

**Comments of Powerex Corp. on  
Consolidated EIM Initiatives from 2017 Roadmap  
Straw Proposal**

Submitted by	Company	Date Submitted
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Powerex appreciates the opportunity to submit comments on CAISO’s Consolidated EIM Initiatives from 2017 Roadmap Straw Proposal (“Straw Proposal”). The Straw Proposal makes a number of significant changes to the proposals outlined in CAISO’s June 27, 2017 Issue Paper respecting transmission-related enhancements to the CAISO Energy Imbalance Market (“EIM”). Specifically, the Straw Proposal:

- Removes from the scope of this proceeding efforts to establish a framework for the third party donation of transmission rights for use in the EIM;
- States that concerns regarding the exposure of wheel-through customers to imbalance charges for schedule adjustments after the deadline for the submission of base schedules (*i.e.*, T-57) should be addressed through changes to the business practices and Open Access Transmission Tariffs (“OATT”) of entities participating in the EIM (“EIM Entities”);
- Sets out two potential frameworks for ensuring that the benefits of EIM transactions that result in transfers that are not just between adjacent EIM Entity balancing authority areas (“BAA”) are more equitably shared; and
- Identifies a number of new functionalities that CAISO has determined are necessary to facilitate Powerex’s integration into the EIM.

As discussed more fully below:

- Powerex supports CAISO’s decisions to forego further efforts to develop a framework for the third-party donation of transmission rights at this time.
- Powerex agrees that any action to protect customers from imbalance charges for the use of reserved transmission rights after T-57 should be pursued through changes to EIM Entity business practices and OATTs rather than being pursued through changes to the CAISO tariff.
- Powerex agrees that CAISO should explore steps to ensure that entities that facilitate EIM transactions that are not between adjacent EIM Entity BAAs more equitably share in the benefits of such transactions. More specifically, Powerex

encourages CAISO to consider imposing a broad-based, “net wheeling” charge on all EIM transactions and to allocate the associated revenues to EIM Entities facilitating EIM transactions that are not between adjacent EIM Entity BAAs across their systems.

- Powerex encourages CAISO to proceed with implementation of the new functionalities identified in the Straw Proposal and to make these enhancements available to all EIM Entities.

## **I. Third Party Donation of Transmission**

In the Straw Proposal, CAISO explains that it has decided to remove from the scope of this initiative the development of a framework to facilitate the donation of third party transmission rights for use in the EIM. While CAISO previously proposed to establish a framework for allocating congestion revenues to parties that made their transmission rights available to the EIM, CAISO notes that stakeholders indicated that the costs of implementing CAISO’s proposal were likely to outweigh any associated benefits at this time. Furthermore, stakeholders commented that it was unlikely that significant transmission rights would be made available through this framework, at least initially.

Powerex agrees with CAISO’s decision to defer further efforts to develop a broad framework for the third party donation of transmission rights to the EIM at this time. As noted in Powerex’s earlier comments,<sup>1</sup> Powerex believes that it is unlikely that such a framework would result in substantial additional quantities of transmission rights being made available by third parties or confer material benefits on EIM participants. Given that there has been little congestion between EIM Entity BAAs, it is unlikely that there would be significant interest by independent third parties in making their transmission rights available to the EIM or that the donation of such transmission rights would generate significant benefits. Moreover, the integration of new entities into the EIM, including Portland General, Idaho Power, and Powerex, is likely to significantly increase transfer capability in the EIM. For that reason, Powerex agrees with CAISO that it is appropriate to defer further consideration of establishing a framework for the broader donation of transmission rights until there is reason to believe that additional transmission capacity would be provided and that such a framework has the potential to confer material benefits on the EIM.

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<sup>1</sup> Comments of Powerex Corp. on Consolidated EIM Initiatives from 2017 Roadmap Issue Paper at 2-4 (July 3, 2017) (“Powerex Comments”), available at <https://www.caiso.com/Documents/PowerexComments-ConsolidatedEnergyImbalanceMarketInitiatives-IssuePaper.pdf>.

## II. Management of Bilateral Schedule Changes

CAISO's Straw Proposal indicates that CAISO is no longer considering extending the wheel-through functionality currently applied in the CAISO BAA to allow transmission customers wheeling through EIM Entity BAAs to manage their exposure to congestion charges for schedule adjustments made after T-57 by specifying the maximum LMP difference between the source and sink that they would be willing to accept. Although CAISO acknowledges that the decision of EIM Entities to assess imbalance charges to wheel-through customers for use of their transmission rights after T-57 has the potential to erode the value of OATT transmission service on an EIM Entity's system, CAISO states that this value can be restored by voluntary changes to an EIM Entity's business practices and OATT. More specifically, CAISO notes that the submission of a wheel-through schedule up to T-20 will only create redispatch costs "if the base schedules of *other* resources are approved by the EIM entity that utilize the transmission reservation of the firm transmission holder."<sup>2</sup> Thus, CAISO explains that an EIM Entity can address the impact of scheduling after T-57 by adjusting its business practices so that transmission sold to firm transmission customers is not used in the EIM by other resources. Alternatively, an EIM Entity seeking to protect its transmission customers could choose to revise its OATT to exempt wheel-through transactions from imbalance charges for adjustments made after T-57.

Powerex agrees with CAISO's conclusion that any effort to limit the exposure of EIM Entity transmission customers to EIM-related charges for the submission of wheel-through schedules after T-57 should be accomplished through voluntary changes to the business practices and OATTs of EIM Entities. As CAISO recognizes in the Straw Proposal, the current application of imbalance charges to such schedules is not an inherent feature of the EIM design. Instead, it reflects how each EIM Entity has decided to implement the EIM within its own transmission service territory.

Powerex believes that the decision of EIM Entities to subject customers to imbalance charges for the use of their transmission rights after T-57 has created a very powerful disincentive to engage in non-EIM transactions over the systems of EIM Entities after T-57. As Powerex previously noted, the practical effect of the introduction of EIM-related imbalance charges to wheel-through transactions submitted after T-57 has been to increase the cost of investing in transmission service across the system of EIM Entities on the paths that are most relevant and important for transmission customers.<sup>3</sup> Moreover, because these charges tend to be highly uncertain and only known after-the-fact, transmission customers frequently have no way of determining in advance whether

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<sup>2</sup> Straw Proposal at 12.

<sup>3</sup> Powerex Comments at 6-7.

these charges might render a particular transaction unprofitable—leaving little choice for transmission customers but to reduce their volumes of real-time transactions in order to minimize their exposure to such charges and reducing the incentive to invest in transmission service on EIM Entity systems. For some EIM Entities, the result can be a material decrease in the transmission revenues received from wheel-through customers and a corresponding increase in the transmission costs borne by native load customers.

In the case of EIM Entities that face a material decrease in wheel-through revenues (or prospective EIM Entities that rely on such revenues to fund their system), Powerex believes that it would be in the interest of both transmission customers and the EIM Entities themselves to take steps to eliminate the exposure of wheel-through customers to imbalance charges for schedule adjustments made after T-57. As noted in the Straw Proposal, this can be accomplished in a number of ways, including revising the EIM Entity's OATT to waive the application of EIM imbalance charges to wheel-through schedules.<sup>4</sup> Powerex believes that implementation of these or other similar measures would remove existing disincentives to invest in transmission on the system of EIM Entities.

### **III. Equitable Sharing of EIM Transmission Benefits**

Under the existing EIM structure, an EIM Entity facilitating EIM transactions that result in transfers that are not simply between two adjacent BAAs does not receive any share of the financial benefits associated with the transaction. Recognizing that this structure has the potential to lead to inequitable results, CAISO's Straw Proposal proposes, and seeks comments on, two potential approaches to ensuring that entities facilitating transfers that are not between adjacent EIM Entity BAAs more equitably share in EIM benefits:

- **Ex-Post Payment** – Under this approach, CAISO would collect and distribute revenues to entities facilitating EIM transactions that are not between adjacent EIM Entity BAAs. More specifically, CAISO would evaluate the benefit associated with enabling such activity and then assess a rate to the source and sink BAAs, with the revenues distributed to the intermediary BAA.
- **Hurdle Rate** – CAISO would incorporate an explicit hurdle rate into the EIM. In particular, CAISO would collect revenues through the existing EIM transfer cost functionality and distribute the associated revenues to EIM Entity BAAs involved in the transaction through the real-time congestion offset.

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<sup>4</sup> Straw Proposal at 12.

