

Local Market Power Mitigation Enhancements Issue Paper/Straw Proposal

Comments by Department of Market Monitoring

October 4, 2018

Overview

DMM appreciates the opportunity to comment on *the ISO's Local Market Power Mitigation Enhancements Issue Paper/Straw Proposal* issued on September 13, 2018.¹

1. Changes to real-time market power mitigation process

Eliminating extension of mitigation to subsequent intervals

The ISO proposes to eliminate the extension (or “carryover”) of mitigation from one 15-minute or 5-minute interval to subsequent intervals in that hour or 15-minute period.² This carryover of mitigation originally stemmed from a combination of software issues and concerns about accuracy of earlier mitigation designs. Since then the accuracy of mitigation has been dramatically improved by several changes, notably the LMPM Enhancements 2015 initiative. Given the current level of accuracy, DMM supports eliminating the extension of mitigation in one 15-minute interval to the rest of the 15-minute intervals in the hour. DMM also supports eliminating the extension of mitigation in one 5-minute interval to other 5-minute intervals.³

The ISO also proposes to eliminate the extension of mitigation in the 15-minute market to the corresponding three 5-minute market intervals. While this element of the proposal further reduces the odds that resources will be dispatched up based on mitigated bids, it may also create adverse consequences. A resource may sell energy based on a mitigated bid in the 15-minute market, and then buy back the energy at a higher price based on a higher unmitigated bid in the 5-minute market. The result is that a resource could end up running at its day ahead schedule but forfeiting revenue to the ISO in real time.⁴ The relative advantages of the current policy versus the proposed policy may differ by market participant and by resource. DMM recommends the ISO solicit and consider stakeholder feedback on this issue before finalizing its policy proposal.

¹ <http://www.caiso.com/Documents/IssuePaperandStrawProposal-LocalMarketPowerMitigationEnhancements.pdf>

² Straw Proposal, p 10.

³ A summary of LMPM congestion accuracy can be found in DMM's 2017 Annual Report, on p.157: <http://www.caiso.com/Documents/2017AnnualReportonMarketIssuesandPerformance.pdf>

⁴ For more discussion and an example see pp. 13-14 in http://www.caiso.com/Documents/DraftFinalProposal_LocalMarketPowerMitigationEnhancements2015.pdf

DMM also notes that eliminating mitigation carryover and placing a small adder on the competitive LMP will not eliminate the possibility of flow reversal between EIM areas and the ISO. Prices have been observed to be higher in the binding market run, which uses mitigated bids, than in the mitigation run, which uses unmitigated bids. This can be due to the small, allowable differences in solution quality inherent in any two attempts to numerically solve an optimization problem. This can also be due to unexpected implementation issues.⁵ As a result, flow reversal can occur for reasons that are unrelated to mitigation of a particular resource's or BAA's bids. Therefore, the ISO's proposals to eliminate mitigation carryover and to introduce a small adder to the competitive LMP should be expected to reduce, but not to eliminate, flow reversal between EIM BAAs and CAISO.

Competitive locational marginal price adder

As a further step towards limiting flow reversal, the ISO has proposed to place a small adder on each resource's competitive LMP. As described above, prices in the market run can be higher than prices in the mitigation. Moreover, competitive LMPs in the mitigation run could be lower than system prices in the market run due to the fact that the run use different slack buses for decomposing LMPs between congestion and system components. Therefore, the ISO may find it difficult to eliminate, or achieve a subjective, satisfactorily low level of flow reversal without a large competitive LMP adder.

The adder could increase market clearing prices when marginal energy in the market run comes from a bid segment that has been mitigated down to the competitive LMP. Therefore, in the stakeholder process the ISO should clarify the metrics it will use for determining how large to make the adder. The ISO should also determine a cap for the adder and include the value of that cap in the tariff.

