping product may not be deliverable because of transmission constraints.²

With zonal procurement of flexible reserves in the day-ahead market, the market software could not determine or ensure that the procured reserves are deliverable given transmission constraints. Local procurement that accounts for transmission constraints would result in deliverable flexible reserves and would clearly be preferable to zonal procurement. However, we do not know whether or not it is feasible for the day-ahead optimization to locally procure flexible reserves. If it is not feasible, the ISO zonal procurement is preferable to system level procurement. The ISO should also extend local or zonal procurement to the real-time flexible ramping product if feasible.

² California ISO, Lin Xu, *Discussion on flexible ramping product*, September 8, 2017 pg. 16-17: http://www.caiso.com/Documents/Discussion_FlexibleRampingProduct.pdf