

Memorandum

To: ISO Board of Governors

From: Eric Hildebrandt, Executive Director, Market Monitoring

Date: September 13, 2023

Re: Department of Market Monitoring comments on extended day-ahead market ISO balancing authority area participation rules track A1

This memorandum does not require ISO Board of Governors action.

EXECUTIVE SUMMARY

This memo provides comments by the Department of Market Monitoring (DMM) on Management's extended day-ahead market ISO balancing authority area participation rules track A1 final proposal. DMM continues to support the extended day-ahead market (EDAM) proposal to allow each balancing authority area to utilize a net export constraint to set hourly limits on net exports of EDAM energy, imbalance reserve up and reliability capacity up. Under the EDAM market design, each balancing area needs a mechanism to help ensure EDAM transfers do not cause it to take responsibility for load curtailment caused by another balancing area with a capacity shortfall during tight system conditions. DMM supports the ISO balancing area's proposed guidelines for determining the net export constraint limits. The proposal should allow balancing area operators the appropriate discretion over determining net export constraint limits each hour. DMM also supports the ISO's track A1 interim proposal for allocating EDAM resource sufficiency evaluation failure surcharges. The proposal seems reasonable as an interim measure for supporting EDAM's initial implementation, but DMM supports the ISO's commitment to pursuing design changes that better reflect cost causation principles during track B of this initiative.

Background

This initiative focuses on market rules for only the ISO balancing area's participation in the extended day-ahead market (EDAM). However, DMM has attempted to make our recommendations apply generally to any potential EDAM balancing area. We hope aspects of these comments may be useful to stakeholders in other balancing areas as they redesign their own tariffs to facilitate EDAM participation.

Setting the net export transfer constraint

DMM continues to support the EDAM proposal to allow each balancing authority area to utilize a net export constraint to determine hourly limits on net exports of EDAM energy,

imbalance reserve up (IRU) and reliability capacity up (RCU). Under the EDAM design, each balancing area needs a mechanism to help ensure EDAM transfers do not cause it to take responsibility for load curtailment caused by another balancing area with a capacity shortfall during tight system conditions.

The EDAM should continue to increase coordination and collaboration between Western balancing areas. However, the ISO did not ultimately propose that all EDAM balancing areas share load curtailment if there is a collective supply shortfall. Instead, if there is a collective supply deficiency in real-time, the real-time optimization will identify EDAM balancing areas that do not have sufficient supply to meet their real-time load, export and EDAM transfer obligations.

As a result, if one or more balancing areas do not bring sufficient capacity to the EDAM in tight system conditions, EDAM transfers can shift responsibility for potential load curtailment from balancing areas that have insufficient capacity in the day-ahead time frame to balancing areas that had sufficient capacity in the day-ahead time frame. One way this shift of responsibility can occur is when greater net load uncertainty materializes than the imbalance reserve up product is designed to procure.¹ In addition, if an EDAM area allows convergence bidding, virtual supply can also cause the balancing area to assume responsibility for real-time load curtailment, even if the area provided sufficient capacity to cover its obligations in EDAM.²

Therefore, under this market design each EDAM balancing area needs a mechanism to help ensure EDAM transfers do not cause that area to take responsibility for load curtailment caused by another balancing area with a capacity shortfall during tight system conditions. The net export constraint is intended to provide this critical function in the EDAM design.

EDAM balancing areas that do not have day-ahead must offer obligations, and that do not allow virtual bidding, could potentially defend against this outcome by withholding capacity in excess of their EDAM resource sufficiency evaluation requirements. However, even for these balancing areas, utilizing a net export constraint would be more efficient because it would allow the balancing area to bid its excess capacity into EDAM. This would allow this additional capacity to be efficiently re-dispatched within its own balancing area through the EDAM optimization and to be shared with other balancing areas for the benefit of all.

For a balancing area that allows convergence bidding and/or has day-ahead must offer obligations in excess of its EDAM resource sufficiency evaluation requirements, the net export constraint could be critical for ensuring its reliability in situations when other

¹ *Comments on Extended Day-Ahead Market Straw Proposal*, Department of Market Monitoring, June 17, 2022, pp. 4-6: <http://www.caiso.com/Documents/DMM-Comments-Extended-Day-Ahead-Market-Straw-Proposal-June-17-2022.pdf>

² *Comments on Extended Day-Ahead Market Draft Final Proposal*, Department of Market Monitoring, November 22, 2022, pp. 5-7: <http://www.caiso.com/Documents/DMM-Comments-Extended-Day-Ahead-Market-Draft-Final-Proposal-2022-11-22docx.pdf>

EDAM balancing areas' capacity shortfalls could cause the EDAM footprint to have insufficient supply in real-time.

The net export constraint will not be able to serve this critical function in the EDAM design if a balancing area has not obtained authority under its open access transmission tariff (OATT) to properly utilize the constraint in tight system conditions. Therefore, it is important that each balancing area develop and test procedures for implementing its own net export constraint prior to EDAM participation. For the constraint to be effective in preventing shifting of responsibility for load curtailment from another balancing area, these procedures must allow sufficient flexibility to cover the dynamic nature of a balancing area's load and resource uncertainty, which can fluctuate based on the specific mix of resources a balancing area is relying on for a particular day.

