

**Comments of Powerex Corp. on  
2017 Draft Policy Initiatives Roadmap**

Submitted by	Company	Date Submitted
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Powerex appreciates the opportunity to provide comments on CAISO's 2017 Draft Policy Initiatives Roadmap issued October 27, 2016.

As described more fully below, Powerex urges CAISO to assign a high priority to a select number of key initiatives that can substantially increase the efficiency and competitiveness of the Energy Imbalance Market ("EIM"). In particular, Powerex believes significant improvements to the EIM can be achieved by pursuing the following initiatives in 2017:

- Developing a framework for resource-specific EIM participation by resources located outside of an EIM Entity Balancing Authority Area ("BAA") (Initiative 6.4.1); and
- Developing a framework for entities that are not EIM Entities to make transmission service available for use in the EIM (Initiatives 6.4.4 and 6.4.5).

Powerex also supports pursuing Initiative 6.4.2 in order to ensure appropriate compensation to entities providing wheel-through service in the EIM, and Initiative 6.4.7 (with a potential modification to its scope) to better align the EIM and bilateral market frameworks in the West.

In Powerex's view, substantially increasing the flexible resources and the transmission transfer capability available in the EIM has the potential to confer very significant economic, environmental, and reliability benefits to the Western grid and its consumers. Powerex believes the above-identified stakeholder initiatives will allow CAISO to achieve this outcome by enabling a large volume of clean, flexible resources and surplus transmission transfer rights to participate in the CAISO's EIM. Such participation can be expected to greatly assist in meeting renewable integration challenges, enhancing the accuracy of CAISO's modeling of resources, and increasing CAISO's situational awareness of real-time conditions across the Western grid. Powerex is not aware of any other initiatives that could provide CAISO with greater access to clean, flexible resources and transmission transfer capability in its real-time market over the next several years. Efforts to enable external resource participation in the EIM do not detract from the important efforts to continue to add EIM Entities or to pursue a regional organized market. Indeed, Powerex views external resource participation as complementary to these initiatives, while also offering unique additional benefits.

Finally, Powerex also supports the pursuit of Initiative 6.1.1, *Export Charges*, in order to remove a key barrier to efficient economic displacement exports in CAISO's real-time market. This change can help CAISO address oversupply challenges and reduce renewable curtailment in the near term, before external resource participation can realistically be enabled.

## **I. Powerex Supports Enhancing Competition and Efficiency of the EIM as a Top Policy Priority in 2017**

After approximately two years of operation, the EIM has demonstrated not only its ability to identify and deploy the least-cost resources to meet imbalance energy needs across an expanded footprint; it has also demonstrated its ability to support integration of California's and EIM Entities' renewable resources, reduce the reserves necessary to ensure reliability, and reduce overall greenhouse gas ("GHG") emissions. Indeed, the most recent CAISO analysis indicates that the EIM has delivered significant benefits across the expanded EIM region.<sup>1</sup> Moreover, the successful simultaneous integration of Arizona Public Service Company and Puget Sound Energy as EIM Entities on October 1 also indicates that the EIM has overcome some of the operational challenges it initially faced.

The performance of the EIM has continued to attract additional BAs to participate as EIM Entities. Currently, there are two BAs scheduled to join the EIM, and an additional four BAs exploring future entry.<sup>2</sup> BAs that elect to participate as EIM Entities will be able to receive the full range of EIM benefits for their consumers, including more efficient integration of renewables, the ability to purchase and sell intra-hour energy, better management of congestion, and more efficient pricing of imbalance energy services. Powerex therefore anticipates that additional BAs will continue to decide to participate as EIM Entities.

Expansion solely through the addition of more EIM Entities, however, will leave a critical subset of generation and transmission resources out of the EIM, preventing the EIM from functioning as a truly integrated, competitive Western real-time market. In practice, EIM participating resources to date have been almost exclusively limited to the resources owned by the EIM Entity in each BAA. In addition, the transmission capability that can be used to support EIM Transfers between EIM Entities has been very limited on certain key paths. These two factors, in turn, have resulted in high resource ownership concentration *within* each EIM Entity and limited ability to transfer energy *between* certain EIM Entities. For example, the Northwest portions of the EIM (*i.e.*,

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<sup>1</sup> See generally Cal. Indep. Sys. Operator Corp., Western EIM Benefits Report, Third Quarter 2016 (Oct. 26, 2016), available at [http://www.caiso.com/Documents/ISO-EIMBenefitsReportQ3\\_2016.pdf](http://www.caiso.com/Documents/ISO-EIMBenefitsReportQ3_2016.pdf).

<sup>2</sup> Cal. Indep. Sys. Operator Corp., Briefing on Western Energy Imbalance Market at 2 (October 26-27, 2016), available at [http://www.caiso.com/Documents/Briefing\\_WesternEnergyImbalanceMarket-Presentation-Oct2016.pdf](http://www.caiso.com/Documents/Briefing_WesternEnergyImbalanceMarket-Presentation-Oct2016.pdf).

PacifiCorp West and Puget Sound Energy) are often isolated from the rest of the EIM footprint due to the limited transfer capability of the California-Oregon Intertie (“COI”) that is available for use in the EIM. While the COI has the potential to support over 3,000 MW of transfers to or from the CAISO BAA, the EIM currently can utilize only about 400 MW of this capacity, representing the limited COI transmission service reserved by PacifiCorp.<sup>3</sup> EIM transfer limitations on the COI in turn limit the extent to which PacifiCorp West and Puget Sound Energy can absorb surplus energy from California to reduce the need for the curtailment of in-state renewables. It also means that, in many hours, there may be only two suppliers—Puget Sound Energy and PacifiCorp—capable of meeting imbalance energy needs in the Northwest portion of the EIM footprint.

Critically, these limitations are unlikely to be fully addressed—and the full potential consumer benefits of the EIM are unlikely to be realized—if expansion of the EIM is permitted to occur only through additional BAs participating as EIM Entities, for two reasons.

*First*, a significant amount of the clean, flexible generation resources in the Northwest are located in BAs that face legal, regulatory or political challenges to becoming EIM Entities. BAs such as BC Hydro and Bonneville Power Administration have substantial clean, storage hydro resources within their BAAs, with characteristics that appear well-suited to an intra-hour imbalance energy market. But these regions, and potentially others, may face challenges that prevent each applicable BA from joining the EIM as an EIM Entity. Under the current EIM design, resources located in a non-EIM Entity BAA are, in effect, categorically excluded from participating in the EIM.<sup>4</sup> This appears to deprive the EIM of a potentially large amount of precisely the type of clean, flexible, resources that could provide significant additional benefits to all EIM participants.

*Second*, a large amount of transmission service in the West is committed to individual transmission customers under the Open Access Transmission Tariffs (“OATT”) of Western transmission providers, often under service agreements with terms spanning multiple years or longer. This is especially true on major paths used for inter-regional trade, such as the COI and the Pacific DC Intertie (“PDCI”). To date, only transmission rights held by the EIM Entities themselves have been made available for use in the EIM,

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<sup>3</sup> Powerex understands that the portion of PacifiCorp’s COI transmission rights made available for use in the EIM is at the discretion of PacifiCorp Energy, which is not required, and has not committed, to make any specific quantity of those rights available to the EIM.

<sup>4</sup> Powerex understands that there may be a notional ability for a resource that is not in an EIM Entity’s BAA to participate in the EIM through a pseudo-tie arrangement. However, pseudo-tie arrangements are generally used to effectively move a physical generating unit into a different BAA, with this “move” applying to the entire capacity of the unit, in all hours, and in all market timeframes. Such an arrangement is therefore unlikely to be a workable solution for resources that seek to participate in the EIM with only a portion of their capacity, or in only some hours, and that do not desire to transfer physical units out of their BAA for all activity.

whether on an EIM Entity's own transmission facilities (e.g., PacifiCorp's COI rights) or on a third-party system (e.g., Puget's donation of its 300 MW of Bonneville transmission rights between BPAT.PSE and BPAT.PACW). Critically, however, many of the transmission customers that have invested in long-term OATT transmission rights are not BAs at all. In other words, the addition of new EIM Entities may be a highly ineffective way to increase EIM transfer capability between EIM Entities, since much of the rights to that capability are held by entities that are not affiliated with BAs intending to join as EIM Entities.

To more fully realize the potential benefits of the EIM, Powerex believes it is necessary to develop new models to (1) enable EIM participation by resources located in BAs that are not EIM Entities; and (2) enable OATT transmission rights to be made available for use in the EIM. In addition, Powerex believes it would be highly beneficial, through a separate stakeholder process, to address areas where the current EIM design may create unnecessary seams with bilateral market arrangements.

Given the broad stakeholder interest in expanding opportunities for EIM participation, and the significant benefits such participation could provide, Powerex urges CAISO to prioritize those stakeholder processes regarding the following core EIM areas.

**A. Enabling EIM Participation by Resources Located in BAAs that are not EIM Entities**

Powerex encourages CAISO to commence a stakeholder process focused on establishing a framework for resource-specific EIM participation for external resources as contemplated by Initiative 6.4.1, *Enhancing Participation of External Resources*, of the Draft Policy Initiatives Roadmap. It is important to note that this stakeholder process would focus on a framework for resource-specific EIM participation and would not be intended to develop a framework for "generic intertie bidding" at the external interties of EIM Entities. Rather, the goal would be to extend the opportunity for voluntary EIM participation that currently exists for generators located *inside* an EIM Entity BAA to generators located *outside* such BAAs.

In order for external resource participation to be workable and acceptable to CAISO and to EIM Entities, Powerex recognizes that any such framework will need to uphold the key design principles upon which the EIM is based, and address several key issues including:

- Accurate modeling of participating resources and the power flows resulting from their dispatch;
- Resource sufficiency requirements to ensure participants do not "lean" on the EIM for capacity or flexibility;
- Local market power mitigation; and
- GHG accounting and compliance.

Powerex also recognizes that a workable framework for external resource participation must not attempt to provide a more favorable “deal” than is available to BAs that seek to become EIM Entities. For instance, Powerex expects that any framework for external resource participation in the EIM would require external participants to pay a fair share of general EIM costs, as well as bear any costs directly related to their participation. In addition, EIM Entities would not be expected to bear increased costs in order to accommodate external resource participation. While it is possible that costs will *differ*, these differences should reflect only the narrower scope of participation—and hence the more limited range of services and benefits being received—under the external resource participation framework.

At the FERC Technical Conference, some participants argued against pursuing such an initiative on the basis that developing a new participation framework for external resources might alter the cost-benefit analyses of BAs that elected to participate (or are considering participating) as EIM Entities. Powerex strongly believes that customers of BAs that are able to become EIM Entities will continue to see significant benefits from the full range of services available under that framework, including congestion management, integration of renewables within their footprint, sharing of diversity benefits, and optimization of internal dispatch. Those services and their associated consumer benefits will continue to be available only to EIM Entities. An external resource participation framework, in contrast, would only provide the ability for resources to buy or sell intra-hour energy.

Moreover, while concerns were raised regarding the potential for the participation of external resources to increase the reliability burden and risks on EIM Entities, Powerex believes that such concerns can be fully addressed by developing an external resource participation framework that includes appropriate data sharing with CAISO and robust protections to prevent “leaning” on the EIM. Establishing such protections will ensure that the participation of external resources does not create new reliability risks for EIM Entities and has no greater impact on the EIM than the participation of resources located within an EIM Entity BAA. Rather than creating additional reliability risks, Powerex believes that increasing the quantity and diversity of dispatchable resources participating in the EIM has the potential to enhance reliability and generate significant additional benefits by increasing market liquidity.

Rather than raising credible concerns regarding reliability or creating opportunities for “free-riding,” a well-designed external resource participation framework will ensure that resources located outside of EIM Entity BAAs have an opportunity to purchase and sell intra-hour energy in the EIM; an opportunity currently limited only to resources located inside EIM Entity BAAs. Although some may attempt to suggest that enabling external resource participation will reduce the benefits of the EIM, CAISO and stakeholders should be highly skeptical of such arguments. It may well be the case that increased participation results in an incumbent seller being economically displaced in favor of a lower-priced competitor. Similarly, it may be the case that increased participation results in an incumbent purchaser being economically displaced in favor of a competitor that places a higher value on purchasing the same energy. But these outcomes are simply the result of creating a more robust, liquid, and competitive market. Limiting the

participation of external resources to protect against such outcomes would be contrary to FERC's efforts to promote competitive markets, increase efficiency, and to deliver greater value to consumers.

## **B. Enabling OATT Transmission Rights to be Made Available for Use in the EIM**

Powerex also encourages CAISO to prioritize initiatives focused on establishing a framework for third-parties to make their transmission rights available as contemplated in Initiative 6.4.4, *Compensation for Third Parties Making Capacity Available for EIM Transfers*, and Initiative 6.4.5, *Donation by Third Party for Transmission Capacity Available for EIM Transfers*.

A key constraint on least-cost dispatch is impediments to using resources in one location to meet energy imbalances experienced in another location. Where such impediments are due to physical limitations on energy flows, it means that the imbalance energy costs cannot be reduced further given existing transmission facilities. But where such impediments are not due to a lack of available physical transmission capability, but instead simply reflect that the EIM does not have the right to utilize that capability, a clear opportunity for increased efficiency exists.

In the EIM, transfers between EIM Entities are currently limited to either the residual transmission capability remaining on the EIM Entity's transmission system (*i.e.*, the Available Transfer Capability methodology) or to transmission reserved by the merchant arm of the EIM Entity under the OATT framework and made available for use in the EIM. There currently is no way for a non-EIM Entity to elect to make its transmission rights available for use in the EIM. Given that non-EIM Entity transmission customers hold a large quantity of reserved transmission capacity, there appears to be a significant opportunity to increase the quantity of EIM Transfers that are possible in the EIM.

A framework that permits transmission customers to make their OATT transmission reservations available for use in the EIM, in exchange for appropriate compensation, can increase EIM Transfers in several ways. Under an OATT transmission "donation" framework, non-EIM Entity transmission customers could directly increase the quantity of transmission rights made available for EIM use. This could be on the transmission system of an EIM Entity (*e.g.*, Powerex owns OATT transmission rights on PacifiCorp's transmission system, which could be used to support additional EIM Transfers with CAISO at Cascade). This approach could also be used on a third-party transmission provider's system. For example, Powerex owns OATT transmission rights on Bonneville's primary network, which could be used to support EIM Transfers among Puget Sound Energy, PacifiCorp, or future EIM Entities that connect to Bonneville's transmission system. Powerex also owns OATT transmission rights on both the COI and the Pacific DC Interties, which could support additional EIM Transfers to or from CAISO.

A workable framework to enable the donation of OATT rights by transmission customers for use in the EIM needs to address both how those rights are made available to the

EIM and the appropriate compensation that would be provided in return. This compensation could include participation in congestion rents on the donated path, but may also include participation in a new, broader compensation framework for EIM “wheel-through” transmission service that may be developed.

Powerex believes this framework falls within the scope of existing initiatives 6.4.4 *Compensation for Third Parties Making Capacity Available for EIM Transfers* and 6.4.5 *Donation by Third Party for Transmission Capacity Available for EIM Transfers*.

### **C. Complementary Initiatives Should be Pursued Simultaneously to Maximize Potential Benefits**

While the above initiatives are listed individually in the 2017 Stakeholder Initiatives Catalog, they are strongly interdependent. