

Comments on Energy Imbalance Market Year 1 Enhancements Issue Paper and Straw Proposal

**Department of Market Monitoring
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I. Summary

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the Energy Imbalance Market Year 1 Enhancements Issue Paper and Straw Proposal. DMM is generally supportive of the proposed EIM year 1 enhancements. However, we note that there are areas in which further detail and clarification are needed to make full and accurate assessments. We offer below comments on some of the proposed enhancements, as well as additional enhancements that we believe will improve market efficiency and reduce price volatility. DMM looks forward to working with the ISO to further develop the EIM Year 1 Enhancements.

II. Removing Discretion of EIM Entity to Determine External Intertie Bidding Rules

The current implementation of EIM allows full discretion by the EIM entity on whether or not to allow 15-minute real-time economic bidding on external interties. While the CAISO market allows full economic participation on interties, PacifiCorp has elected to not allow 15-minute bidding on external interties. DMM supports the removal of this discretion by EIM entities to block real-time economic bidding on external interties. DMM suggests that the ISO pursue mandatory 15-minute economic participation on external interties of EIM BAAs.

DMM's support of mandatory real-time economic intertie participation for EIM BAAs stems from the importance of increased competition in EIM. Economic real-time participation on external EIM interties has the potential to significantly increase competition in the EIM area by increasing the number of suppliers. This is especially true in the current EIM implementation where PacifiCorp is the sole provider of real-time participating generation. Mandating real-time economic participation on external EIM interties could facilitate, for example, economic bidding by hydro resources in the Northwest. These resources could be highly competitive with PacifiCorp's participating generation in the PACW BAA, particularly during ramping periods.

III. Settlement of Non-Participating Resources

DMM supports the inclusion of additional resource characteristics for non-participating resources for use in settlements as well as in the FMM market optimization. The issue paper and straw proposal notes that:

The current implementation treats FMM schedules as block schedules. Block schedules do not reflect the operational characteristics of the non-participating resource, such as the resource's ramp rate.

The issue paper and straw proposal identifies the importance of this issue in the context of uninstructed imbalance energy (UIE) calculation and how it affects the allocation of bid cost recovery uplift and real-time imbalance energy offset (RTIEO) between BAAs. We address later in this document the issue of allocating uplift across BAAs in this manner. However, to the extent that UIE is used in the determination of uplift allocation between BAAs, DMM supports the inclusion of additional resource characteristics for non-participating resources for consistent calculation of UIE across BAAs.

Beyond the issue of UIE calculation consistency across BAAs, DMM also supports the inclusion of additional resource characteristics for non-participating resources to improve the market optimization process and more accurately reflect system conditions in the EIM area. When granularity of the FMM base schedule differs from the granularity of the ISO demand forecast to which the market optimization is solved, the market may perceive a system shortage if the ramp rate and actual trajectory of non-participating resources is not adequately accounted for in the optimization.

It is DMM's understanding that the market optimization will consistently dispatch non-participating resources toward submitted base schedule, taking in to consideration actual output and registered ramp rate, and allowing for a 20-minute inter-hour ramp. While this approach is not unique to EIM, potential market implications are magnified in EIM where the ramping capability of non-participating resources is more likely to be required to achieve a feasible market solution. In the case of ISO real-time self-schedules, potential market impacts are mitigated due to a significantly higher amount of participating economic capacity in the real-time market.

Consider the following example for FMM in one hour during a ramping period:

Quantity (MW)	Interval 1	Interval 2	Interval 3	Interval 4
15-min demand forecast	1,000	1,300	1,500	1,600
15-min generation capacity (participating resources)	200	225	250	275
15-min generation capacity (non-participating resources; base schedule)	1,212.5	1,212.5	1,212.5	1,212.5
15-min generation capacity (non-participating resources; actual capacity)	900	1,175	1,350	1,425
Base schedule of participating resources	0	0	0	0
Total demand perceived by market	1,000	1,300	1,500	1,600
Total available capacity perceived by market	1,412.5	1,437.5	1,462.5	1487.5
Total actual available capacity	1,100	1,400	1,600	1,700

In the situation presented in this simple example, non-participating resources are ramping to meet the ramp in system load. However, the market optimization does not perceive the ramp of these resources. Although we recognize that the dispatch may end up higher than the hourly base schedule, the outcome of a perceived false shortage similar to this example is still possible. This outcome may still occur because the assumed direction of ramp is consistently toward an hourly base schedule or dependent on the next hourly base schedule. The implications of the market optimization perceiving a false shortage are false price spikes that are not representative of actual market conditions.

IV. Establishment of EIM Transfer Limits Using ATC

The issue paper and straw proposal raises the issue of use of available transfer capacity (ATC) to facilitate EIM transfers between BAAs. The issue is presented as one of operational concern, noting that final base schedules are due and financially binding at T-40 but the ATC may not be known until T-20. At this time, it is not clear precisely how transfer constraints would be defined and modeled using ATC.

One example of an area in which DMM is seeking clarity is whether or not the use of ATC to facilitate EIM transfers implies that EIM transfers awarded in the FMM could be supported by non-firm transmission available at T-40. This situation could result in EIM transfers being cut in RTD should firm transmission rights holders tag schedules at T-20 that crowd out the non-firm reservation backing the EIM transfer. To facilitate further evaluation of this potential issue, we recommend the ISO provide information on firm transmission rights ownership for interties on which ATC could be used to facilitate EIM transfers.