The formulation of the net export constraint contains two components that a balancing area's operators can adjust to increase or decrease the amount of transfers that EDAM can schedule out of the balancing area in the day-ahead market. The first is the *confidence factor*. A lower confidence factor reduces the amount of transfers that EDAM could schedule out of the balancing area. It is intended to represent uncertainty in the availability of resources that bid into the day-ahead market and which could support EDAM transfers out, but which have not been counted towards meeting the balancing area's EDAM resource sufficiency requirement. The ISO proposes to set the initial confidence factor at its lowest possible setting of 0 percent. This setting in effect allows no supply that did not count towards meeting the EDAM resource sufficiency evaluation requirement to support EDAM transfers out of the area. While this may be overly conservative in non-stressed system conditions, it simplifies the operators' job in setting the net export constraint each hour to only determining an appropriate level for the reliability margin, discussed below. Therefore, this seems to be a reasonable initial setting at the start of EDAM.

The second component of the net export constraint that operators can use to limit the quantity of EDAM transfers out of the balancing area is the *reliability margin*. The reliability margin is intended to represent all other uncertainty in the demand and supply that determine the EDAM resource sufficiency evaluation requirement and the capacity that can meet that requirement. Each balancing area's operators ultimately have the responsibility for ensuring EDAM transfers out do not jeopardize their area's reliability. Therefore, DMM has recommended that each balancing area's operators have final discretion each day and hour to set the reliability margin portion of the net export constraint using the operator's judgment and good utility practice.

The ISO's proposal lists two criteria for setting the reliability margin in stressed hours: (1) replacement reserves for the most severe single contingency; and (2) protection for non-credible contingency from weather events. These items seem reasonable as guidelines to help the operator determine the reliability margin. However, DMM appreciates that the ISO has clarified that these criteria will only be guidelines for the

operators. DMM supports the proposal to allow ISO balancing area system operators to use their discretion to set the reliability margin above the maximum of these three criteria during stressed hours.

In non-stressed system conditions, the likelihood of EDAM transfers out of a balancing area resulting in a load shed event should be low. Placing less restrictions on EDAM transfers in these conditions should increase EDAM benefits for both the source and sink balancing areas of EDAM transfers. Therefore, the proposal to not set a pre-determined minimum level for the reliability margin in non-stressed conditions seems reasonable. DMM supports allowing the balancing area operators to use their discretion to determine the reliability margin.

DMM recognizes that the use of a net export constraint can reduce the potential efficiency benefits of an extended day-ahead market relative to not using a net export constraint. However, other fundamental elements of the EDAM design have made this constraint the critical tool for balancing areas to ensure EDAM transfers do not shift responsibility for load curtailment from another balancing area when they have brought sufficient capacity to EDAM.

DMM continues to believe the ideal EDAM design would involve a stringent day-ahead resource requirement sufficient for meeting all participating EDAM balancing areas' reliability thresholds. This would then allow mutually agreed upon sharing of any supply shortfalls that ultimately materialize in real-time.³ DMM understands that it would have been extremely difficult for diverse balancing areas to agree upon a uniform set of day-ahead reliability standards for this initial phase of EDAM implementation.

DMM continues to recommend that the ISO and participating EDAM balancing areas work towards this goal in upcoming initiatives to enhance the EDAM design. In the meantime, some loss of potential EDAM efficiency due to the use of the net export constraint in tight system conditions is an unfortunate, but necessary, cost for the implementation of this initial design.

Allocation of extended day-ahead market resource sufficiency evaluation failure costs

DMM supports the ISO's track A1 interim EDAM resource sufficiency evaluation failure surcharge allocation proposal as an interim measure. The ISO has explained that a policy to better align the surcharge allocation with the entities causing an EDAM resource sufficiency evaluation failure could not be implemented by the start of EDAM. Therefore, the proposal to allocate the surcharge costs and revenues each hour based on each scheduling coordinator's share of the balancing area's metered demand, seems to be a reasonable interim approach to facilitate EDAM's initial implementation.

To the extent possible, balancing areas should allocate EDAM resource sufficiency evaluation failure costs to those who can act to avoid or cause the costs. The failure

³ DMM's 6-17-2022 comments on EDAM Straw Proposal, pp. 1-3.

costs should be allocated to resources contracted to provide capacity that do not bid into the EDAM. This is because they contribute to the failure by not making the capacity available to the EDAM. Similarly, if the amount of contracted capacity is less than needed to pass the EDAM resource sufficiency evaluation, the load serving entities responsible for contracting to provide sufficient capacity should pay the failure costs.

It follows that EDAM resource sufficiency evaluation failure costs should be allocated to contracted resources not bidding into the EDAM first, with the remainder allocated to the load serving entities contracting capacity to meet resource sufficiency evaluation requirements. For example, if a balancing area is short by 100 MW, and 70 MW of contracted capacity did not bid into EDAM, then total procurement was 30 MW short. The load serving entities contracting to meet resource sufficiency evaluation requirements should be allocated costs based on their 30 MW of under-procurement. The contracted resources that did not bid into the EDAM should be allocated costs based on their 70 MW of unavailable contracted capacity.

This cost allocation framework appears similar to an option the ISO has discussed considering in track B. DMM recommends that each EDAM balancing area work towards developing and implementing this form of two-tiered cost allocation policy that first assigns costs to unavailable contracted supply. In track B of this initiative, DMM looks forward to working with the ISO and stakeholders on developing the details of EDAM resource sufficiency evaluation failure surcharge allocation policy that better assigns the cost to entities causing those costs.