Powerex supports CAISO's efforts to evaluate how to ensure a more equitable allocation of the benefits associated with EIM transactions. As Powerex has noted, CAISO data indicates that EIM transactions that are not between adjacent EIM Entities represent a significant fraction of the total net import and net export volumes in the EIM, which suggests that such transactions may be critical to the EIM's ability to generate benefits. This data also indicates that certain BAAs – APS, NV Energy, and PACE – disproportionately enable such transactions, while other BAAs – most notably, the CAISO BAA – disproportionately benefit from such transactions. Powerex thus agrees that changes should be made to ensure a more equitable allocation of EIM benefits.

At the same time, it is important to recognize that any charge adopted to compensate EIM Entities facilitating EIM transactions that are not between adjacent EIM Entity BAAs will necessarily entail the imposition of a new hurdle rate that has the potential to impede efficient dispatch and reduce EIM benefits. This is true whether the charge takes the form of an explicit hurdle rate that is incorporated into EIM dispatch—such as a \$1 charge on all imports/exports—or an implicit hurdle rate that, while not incorporated into EIM dispatch, will nonetheless be taken into account in market participants' bid and offer prices (e.g., the \$0.19/MWh EIM administrative charge). Whatever the form, implementation of a hurdle rate has the potential to prevent otherwise economic dispatch of resources in the EIM and reduce EIM benefits.

It is therefore critical that any such charge be designed in a manner that ensures that the incremental hurdle rate that is created is as small as possible. Powerex believes that the best way to achieve this is by imposing a per-MWh charge on all transactions that settle in the CAISO real-time market, including uninstructed deviations in load and generation as well as instructed dispatches of resources. By allocating costs over the broadest possible set of CAISO real-time market transactions, such a structure will ensure that the incremental hurdle rate on EIM activity is kept to a minimum, thereby reducing the potential that the charge will impede efficient dispatch or discourage liquidity.

Powerex also believes that such an approach is consistent with cost causation principles. As noted above, data regarding operation of the EIM indicates that all EIM Entity BAAs engage in net imports and exports, with a significant share of EIM Transfers occurring over intermediary BAAs. This suggests that net wheeling by EIM Entities plays a critical role in generating EIM benefits and that the benefits of these transactions are shared broadly across the EIM footprint. It is therefore appropriate to recover the costs of compensating entities that facilitate EIM transactions that result in transfers that are not simply between adjacent EIM Entity BAAs through a charge imposed broadly across all CAISO real-time market transactions—both in CAISO and other EIM Entity BAAs.

While Powerex supports CAISO's efforts to ensure a more equitable allocation of EIM benefits associated with net wheeling, Powerex is also mindful that the elimination of incremental transmission charges in the EIM is a foundational component of the EIM design and its approval by FERC. Consequently, any solution that could result—or could be perceived to result—in a new, explicit “transmission charge” applied only to EIM Transfers (between EIM Entities) should be carefully evaluated for consistency with the now-established principle of transmission reciprocity in the EIM. In addition, as FERC has acknowledged, any new EIM-specific “transmission charge” applied only to EIM Transfers could be challenged as an impermissible double charging of customers that have already paid for OATT transmission service across an EIM Entity's system.<sup>5</sup>

In determining the amount of revenue collected to compensate entities facilitating EIM transactions that are not between adjacent EIM Entity BAAs, Powerex believes that the focus in determining the amount of any charge should be on the incremental benefits associated with EIM Transfers across an intermediary BAA. Although precisely calculating the incremental benefits associated with such transactions could easily become overly complex and unworkable, Powerex believes that a relatively simple approach would be to start by quantifying the incremental benefits associated with EIM Transfers more broadly based upon the difference between the market-clearing price in a BAA and the price of the marginal resource dispatched within the BAA. Using this approach, CAISO could calculate the marginal benefit of EIM Transfers across the entire EIM footprint over an appropriate historical period (e.g., over the past month or past year). A defined portion of the total benefits could then be designated as the total revenue to be collected to compensate entities facilitating EIM Transfers between EIM Entity BAAs based upon the percentage share of net wheeling transactions of total EIM Transfers. For instance, if net wheeling transactions represent 20% of total EIM Transfers, then perhaps 20% of the calculated aggregate marginal rents associated with EIM Transfers could be collected and allocated to entities facilitating net wheeling. The amount to be collected could then be divided by the total amount of transactions in the CAISO real-time market (instructed dispatched and uninstructed deviations and imbalances) to determine the magnitude of the charge to assess per MWh.

#### **IV. New EIM Functionalities**

In the Straw Proposal, CAISO explains that it has identified a number of design enhancements that it will need to make to support Powerex's planned integration into the EIM in April 2018. More specifically, CAISO states that it plans to:

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<sup>5</sup> *PacifiCorp*, 147 FERC ¶ 61,227 at PP 145-149 (2014).