To more accurately assess the implications of using ATC to facilitate EIM transfers, DMM requests the ISO to explicitly define EIM transfer constraints as they would be implemented using ATC. As DMM stressed in its public comments on the Energy Imbalance Market Draft Final Proposal,¹ the definition of the EIM transfer constraints has significant implications for the overall efficiency of the market design. Therefore, it is important that the ISO vet the precise definition of these constraints during the stakeholder process. We oppose the approach used during the original EIM market design where the ISO left the definition of this crucial aspect of the market design up to the discretion of the implementation team.

V. 15-Minute Bidding on Intertie Scheduling Points

As noted in the issue paper and straw proposal and first discussed in Section II of this document, the economic participation of FMM import and export schedules varies across BAAs within the EIM footprint. This difference in intertie bidding rules creates opportunities for scheduling coordinators to profit from price differences between the FMM and RTD markets. These opportunities result from differing settlement rules and

¹ Available at: http://www.caiso.com/Documents/DMMComments_EnergyImbalanceMarket-DraftFinalProposal.pdf

the possibility of declined e-tags for market transactions in the market of one BAA (e.g., ISO) perceived as out of market in another BAA (e.g., PACW). DMM proposes that the ISO consider a broad settlement rule that prevents entities from earning profit on differences between FMM and RTD prices over an extended period. Such a rule could be designed to claw back profits accrued in this manner over a designated length of time.

DMM is not proposing the so-called “worse-of” pricing which has been previously suggested by some as a solution to prevent profits from FMM and RTD price differences. The “worse-of” pricing approach could be overly-punitive, particularly in instances such as a schedule cut that is beyond the control of the scheduling coordinator. This instance may occur, for example, when an economic export schedule clears out of the ISO BAA and into an EIM BAA, but the EIM BAA does not approve the e-tag. The scheduling coordinator initially pays the FMM LMP and is then forced to sell back the schedule at the RTD price. When such cuts are beyond the control of the scheduling coordinator, and the scheduling coordinator is not strategically creating such schedules when cuts are likely to occur, profits and losses from FMM and RTD price differences are likely to offset over time. Consistently applying the least favorable price could result in consistent losses for entities not intending to arbitrage FMM and RTD price differences. By establishing a general rule that prevents long term profits from such situations, the incentive to create or exploit arbitrage opportunities is eliminated while avoiding negative impacts when such situations are beyond the control of the scheduling coordinator.

Creating consistent intertie bidding rules across EIM BAAs has great potential to increase competition in the EIM, and this change would also mitigate the existing dependency on manual dispatch to properly reflect out-of-market transactions in the FMM optimization; however, it is not clear that this would eliminate opportunities to profit from FMM and RTD price differences through intertie transactions. This could be better accomplished using a broad settlement rule like that proposed above.

VI. Allocation of Real-Time Imbalance Energy Offset across BAAs

In public comments on the Energy Imbalance Market Draft Final Proposal, DMM expressed support for the adjustment of BAA real-time imbalance energy offset (neutrality) to account for EIM transfers in and out. DMM maintains this position of support; however, in the same comments DMM also expressed concern regarding the further adjustment of real-time energy imbalance offset based upon 5-minute proportional transfers between BAAs.

In addition to the issues raised on this allocation in the draft final proposal comments, DMM now has additional concerns regarding the allocation of real-time imbalance energy offset across BAAs. These concerns are borne of recent work on this topic which shows that large causes of RTIEO may not actually represent uplift but are offset by credits through separate settlements processes. A key example in the ISO market is RTIEO resulting from transmission loss paybacks—this amount does appear in RTIEO

but is also allocated as a credit to ISO measured demand through a separate settlement process². Thus it is not appropriate to allocate any portion of RTIEO charges resulting from these sources across BAAs without also allocating the associated credits resulting from separate settlements.

We believe that the first adjustment to BAA real-time imbalance energy offset (neutrality) to account for EIM transfers in and out is likely sufficient. DMM seeks further clarification from the ISO on the logic behind any additional allocation. DMM recommends that, as an addition to the EIM Year 1 Enhancements, the ISO reconsider the second allocation of RTIEO across BAAs.

VII. Revision of Applicable EIM Transfer Constraint when Flex Ramp Sufficiency Test Fails

Under the initial EIM implementation, when a BAA failed the flexible ramping sufficiency test at T-40, the transfer constraint for EIM transfers in to the BAA was restricted to block imports above the transfer level from the final FMM interval in the preceding operating hour. While the intent of such a rule is to prevent leaning on a neighboring BAA for ramping capacity, the initial EIM implementation considered a *decrease in exports as increased imports*. Thus, it was possible that a BAA which failed the flexible ramping sufficiency test may have been obligated to freeze an export schedule instead of cutting the export which could increase ramping capacity. By forcing exports when the flexible ramping sufficiency test fails, a BAA was forced to export at a time when system conditions and market prices did not support the export.

DMM identified this anomaly to the ISO shortly after EIM implementation. It appears the ISO has subsequently adjusted the implementation to freeze the import transfer limit at zero, rather than a negative number, when the EIM BAA is both exporting and failing the flexible ramping sufficiency test.

DMM supports appropriately restricting inbound transfers upon failure of the resource sufficiency test. We recommend that the ISO therefore clarify its policy so that the restriction not consider a reduction in exports as increased imports. This would allow the BAA for which the flexible ramping sufficiency test fails to better address the inadequacy while still preventing leaning on a neighboring BAA.

² For additional detail, please see DMM white paper “Review of Real Time Imbalance Energy Offset” at http://www.caiso.com/Documents/Review-Real-TimeImbalanceEnergyOffset-DMMWhitePaper_Revised.pdf