Limiting EIM transfers based on mitigation run results

To avoid what the ISO has termed *economic displacement* among EIM entities, the ISO proposes to determine EIM transfers in the mitigation run and then to freeze those transfer levels while calculating prices based on mitigated bids in the market run. In doing so, the ISO is proposing to determine schedules using different constraints and inputs than it uses to determine prices. This will lead to prices that are inconsistent with the ISO's dispatch instructions and incentives for resources to deviate from dispatch or to not bid their true marginal costs.

Consider the mitigation run example in Figure 1. With the unmitigated bids, a transfer of 500 MW occurs from BAA 1 to BAA 2. Figure 2 shows the prices and schedules that would occur using the mitigated bids in the market run under the ISO's proposal to limit changes in exports between the mitigation and market runs.

⁵ For more details on this see pp. 24-28 of the ISO's December 2017 MPPF presentation: http://www.caiso.com/Documents/Agenda-Presentation-MarketPerformance-PlanningForum-Dec18_2017.pdf

Figure 1. Mitigation run solution

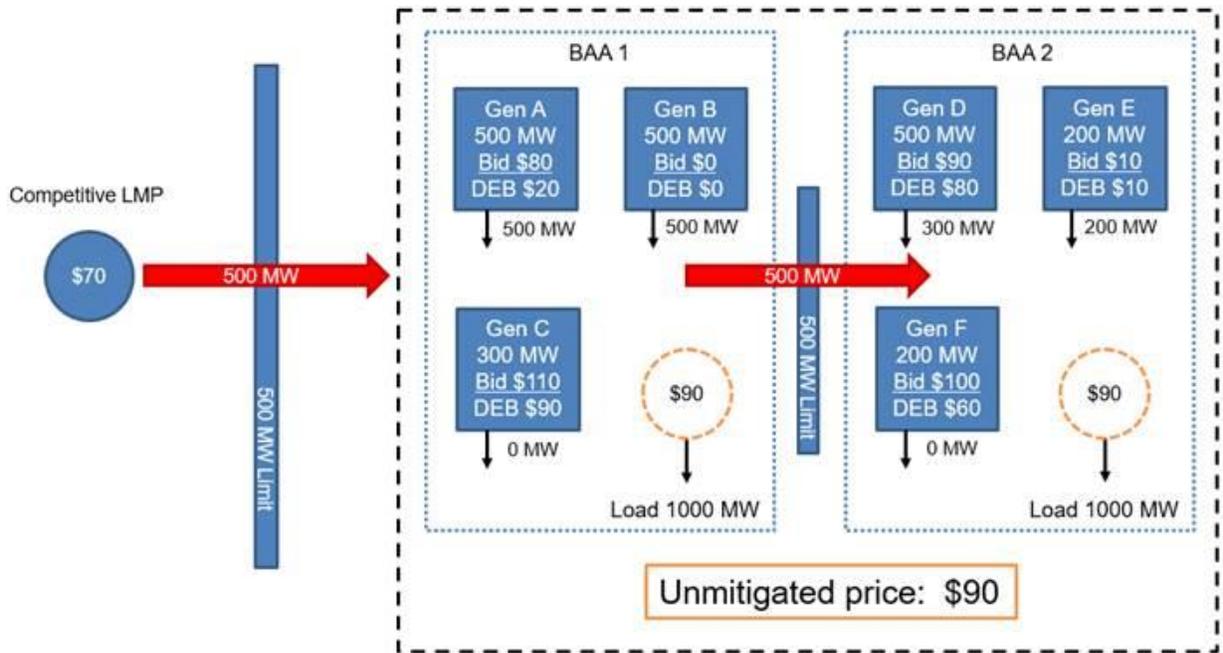
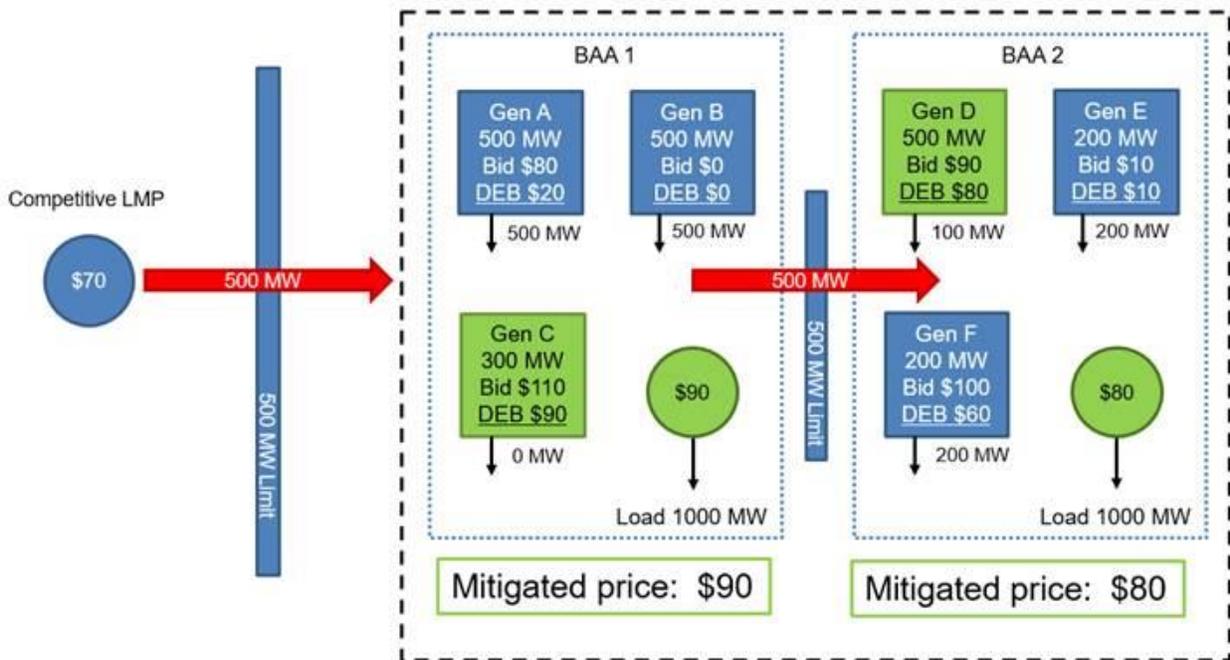