- permit automated matching of import/export schedule changes with a non-participating resource;
- implement automated mirror system resources at CAISO scheduling points;
- provide settlement information for base EIM Transfer System Resource (“ETSR”) schedule changes;
- implement new non-generator resource modeling functionality; and
- allow the submission of Base Generation Distribution Factors for aggregated non-participating resources.

Powerex appreciates and supports CAISO’s decision to expand the scope of this proceeding to include new functionalities prompted by—but not exclusively available to—Powerex’s integration into the EIM starting in April 2018. As detailed in the CAISO-Powerex Implementation Agreement, Powerex plans to participate in the EIM using the capability of resources and load located wholly outside of the United States. Although Powerex and CAISO are developing a framework that takes into account the unique circumstances of Powerex’s participation as a Canadian entity, while remaining compatible with the established EIM framework and market rules, certain enhancements to CAISO’s existing modeling and scheduling practices will be necessary to facilitate Powerex’s participation.

It is important to note that, while CAISO’s decision to proceed with the enhancements described in the Straw Proposal is driven by its efforts to prepare for Powerex’s integration into the EIM, CAISO intends to make these enhancements available to *all* EIM entities. Powerex strongly supports CAISO’s decision to take steps to ensure that these enhancements are made available to all EIM Entities on a non-discriminatory basis, and believes that implementation of these enhancements has the potential to confer benefits on the EIM more broadly.

Notably, a number of the enhancements described in the Straw Proposal simply represent automation of existing manual processes and functionalities that are already available to EIM Entities. For example, CAISO explains that it is proposing to allow EIM Entities to automatically adjust a single non-participating resource schedule to match import and export changes (outside the EIM) that occur after T-40. Currently, an EIM Entity that seeks to adjust the output of a non-participating resource in order to respond to changes in imports and exports (outside the EIM) after T-40 is required to issue a manual dispatch instruction to the resource. Under CAISO’s proposal, however, this process will be automated such that CAISO’s market software will automatically adjust the pre-identified resource schedule to take into account changes in interchange after T-40.

Similarly, CAISO proposes to automate the mirroring of schedule changes at CAISO intertie points after T-40. As detailed in the Straw Proposal, CAISO uses “mirror system

resources” to take into account an EIM Entity’s non-EIM schedules at CAISO intertie scheduling points (e.g., day-ahead and real-time intertie schedules). More specifically, an EIM Entity currently reflects its anticipated schedules with the CAISO by submitting a base schedule for its designated mirror system resource. In the event that there is a change in this schedule that occurs after T-40 for any reason, the EIM Entity reflects this change through a manual adjustment to the schedule for its designated mirror system resource. Under CAISO’s proposal, this process will be automated such that CAISO’s software will automatically adjust an EIM Entity’s schedule to reflect any changes that occur after T-40.

Likewise, CAISO’s proposal respecting Base ETSRs merely represents an enhancement to existing EIM processes available to all EIM Entities. Currently, CAISO uses Base ETSRs to take into account bilateral interchange activity between EIM Entities. Although CAISO does not settle bilateral transactions between EIM Entities, CAISO currently registers two Base ETSRs for each EIM Entity—one in the import direction and one in the export direction—to model these transactions. Under the proposed enhancement, CAISO will now provide EIM Entities with settlement information for Base ETSR schedule changes. As CAISO notes, this information will enable EIM Entities to identify the point of delivery and LMP for Base ETSR schedule changes and may help facilitate settlement of bilateral transactions in the EIM area.

The remaining enhancements are necessary to reflect that Powerex will participate in the EIM with residual capability from large hydro resources that will be modeled as aggregate non-generator resources (“NGR”). The use of non-generator resource functionality facilitates the use of modeled aggregate resources with both a positive and negative bid range quantity. Powerex supports identifying any changes necessary to the existing NGR functionality to support EIM participation by aggregated resources in this manner, including the use of base Generation Distribution Factors to support accurate modeling of physical power flows from the underlying physical resources. Powerex notes that use of modeled aggregate resources to represent physical resources (that are electrically similar) is already available, and in use, in the EIM. Using the NGR functionality and Generation Distribution Factors to further facilitate the use of modeled aggregate resources does not alter the fundamental roles and responsibilities of resources participating in the EIM, including the application of local market power mitigation.