Comments on EIM Resource Sufficiency Evaluation Enhancements Draft Final Proposal

Department of Market Monitoring

October 22, 2021

Summary

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *EIM Resource Sufficiency Evaluation Enhancements Draft Final Proposal*.[1]

DMM supports the draft final proposal that will significantly improve the energy imbalance market (EIM) resource sufficiency tests in the first phase of this initiative. The changes proposed in the first phase – along with the issues already identified and fixed by the ISO – will significantly improve the EIM resource sufficiency evaluations and will more accurately reflect the capacity made available to the Western EIM.

The second phase will allow for discussion of further potential changes and improvements. In particular, the ISO should more carefully consider the uncertainty requirements used in the sufficiency tests. The uncertainty used in the resource sufficiency tests is the same measure of uncertainty that the ISO's real-time market dispatches have been designed to cover through the real-time flexible ramping product. However, the ISO's persistent use of load biasing in the HASP and RTPD markets demonstrates that this measure of uncertainty may not be an adequate representation of the load and resource uncertainty that CAISO balancing area operators need for the resource fleet to cover. Therefore, DMM believes the tests' goal of discouraging balancing areas from leaning on others for capacity may be better accomplished by carefully considering how to measure the capacity that each balancing area needs in excess of its load forecast to cover uncertainty and how to include those capacity needs in the tests in a transparent manner.

DMM looks forward to providing ongoing reporting and data analysis on the EIM tests before and after changes are adopted through this stakeholder process. DMM has developed numerous metrics and has also begun to develop additional metrics and analysis aimed at helping to assess the potential impact and implications of the proposed changes.[2] Additionally, DMM would appreciate additional suggestions on data, metrics, and analysis that EIM entities

[1] *EIM Resource Sufficiency Evaluation Enhancements Draft Final Proposal*, California ISO, October 6, 2021: http://www.caiso.com/InitiativeDocuments/DraftFinalProposal-EIMResourceSufficiencyEvaluationEnhancements.pdf

[2] The first two monthly EIM resources sufficiency reports are available on DMM's website: http://www.caiso.com/market/Pages/MarketMonitoring/MarketMonitoringReportsPresentations/Default.aspx#evaluation

would find helpful.[3] DMM requests that any participating balancing areas or market participants with concerns about the publication of data related to the tests share those concerns with the ISO and DMM through the stakeholder process.

Comments

The first phase changes will improve the EIM resource sufficiency evaluations.

The changes proposed in the first phase – along with the issues already identified and fixed by the ISO – will allow the bid-range capacity test to make a much more nuanced and accurate assessment of the amount of capacity that has been made available in each balancing area for the Western EIM optimization to utilize. The next four paragraphs explain this point.

Rather than have the capacity test only consider a resource's bid range as reflected in the final bids submitted for the hour being evaluated, the ISO proposes to have the test consider several sets of bids submitted by a given resource for the hour being evaluated. DMM's understanding is that the tests will consider the bids submitted by the final deadline for the hour being evaluated, as well as the bids for the hour being evaluated that had been submitted by previous hours' deadlines.

Rather than assuming that a resource's full submitted bid range at the final bid submission deadline has been made available for the EIM optimization to utilize, the proposed modifications will allow the capacity test to consider how bids interact with the market software and intertemporal constraints. The tests will be designed to assess the quantity of capacity that has actually been made available for the EIM optimization to utilize. This is more nuanced and accurate than the existing test. It is also more nuanced and accurate than the approach suggested by some stakeholders – to only count the subset of capacity that the EIM optimization chose to commit out of the capacity that suppliers made available. DMM agrees with the ISO that the set of capacity the ISO proposes to count towards meeting the tests – capacity that suppliers made available to EIM to utilize – is the theoretically correct capacity set to count.

For example, consider capacity that the real-time market could have committed for the hour being evaluated but which the optimization did not commit for economic reasons. This capacity was made available to cover the capacity needs of its balancing area and the broader EIM. However, in considering all offers across the EIM footprint, the market optimization decided it was more efficient to rely on less expensive capacity, potentially from a different EIM balancing area, to meet the reliability needs for the hour being evaluated. This uncommitted capacity was made available for the EIM optimization to utilize to meet the specific balancing area's and the broader Western EIM's capacity needs for the hour being evaluated. The fact that the optimization did not commit it for the hour being evaluated is a reflection of the

[3] Please submit comments within the stakeholder process. If unable to do so, please submit comments to DMM directly via email to dmm@caiso.com.

Western EIM optimization using the range of capacity made available across the EIM to enhance the efficiency of the commitment and dispatch for its member balancing areas. DMM agrees with the ISO that not counting this capacity towards meeting the capacity test requirement would result in EIM balancing areas making suboptimal commitment decisions in order to pass the test. This could significantly decrease the efficiency benefits created by the Western EIM considering capacity made available throughout the broad Western EIM footprint over the real-time market horizon.

Next, consider capacity bid into the real-time market that the real-time market could not have committed for the hour being evaluated because its startup plus minimum run time exceeds the real-time market time horizon of 270 minutes. In order for this capacity to be available for the EIM optimization to utilize, it needed to have been committed by the balancing area's processes prior to the real-time market's 270 minute horizon. Therefore, DMM agrees with the ISO that this capacity should only be counted towards meeting the test if it has been committed through these pre-real-time market processes in time to be available for the hour being evaluated.

