WEIM Resource Sufficiency Evaluation Enhancements
Phase 2 Revised Draft Final Proposal

Department of Market Monitoring

September 16, 2022

Comments

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *WEIM Resource Sufficiency Evaluation Enhancements Phase 2 Revised Draft final Proposal*.[1]

Use of uncertainty in the resource sufficiency evaluation tests

The resource sufficiency evaluation (RSE) was adopted at the beginning of the western energy imbalance market (WEIM) as an incentive for balancing areas to make sufficient capacity available to meet their loads and to deter "leaning" on other balancing areas to meet reliability needs – while still allowing economic transfers between areas. Including an adder for uncertainty about load and resource availability in the evaluation requirements would make each balancing area's total requirement greater than each area's expected net load. While incorporating some level of uncertainty into the test is reasonable, there is not an objectively correct answer to what this uncertainty adder should be.

On the one hand, increasing the test requirements by adding uncertainty adders will create more incentives for WEIM areas to procure more capacity in advance of the real-time market and will reduce the potential for "leaning." On the other hand, it would be prohibitively expensive to adopt test requirements designed to ensure that each balancing area can meet its full imbalance requirements 100 percent of the time with just the resources made available to the real-time market in that area.

Therefore, the question of how to set an uncertainty adder used in the resource sufficiency test is a policy question that can only be answered through debate and consensus amongst the balancing areas participating in the WEIM. While DMM is not recommending a specific method or target uncertainty adder level, DMM believes there may be value in considering much simpler and more transparent uncertainty adders.

If there is consensus that each area should have sufficient capacity to meet its net load 97.5% of the time or more, then utilizing a sophisticated and opaque method such as quantile regression to determine each balancing area's capacity requirements each hour may be

[1] *EIM Resource Sufficiency Evaluation Enhancements Phase 2 – Revised Draft Final Proposal*, California ISO, September 6, 2022: http://www.caiso.com/InitiativeDocuments/RevisedDraftFinalProposal-WEIMResourceSufficiencyEvaluationEnhancementsPhase2.pdf

appropriate.[2] However, the 97.5% threshold appears to simply be a relic of the original flexible ramping product design. It does not appear to be based on any reliability standards or analysis. The 97.5% threshold also does not appear to correspond to a requirement designed to ensure each area will meet its reliability needs without relying on leaning on other WEIM areas for capacity. For example, if a balancing area only has sufficient capacity to meet its net load in 97.5% of intervals, that area should expect to rely on reserves or energy assistance to meet its energy needs for more than half an hour each day.[3]

If the 97.5% threshold is not actually a meaningful uncertainty target, stakeholders may want to consider a more straightforward uncertainty adder. This is because the uncertainty adder produced by the quantile regression method is likely to fluctuate significantly interval by interval and could be very difficult for balancing areas to reproduce or predict in advance. A simpler adder, such as a fixed percentage of each interval's net load, could result in much more transparent and easily predictable RSE test requirements, as well as significantly smoother transitions between RSE test requirements throughout the day. A simple percentage of load adder, such as a planning reserve margin, has a long history of being successfully utilized in the electricity industry for setting standards for forward procurement of capacity to meet uncertainty needs. It could be worth considering for the WEIM (and EDAM) as well.

Treatment of low priority exports in resource sufficiency evaluations

The ISO proposes to count low priority (LPT) exports that clear the RUC process in the CAISO balancing area's RSE requirements. The ISO proposes to not count other LPT exports in the CAISO balancing area's RSE requirements. This proposal seems reasonable. The CAISO BAA can ultimately cut any LPT exports that receive HASP schedules in order to maintain reliability, so DMM would not be against a proposal that counted no LPT exports in the CAISO BAA'S RSE requirements. However, the CAISO balancing area can use upward load bias in RUC to limit the exports that receive RUC awards to only those exports that the CAISO BAA expects to be able to support in real-time. Therefore, counting LPT exports that clear the RUC process in the CAISO BAA's RSE requirements seems to be a reasonable compromise for addressing this issue.

The proposal to <u>not</u> count real-time LPT exports in the CAISO BAA RSE requirements seems reasonable <u>only if</u> the CAISO balancing area will actually cut low priority exports that received HASP awards before cutting CAISO native load. The tariff clearly gives CAISO the authority to cut low priority exports with HASP awards before native load. The tariff revisions effectuating

[2] While a quantile regression is an appropriate way to estimate uncertainty in principle, the effectiveness of the approach as implemented is still not known. Given the complexity of the quantile regression, it is also difficult for participating balancing areas to recreate the requirements.

[3] 2.5% of 24 hours in a day is 0.6 hours per day.

the market enhancements for summer 2021 policy pertaining to export and load prioritization also clearly indicates that all real-time markets, including post-HASP markets such as RTPD and RTD, will prioritize load over low priority exports with HASP awards.[4]

However, it is not clear how the ISO will implement these prioritizations in the market software and in its operating procedures. The business practice manual for market operations includes an extra penalty price for tagged exports that give exports that have cleared HASP and been tagged a higher priority than native load in the post-HASP real-time market runs.[5] CAISO's operating procedure 4420 on system emergency actions describes arming available firm load to count toward the CAISO BA's contingency reserve requirements in emergency situations. DMM has not found evidence in these documents that CAISO operators would arm low priority exports to cut before native load during emergencies.