Figure 2. Market run solution



In this example, the ISO's proposal to not allow changes to the 500 MW transfer from BAA 1 to BAA 2 results in power flowing from the higher priced BAA 1 to the lower priced BAA 2 in the market run. This could create unintended and inefficient outcomes and behavioral incentives.

The ISO should thoroughly vet with stakeholders the potential implications of a market design that allows power to flow from a higher priced area to a lower priced area. Initial areas of concern include:

- 1) RTCIO calculation and allocation; and
- 2) Incentives for market participants to submit bids that do not reflect true marginal costs but that create flows from higher priced areas to lower priced areas that the participants could profit from

If the ISO decides to continue to consider this policy in its next proposal, DMM recommends that the ISO provide more specific details on the proposed design. The relationship between transfers that are fixed from the mitigation run of a 15-minute interval and the transfer capability that the ISO proposes to use in the corresponding 5-minute interval is unclear. Would the transfers be frozen in the 5-minute market as a result of the 15-minute mitigation run results? The ISO should define the precise circumstances under which transfers in the 15-minute market and 5-minute market would be frozen.

2. DEB option for EIM use-limited resources

One of the key inputs to the new approach in the straw proposal is the number of months that a hydro resource can store limited hydro energy. As discussed at the September 28 Market Surveillance Committee (MSC) meeting, it may be difficult and/or require substantial effort by the ISO to review or verify this input for some resources. As also noted at the MSC meeting, this approach is highly simplified in that it only takes into account the time period that hydro energy can be stored and does not take into account the amount of energy available over this time period. Given these issues, DMM recommends that the ISO provide additional guidelines or details of how the ISO envisions reviewing and approving requests under this new DEB. DMM also notes that the proposed approach is very similar to approaches that have been agreed upon and are currently in use under the negotiated default energy bid option already in the ISO tariff.