DMM appreciates that the ISO has included more details in the draft final proposal on how the tests will count capacity given various resource intertemporal constraints and advisory market runs. Some statements in the proposal imply the ISO intends for the tests to consider capacity with less than 270 minute start-up and minimum run time that has bids submitted for the hour being evaluated, even if the bids for the hour being evaluated had not been submitted in time to be considered by the STUC run at T-270 minutes. DMM asks that the ISO clarify that the tests will consider bids for the hour being evaluated that may have been submitted by shorter start units only at T-75, or only at T-75 and T-135, but not at earlier bid submission deadlines.

The other main elements of the ISO's proposal seem reasonable. These include accounting for demand response in the tests; treating BAAs that declare capacity shortages as being short of capacity; and counting interchange schedules using the available e-tag data. DMM therefore supports the ISO's proposed changes for the first phase of this initiative.

The ISO should consider potential changes to the tests' uncertainty requirements in the initiative's second phase.

The uncertainty component used in the capacity and flexible ramping sufficiency tests is currently pulled from the fifteen-minute market flexible ramping product uncertainty calculations. These uncertainty requirements do not appear to account for the actual amount of uncertainty that the CAISO and EIM balancing areas face and need to procure capacity to meet.

The uncertainty used in the fifteen-minute market flexible ramping product and the sufficiency tests is calculated from the error between binding 5-minute market net load (each T-7.5) and advisory 15-minute minute market net load (each T-37.5). However, this short-term uncertainty

is less than the actual uncertainty that needs to be covered by the capacity suppliers made available to the EIM.

This can be observed for the CAISO balancing area by the significant amount of out of market actions taken by CAISO operators to cover uncertainty over the net load peak. These actions include persistent large load biasing over the peak net load hours in the HASP and RTPD markets and manual dispatch of slow ramping capacity in the peak summer months. Operators take these out of market actions despite the flexible ramping product already being designed to dispatch and commit resources to cover the same short-term uncertainty used in the resource sufficiency tests.[4]

DMM does not believe the uncertainty component currently used in the resource sufficiency tests accounts for the actual amount of uncertainty that the CAISO balancing area needs to procure capacity for. The shortcomings in the uncertainty requirement for the CAISO balancing area are made particularly visible by large and persistent operator load biasing. It is also likely that the uncertainty used in the tests does not cover the actual uncertainty that other EIM balancing areas may account for with reserves or other non-participating EIM capacity or other non-transparent manual actions.

These out of market actions and capacity may be for uncertainties over various periods, some of which may not be appropriate to consider in the resource sufficiency tests. Some out of market actions may in part be for issues other than uncertainty, such as biasing load down to account for non-participating resources ramping up or coming online or biasing the load up in RTPD in order to better align the HASP and RTPD load and prices. Therefore, incorporating out-of-market actions, such as load bias, directly into the sufficiency tests warrants careful consideration in order to avoid potential problematic unintended consequences.

DMM appreciates that the ISO has committed to considering how load bias should be incorporated into the tests in the second phase of this initiative. However, we recommend that this aspect of the initiative incorporate a broader assessment and much more careful consideration of how uncertainty should be considered in the tests for all EIM balancing areas.

Calculating the capacity test based on total capacity levels rather than capacity incremental to base schedules could increase clarity and accuracy.

Some stakeholders have previously pointed out that calculating the capacity in the bid range capacity test as the capacity that is incremental to base schedules is less clear than simply assessing the total level of capacity that each EIM entity makes available. DMM agrees and

[4] See *Enhancing the flexible ramping product to better address net load uncertainty*, Department of Marketing Monitoring presentation at Western EIM Body of State Regulators Webinar, June 12, 2020: http://www.caiso.com/Documents/Presentation-Real-TimeFlexRampProductEnhancements-WesternEIMBodyofStateRegulators-June122020.pdf

recommends that the ISO alter the bid range capacity test to simply compare each EIM area's total non-participating schedules and participating schedules and capacity to the area's load forecast. This would make the capacity test clearer and could also help to eliminate some issues and complications that arise when trying to count available capacity as the capacity that is incremental to base schedules.[5]

The ISO and stakeholders should reassess the need for applying the balancing test to any EIM balancing area in the initiative's second phase.

DMM recommends that the ISO and stakeholders reassess whether or not the balancing test and over- and under-scheduling penalties are appropriate elements of the resource sufficiency test framework.[6] The ISO suggested the balancing test could mitigate base schedules overloading transmission constraints across BAAs, and mitigate over declaring demand response dispatch in the sufficiency tests. If these are the only two uses of the balancing test, then more targeted measures could be preferable.

[5] *DMM comments on EIM Resource Sufficiency Evaluation Enhancements Straw Proposal*, September 8, 2021, p.2: http://www.caiso.com/Documents/DMM-Comments-on-EIM-Resource-Sufficiency-Evaluation-Enhancements-Issue-Paper-Sep-8-2021.pdf

[6] Ibid., pp. 1-2.