

Western Power Trading Forum Comments on EIM Intertie Participation
Submitted to the Regional Issues Forum Liaisons, the EIM Governing Board and the CAISO Stakeholder
Process

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WPTF is a California nonprofit, public benefit corporation. It is a broad-based membership organization dedicated to enhancing competition in Western electric markets while maintaining the current high level of system reliability. The membership of WPTF includes energy service providers, scheduling coordinators, generators, power marketers, financial institutions, energy consultants, and public utilities, all of which participate actively in the California market and other such markets in the West and across the country.

WPTF has a long history of supporting competitive, liquid markets at the interties and recently protested the CAISO's proposal at FERC to delay the development of economic bidding on the CAISO's Energy Imbalance Market (EIM) interties.¹ This topic is of significant interest to WPTF's members; we provide in-depth comments to both help prepare for the FERC technical conference² and in support of a potential stakeholder initiative process.

Key principles are at stake in this process. How the seams will be designed for the organized Western market requires careful consideration. The CAISO-controlled footprint is expanding – currently through incorporation of EIMs – yet in the balance of the Western markets there will continue to be important bilateral transactions and flows that warrant structures that can ensure efficiency and the overall reliability. The need to address the EIM boundary participation should be seen as the development of a strategy, or model, for how the CAISO-operated markets manages its seams, ensuring to the greatest extent possible Western market efficiency while maintaining reliability. In these comments we offer key design principles relevant to this seam design:

- A. Provide non-discriminatory open access.
- B. Support robust and efficient markets.
- C. Offer comparability when doing so does not undermine market efficiency.
- D. Provide equitable pricing of transmission and means for transmission cost recovery.
- E. Provide flexibility with respect to participation where possible.

¹ [FERC Order ER16-1518](#)

² *Ibid* at 37, 38 “Moreover, WPTF raised concerns about unduly delaying the ability of external resources to participate – concerns that CAISO does not fully address...Further, we find that the concerns related to implementation of intertie bidding raised by WPTF and CAISO merit further discussion regarding impediments and potential solutions to allow economic bidding at the EIM external interties and ways those impediments might be overcome. Accordingly, we direct Commission staff to convene a technical conference to gather additional information regarding the technical challenges CAISO describes related to the implementation of economic bidding at the EIM external interties.”

- F. Provide a design that reasonably supports transactions between CAISO-operated parts of the grid and neighboring Balancing Area Authorities (BAAs).

In section 1, WPTF details these principles further.

In section 2, WPTF provides specific comments on the CAISO's EIM external resource participation principles.³

Section 1: WPTF supports the CAISO allowing participation at the EIM interties through a principled seam design.

As indicated above, WPTF supports allowing participation into the EIM markets via the EIM seams and proposes that several design principles are appropriate in developing the model for how that participation is offered. These principles are detailed further in this section.

- A. Provide non-discriminatory open access. Open, broad access will ensure the maximum efficiency, provide depth in the markets, and ensure the CAISO-administered markets are non-discriminatory. This is a principle key in all FERC-organized markets. If there are not reasons adverse to market efficiency or reliability to do so, access should be allowed any CAISO-operated seam.
- B. Support robust and efficient markets. The EIM intertie design should support as best as possible both the CAISO-administered EIM market and the traditional surrounding bilateral markets outside of the EIM. Marrying, or otherwise managing the differences between, bilateral market and EIM timelines is important to overall West-wise efficiency as is ensuring the markets are competitive or otherwise offer protections.

As an important point of context related to this principle is that the implementation of each EIM has imposed a change in scheduling deadlines for surrounding bilateral parties that has caused a very large disruption in the ability to efficiently conduct transactions within the hour. This resulted from the timelines believed by the CAISO necessary to run the 5-minute EIM markets. Whereas bilateral parties historically have had up until 20 minutes before the operating hour (T-20) to change their schedules at seams between BAAs, now those whose energy flows through an EIM footprint have to fix their schedules at 57-minutes before the hour (T-57) or incur congestion costs for any changes thereafter – costs that cannot be hedged currently without the ability to submit economic bids at the EIM seams.