DMM appreciates that the ISO now proposes to have RTPD advisory intervals return a list of low priority exports for operators to cut before CAISO balancing area native load in emergencies. DMM's reading of the tariff indicates that this should already be the CAISO balancing area and market optimization's current practice. DMM therefore requests that CAISO clarify how the balancing area will effectuate in practice cutting low priority exports before native load as part of its current proposal for reducing the extent to which low priority exports out of CAISO get counted in the RSE tests

The ISO also proposes to allow non-CAISO balancing area to count all imports supported by HASP exports out of the CAISO as supply in their RSE tests. This proposal does not fully align with the proposal to not count LPT exports without RUC awards in the CAISO BAA's RSE requirement. DMM understands that LPT exports that receive HASP awards, but which did not clear the RUC process, will still flow in almost all situations. However, a crucial justification for not counting these exports in the CAISO BAA's RSE requirement is the fact that in an emergency, the CAISO BAA can and will cut these exports before its native load. Therefore, the ISO and stakeholders should consider some sort of trigger for not counting imports supported by LPT exports out of CAISO that did not receive RUC awards as supply in the importing WEIM BAA's RSE tests. Potential triggers could include a CAISO BAA Flex Alert or CAISO being in an EEA level.

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[4] See California ISO, FERC Docket No. ER21-1790, *Compliance Filing – Market Enhancements for Summer 2021, Load, Export, and Wheeling Through Priorities,* July 26, 2021, pp. 2-6; and Tariff section 34.12.1 – Increasing supply: http://www.caiso.com/Documents/Jul26-2021-ComplianceFiling-LoadExportWheeling-ER21-1790.pdf

[5] BPM for Market Operations v82_clean, p. 251.

Energy assistance through WEIM appears workable and reasonable if there is stakeholder consensus for changing the consequences of RSE test failure

Freezing transfers into a balancing area that is short on capacity and taking emergency action could be detrimental to western reliability when other balancing areas have excess capacity to trade. Therefore, DMM continues to support the ISO and stakeholders allowing emergency assistance transfers to balancing areas that fail the RSE but elect to participate in the proposed emergency assistance program.

The resource sufficiency evaluation was adopted at the beginning of the energy imbalance market as an incentive for balancing areas to make sufficient capacity available to meet their loads and to deter "leaning" on other areas to meet reliability needs – while still allowing economic transfers between areas. Changes to the failure consequences ultimately involve important policy decisions about the trade-off between these two goals, and should be decided through debate and consensus amongst the balancing areas participating in the WEIM.

DMM believes the framework of the ISO's WEIM energy assistance proposal appears to be a workable design that strikes a reasonable balance between allowing areas with excess capacity to provide it to areas in need of assistance—while creating disincentives for an area to lean on others for capacity.

A critical element of this design is the effectiveness of the existing constraint to prevent WEIM transfers out of a balancing area if that would entail the exporting area violating its power balance constraint or utilizing available balancing capacity. DMM supports robust protections to prevent WEIM areas from providing energy assistance that may risk the export transfer area's own reliability. If the overall WEIM is short on energy, the areas that are short on capacity should not be able to receive transfers that could jeopardize the reliability of areas that had sufficient capacity. Furthermore, a design that ensures that any overall WEIM energy shortfall is borne by areas that fail the RSE tests is critical for incentivizing each balancing area to procure sufficient capacity ahead of the WEIM resource sufficiency test time frame.

The ISO is not proposing to change the consequences for failing the RSE for areas not electing to participate in the emergency assistance program. For these areas, the WEIM will continue to freeze transfers at the higher of the previous interval's transfers and base transfers. For areas electing to participate in the emergency assistance program, the WEIM will consider all transfers above the base transfers as emergency assistance transfers.

An important aspect of this new feature is that the entire congestion rent associated with the transfer will be treated as assistance energy revenue. Therefore, all of the congestion rent associated with the entire transfer will be allocated to WEIM balancing areas providing net export transfers, which support the area that failed the RSE. None of the congestion rent will be allocated to the BAA that failed the RSE. This is important because if the congestion rent for any of the transfers were allocated to the BAA that failed the RSE, it would reduce incentives

for that BAA to not rely on the WEIM and emergency transfers to meet resource sufficiency needs. Therefore, DMM supports the CAISO's approach of treating all transfers into the area failing the RSE as emergency transfer energy if they elect to use the program.

Stakeholders may want to consider adding a form of capacity payment for WEIM energy assistance.

The CAISO proposes allowing emergency assistance transfers at the penalty price for power constraint relaxation. To further incentivize balancing areas to procure capacity before the WEIM RSE tests, some form of capacity payment might be appropriate as part of the WEIM energy assistance settlement. For example, WEIM could charge an area the capacity procurement mechanism (CPM) soft offer cap price per kilowatt-month for the maximum assistance megawatts a balancing area uses over a month. This could be in addition to the penalty price per MWh of emergency energy delivered. Another option could be settling the higher of the monthly capacity price or the monthly assistance megawatt hours times the penalty.

DMM will report needed information on the use of WEIM energy assistance.

DMM will report on WEIM energy assistance performance if implemented. As outlined in the workshop, this reporting would include balancing areas triggering the energy assistance, the transfer values, and the hours and intervals of energy assistance use