3. Reference level adjustment process

Updating gas prices for real time bid caps

The ISO's recent Commitment Costs and Default Energy Bid Enhancements (CCDEBE) policy initiative will establish a reference level adjustment process in which suppliers will be able to request a before-the-market adjustment to a resource's reference level for start-up cost, minimum load cost, or default energy bids. The final CCDEBE proposal approved by the ISO Board set this reasonableness threshold at 10% most days and 25% on the first gas trading day of each week.

In the CCDEBE initiative, DMM recommended that “same-day gas market trade information available each morning be used to set reasonableness thresholds.” DMM also recommended that “for units outside of these major gas areas, the ISO could use less accurate thresholds such as the static thresholds proposed by the ISO or utilize more manual processes or other gas information ... DMM encourages the ISO to develop processes to accommodate more dynamic changes to reasonableness thresholds for EIM resources on the limited number of days when significant increases in gas prices occur.”⁶

The ISO’s straw proposal in this initiative appears to adopt this recommendation. The ISO now proposes “to provide for manual review of market participant requests to adjust reference levels used for the CAISO’s real-time market.” The ISO will “manually review these requests and may approve adjustments for individual resources or adjust its automated screening criteria for all resources in a gas region, as appropriate.” The ISO will review requested adjustment based on “cost documentation submitted by the supplier, and also review related information such as same-day gas trading information occurring on the Intercontinental Exchange (ICE) trading platform or other suppliers’ requests.” As explained in the straw proposal:

If it appears these costs [submitted by one generator] are likely applicable to other resources in a gas region, the CAISO will adjust the resource’s reasonableness threshold for other resources in the same gas region. This reasonableness threshold establishes an amount the CAISO will automatically verify a resource’s reference level adjustment. This would be the case if the CAISO were to receive numerous adjustment level requests from several resources from the same region and/or the adjustment request is consistent with same-day trading information the CAISO observes on ICE.

DMM’s analysis indicates that there is sufficient same day gas market information and liquidity to update reasonableness thresholds used in the real-time market for all resources served by California’s major gas trading hubs.⁷ These hubs cover most of the resources that are in transmission constrained areas and are therefore subject to mitigation in the ISO/EIM footprint. The manual process described in the Straw Proposal seems to be consistent with DMM’s recommendation that “for units outside of these major gas areas, the ISO could use less accurate thresholds such as the static thresholds proposed by the ISO or utilize more manual processes or other gas information.”⁸

As noted in DMM’s prior CCDEBE comments, in practice ,adjustments to reasonableness thresholds should only be necessary on the limited number of days when gas in the same day market is actually trading at prices in excess of levels covered by the 25 percent and 10 percent headroom scalars already included in bid caps.

⁶Memorandum to ISO Board of Governors, Re: Department of Market Monitoring Comments on CCDEBE, March 14, 2018, p. 8. http://www.caiso.com/Documents/Decision_CCDEBEProposal-Department_MarketMonitoringMemo-Mar2018.pdf

⁷ DMM Board Memo Re: CCDEBE, Attachment A, pp. 10-14.

⁸ DMM Board Memo Re: CCDEBE, p. 8.

Adjustments for EIM use-limited resources

The straw proposal also includes a “new proposed process to provide for reference level adjustments for resources using the EIM use-limited default energy bid option ... This process would allow EIM participants to request adjustments to a default energy bid in the event bilateral electricity prices increase relative to the day-ahead trading hub index used in the default-energy bid formula.”⁹

As discussed at the September 28 MSC meeting, this option should be limited to resources with daily use limits for that operating day which create an opportunity cost greater than the resource’s default energy bid under the new option being proposed for use-limited EIM resources. As also noted at the MSC meeting, in this scenario the opportunity cost for such resources would be a function of the hours of energy available that day and the expected prices for the hours of that day.

Given these issues, DMM recommends that the CAISO provide additional guidelines or details of how the ISO envisions reviewing and approving requests under this new process.

⁹ Straw Proposal, pp. 29-30