The EIM scheduling requirement of T-57 is leading to reduction in bilateral market's liquidity and affecting the feasibility of within-the-hour bilateral transactions as EIMs continue to expand. This leads to an overall reduction in the ability for Western entities to manage physical conditions such as unexpected power plant outages, a reduced ability to manage intermittent resources, and a reduced

³ The CAISO staff presented at the August 4, 2016 a discussion of EIM intertie participation based on stakeholder requests. See "External Resource Participation in EIM" presentation by Mark Rothleder, August 4, 2016 (http://www.caiso.com/Documents/Presentation-ExternalResourceParticipationinEIM-EIMRegionalIssuesForum-Aug4_2016.pdf). The presentation is attached to these comments.

ability to optimize flexible hydro resources. While these outcomes may not be seen so directly by the CAISO or EIM entities they certainly are being experienced within the neighboring BAAs.⁴

Further, when exporting out of the CAISO and wheeling through an EIM area, an entity must purchase physical transmission and schedule the power through an EIM Balancing Area to the eventual load point. The CAISO awards schedules from its Fifteen Minute Market (FMM) at 55 minutes before the operating hour (T-55), after the T-57 EIM deadline. This means that participants who have to wheel through an EIM area to deliver their FMM schedule will have their CAISO FMM schedules open to EIM imbalance charges.

In short, whereas the WECC-wide deadline to tag electricity and the CAISO's FMM deadline are T-20, the T-57 deadline of the EIMs does not mesh well with the balance of the markets. Addressing this growing mismatch will require either or both (1) providing a means for transacting parties at the EIM borders to change schedules beyond the current T-57 timeline without undo risk or (2) the ability to bid into the EIMs to hedge the cost of such a schedule change (by expressing a price preference for not having the EIM accept the change) in order to protect against a severe disruption in the bilateral market that could otherwise transpire as the EIM regions spread.

Somewhat separately, yet certainly related, issue relates to competitiveness, or lack thereof, at the EIM ties. A robust market design that supports broad participation should alleviate the potential for/benefit of non-competitive behavior. Similarly, should the CAISO be concerned with possible uncompetitive behavior a thorough assessment of this risk should be undertaken.

- C. Offer comparability when doing so does not undermine market efficiency. Ideally participation at the EIM interties would be comparable with participation at the CAISO's non-EIM interfaces. Comparability ensures there are no market distortions or inappropriate incentives to participate through CAISO seams at the traditional footprint versus CAISO EIM seams.

Comparability, while desirable, cannot be achieved simultaneously in all respects.

Consider the differences in the markets. The bilateral market traditionally has traded only on the hour. The CAISO's FMM and FERC's actions to require transmission owners to implement 15-minute scheduling has started an effort to move within-the-hour transactions to four times per hour (every 15 minutes). Yet internal to the BAAs in the organized markets (CAISO and EIMs), balancing is also done 12 times per hour. The FMM was seen as a compromise to conduct a similar settlement for both internal and external resources; yet it has not worked entirely well given the minimal ability/appeal for participation at the boundary.

Also important to the question of comparability is the EIM bidding design versus the existing Intertie bidding functionality. If an entity has sufficient transmission, they can choose to participate an existing CAISO intertie or at an EIM intertie. The market design should not impose incentives to bid and schedule into the CAISO in a way that does contribute to market efficiency. Said otherwise, all

⁴ For example, if there is a loss of power plant outside of the EIM 30 minutes before the operating hour, it is very difficult for the schedules sourced from those locations to replace the power for delivery to the EIM seam. In the northwest with most entities at the major trading hub "Mid C" having some of their schedules moving through an EIM, trader partners are reluctant to change their schedules within 57 minutes of the hour. With counterparties like Portland General Electric and Puget Sound Energy moving into EIMs the trading partners available to offer short term replacement energy will decrease more and more.

else equal, a western transacting party should have equal incentives to use any of the CAISO-operated seams intertie points and not for example find EIM seams to present a much higher commercial burden than do CAISO intertie points. Lastly, and addressed in more detail next, comparability in transmission rate application is an important consideration. (That is, do offers into the EIMs that are struck receive a transmission charge but offers into the CAISO at its interties not?)

Comparability is important, and how comparability can best be achieved is a key question that will need to be grappled with, addressing in particular whether it is more appropriate to make EIM intertie bidding comparable with EIM internal participation, to make it more comparable with CAISO intertie bidding, or to make it yet more comparable with bilateral transactions.

- D. Provide equitable pricing of transmission and means for transmission cost recovery. A well-designed EIM participation mechanism will ensure that there are reasonable cost recovery mechanisms for PTOs' transmission costs yet that transmission usage does not create a disproportionate burden for users either within or outside of the EIM.

Given the reciprocity transmission agreement currently in place for the EIM, EIM Entities have expressed reservations about proposals to implement bidding at the EIM interties. Generally, there is concern that due to the lack of incremental transmission costs imposed on transactions in the EIM, entities which have historically purchased transmission service from EIM Entities may opt to shift their transactions into the EIM, thereby avoiding the requirement to purchase transmission service. This would result in a loss of transmission service revenue to the EIM Entity transmission providers, as entities forego purchasing hourly (or longer-term) transmission service in lieu of transacting in the EIM. This concern is inherently linked to the "reciprocity transmission" agreement currently used for transmission service in the EIM. While the CAISO may not be able to independently resolve the issue of how EIM entities will recover transmission costs from intertie resources flowing into and through the EIM BAA, transmission revenue is an important topic to address both at the FERC technical conference and within the CAISO initiative. Addressing this transmission revenue issue is seen as important to the implementation of an intertie participation mechanism.

Therefore, WPTF believes it may be important to address the broader issue of transmission costs within the EIM in order to effectively address EIM intertie bidding and to support a construct under which EIM Entities would be willing to open EIM intertie bidding in their areas. WPTF encourages a fulsome review of transmission policies within the EIM with a particular focus on ensuring that transmission policies do not prohibit or discourage EIM Entities from enabling bidding on their interties.

WPTF believes that in order to address these design principles several questions should be examined: What rate structure has been found to be equitable in other RTO's at the seams? Does the reciprocity approach need to be modified to address comparability? How is should the EIM intertie bidding and internal transmission recovery policy be designed to align with the CAISO's Regional transmission rate design proposal? Should a dynamic pricing model be considered which would adjust EIM transmission charges periodically to ensure that any "lost revenue" experienced by EIM Entity transmission providers is recouped?

- E. Provide flexibility with respect to participation where possible. The EIM is currently cleared on 5 minute intervals, yet also allowing boundary offers to clear on a 15-minute basis (comparable to how the FMM is cleared) would greatly increase the operational capacity for many participants to provide offers. If the CAISO has the ability to clear the EIM ties on the 15-minute basis, should such functionality be offered? Not unlike the tradeoffs raised as part of the comparability discussion, the policy choice associated with trade-off between flexibility at the interties versus comparability with EIM internal bids should be weighed.
- F. Provide a design that reasonably supports transactions between CAISO-operated parts of the grid and neighboring BAAs. The CAISO's treatment of transactions at its boundary needs to support market efficiency with non-participating neighboring balancing authorities while the CAISO is enabled to provide a level of rigor in its power flow modeling appropriate to manage real-time flows. This is a balance that needs careful attention. Whereas a goal to provide maximum control and visibility to the CAISO may be noble in isolation, a balance is needed to ensure that the functionality also supports the range transactions that could recognize transactional-, and market efficiency-, benefits from such functionality.

It is imperative for the CAISO to consider impacts on its own system, the systems of EIM Entities and on non-EIM areas. While the CAISO may have implemented fixes to reduce unscheduled flows and associated uplift costs in its own areas, the CAISO should consider the potential for the EIM to exacerbate unscheduled flows in the non-EIM areas. For instance, it is possible that the external participation model may be able to mitigate unscheduled flows in the EIM boundaries, but doing so may exacerbate the unscheduled flows (and therefore, potentially curtailments) experienced in non-EIM areas. WPTF is concerned that the external participation model may create a mechanism to further push unscheduled flow issues into the non-EIM areas, leaving the non-EIM areas primarily responsible for addressing unscheduled flow impacts even though unscheduled flow is an artifact of the entire Western Interconnection. WPTF believes that unscheduled flow is something that must be addressed by all parties, including the CAISO, EIM Entities and non-EIM areas.

Section 2: Comments on the CAISO's EIM external resource participation principles

The CAISO put forth nine principles for consideration in the EIM external resource participation presentation.⁵

We address these herein.

1. A framework solely for voluntary EIM participation by resources located outside of EIM Entities

WPTF agrees that participation should be voluntary. WPTF finds the CAISO's characterization of EIM intertie participation by "resources" located outside of EIM Entities' footprints to be overly restrictive and pre-suppose an design outcome that is exclusionary in nature of non-resource specific participation.

⁵ CAISO August 4 presentation, slide 7 and 8.

WPTF discusses more aspects of resource versus non-resource specific participation in responding to other CAISO-proposed principles below.

2. BAA and Transmission Service Providers (TSPs) will retain existing roles, including physical dispatch of units, serving load, and balancing their footprint

WPTF has no broad objection to BAAs and TSPs maintain their roles. However, WPTF believes it premature to presume that EIM Entities should incur no burden whatsoever to support acceptance of EIM Intertie bids. WPTF strongly believes that the benefits of an open, deep EIM market that includes economic participation at the ties will outweigh any burdens to the EIM Entity itself (recognizing that the CAISO clears the markets itself, and impacts may be limited to additional tagging and settlements).

Since prior to the start-up of the first EIM Entity there has been consideration of reducing the burden to the EIM Entity of open participation. Yet this has also been presented as a transitional issue, and the time is now ripe for adding this functionality while being mindful to alleviate undue burdens on the EIM Entities.

3. Compatible with bilateral trades

As noted in section 1, the EIM already has a significant adverse impact on bilateral trading. The principle, “compatible with bilateral trading” does not go far enough to address the current issues associated with the intersection of bilateral trading and the EIM market. Any market design should take into account bilateral timing and ensure that both the bilateral and EIM intertie markets have every opportunity to be liquid, competitive markets.

4. Must address transmission required to facilitate EIM participation for external resources

WPTF strongly supports the principle to “address transmission required to facilitate EIM participation for external resources”. As noted above in Section 1, this is a challenging topic; however, it is an important issue to resolve to encourage EIM entities to move forward with intertie bidding. WPTF believes it would be beneficial to further define the aspects of this issue. As described in Section 1 this has a lot of qualities that may not be fully separable from existing EIM transmission rate design and from regional RTO transmission rate design challenges.

5. Physical resource and location bidding enables accurate modeling of MW flows and EIM congestion management

This CAISO’s listing, “physical resource and location bidding enables accurate modeling of MW flows and EIM congestion management” is more of a statement of fact than a principle. WPTF agrees that identification of a specific physical resource and its location bidding enables accurate modeling. However, there are other ways to model flows that do not depend on a physical participation model. As a result it seems like this statement is more solution-based rather than a standard that a market design must meet. While WPTF believes the principles articulated in section 1 encapsulate this concern (see for example, item F, Provide a design that reasonably supports transactions between CAISO-operated parts of the grid and neighboring BAAs), if the CAISO would like an explicit design principle we recommend something along the lines of: “EIM intertie modeling should not cause significant additional uplift or reliability concerns.”

WPTF does not want to dismiss the CAISO’s concerns regarding modeling increased uplift, less efficient dispatch of resources, and in an extreme form, reliability issues. Accurate modeling is important to

maintain the integrity and reliability of the CAISO market; however, perfect modeling is impossible and there will always be trade-offs between modeling and effective market design. Again, to imagine that the CAISO should be able to control the information about the dispatches in adjacent BAAs down to the resource level seems to suggest an unworkable reach of the CAISO beyond its area of control.

It is our understanding that the CAISO is concerned that without a physical participation model, the market solution may degrade to the situation prior to the implementation of the Full Network Model enhancements. Prior to this period, the CAISO experienced high congestion offset charges due to the real-time intertie flows exceeding the day-ahead contract path limit. Imports were reduced and bought back at a lower price, therefore increasing uplift costs. The CAISO was able to resolve a large portion of this issue by modeling unscheduled flows in the day-ahead, enforcing physical constraints on the intertie market, and finally extending the modeling of the grid beyond the CAISO controlled grid by coordinating with and getting additional data from WECC. It seems like such a design should be sufficient going forward.

It is also unclear to WPTF why EIM intertie participation would necessarily degrade the model. Presumably there are many bilateral contracts already in place that cause energy to flow into and through EIM balancing areas. Is there a reason that intertie participation and bilateral contracting have significantly different effects on the CAISO's ability to model power flows?

Lastly, the CAISO's statements would suggest that this is a one-way problem; that the CAISO needs more information to better manage its flows. Yet there are numerous BAAs in the west who all face the same problems. Further, the WECC requirements for data exchange are designed to aid in all the BAAs' management of loop flows, for example. The CAISO has not proposed to offer resource-specific dispatch information in real time to all the BAAs neighboring the EIMs, even though other non-participating BAAs have the same challenges (incur costs due loop flow effects and imperfect modeling). Parties should recognize that as long as there is more than one BAA in west, this is a mutual problem that needs to be addressed through the WECC-wide processes. The CAISO cannot solve this problem alone, nor should the CAISO expect entirely more detailed information to be provided to it about flows at the seams than it is willing to provide to other BAAs about flows, unit characteristics and cost structures from resources within its own footprint.

6. Physical resource characteristics required for feasible dispatch and accurate flexibility assessment

WPTF would like the CAISO to provide additional information on this CAISO-proposed principle. Taken at face value this seems like a patently false statement as non-resource specific capacity participates in the fifteen-minute CAISO intertie market today and are dispatched feasibly and in a flexible manner.

Similar to the previous principle (#5) it seems like the CAISO is describing a physical participation model rather than principles needed for an EIM intertie model. WPTF strongly cautions against the CAISO putting forth a solution prior to making a good faith effort to transparently work with stakeholders and understand the issues from their perspective. In particular, a physical resource model immediately excludes financial marketers (at least in the foreseeable future) and any resource unable to meet the operational requirements and implementation set-up costs. Setting up immediate barriers to intertie participation will simply lead to a market that lacks liquidity and efficient pricing.

7. Comparability to EIM participating resources (15 min scheduling and 5 min dispatching comparable to EIM participating resource; subject to EIM market power mitigation and resource

sufficiency tests, similar to EIM Participating Resources; Interface, data exchange, settlements and metering requirements)

As indicated above, in Section 1, principle (C), WPTF strongly supports consideration of comparability. WPTF objects, however, to viewing this dimension of comparability in isolation. It is entirely unclear to WPTF at this time that it is more appropriate to conform EIM external participation with EIM internal participation at the expense of conforming it with the bilateral market and with the CAISO's existing intertie market. This CAISO principle should be abandoned in exchange for an overall consideration of how the market design choice best maximizes market efficiency and open access.

Specific aspects of the treatment such as scheduling intervals and interface requirements should properly follow from a comprehensive weighing of how to best align the markets.

With respect to the CAISO's raising market power concerns, it is unclear from the CAISO's presentation why every EIM intertie offer would automatically be assumed to have market power. First the CAISO alludes to concerns with competitiveness and liquidity at the ties. Small volumes offered in at the ties do not have any influence on the uncompetitive outcomes given that the tie bids clear in combination with all other EIM area bids. Unless the tie player has market power vis-à-vis the entire pool, including their offers in the EIM mix only improves competitiveness. It certainly could not worsen competitiveness. To the extent the CAISO is concerned that at the particular tie there may be a lack of depth in the market and there is therefore a local concern, this would only be the case if the intertie became constrained – isolated from the balance of the market. If this occurred then it would seem that an uncompetitive offer would have no influence on the EIM market clearing and the adverse impacts would also adversely affect the bidders themselves. In short, it is counter-intuitive that a potential lack of depth of offers pose any threat to the EIM markets. And if the CAISO continues to believe there is a concern they should articulate it in some detail.

Having said that, WPTF also finds it important for all parties to recognize that such a market model as the CAISO has raised for the EIM Interties is a severe departure from practices at the boundary at any RTO that WPTF is aware. A market wherein the CAISO would endeavor to query and control cost-based parameters of offers from WECC participants in other BAAs that are not participating in the CAISO or an EIM in order to allow them to offer at the seams seems like an over-reach of CAISO authority. It would raise all sorts of questions about what cost-based prices would be for neighboring BAAs – BAAs that may have complex hydro systems with multi-dimensional operating constraints (fish flows, water rights, etc). It would be nearly entirely unworkable for the CAISO to expect such offers to provide detailed resource characteristics, cost bases, etc. Such a strategy should not be pursued without very careful demonstration of a significant risk to market competitiveness.

8. Respects existing operational and commercial agreements with non-EIM BAA(s) (for example BPA rate-of-change constraints)

Certainly respecting physical constraints is important. WPTF is supportive of insuring that assumptions for ramp rates at interties and other market design qualities such as this are discussed and addressed.

9. Avoid undue operational risks, administrative burden and implementation costs on source Proxy non-EIM BAA and sink EIM BAA(s) to which it interconnects

WPTF recommends the CAISO detail any specific concerns further. Again this item looks seems to presume some market model structure wherein there are designated proxy participants that only sink to existing EIMs. But certainly WPTF supports reduction of unnecessary costs, risks and administrative burdens as a general matter.

WPTF appreciates parties' consideration of our comments and look forward to a further dialog on these issues.

Attachment: CAISO Regional Issues Forum Presentation on EIM Intertie Participation, August 4, 2016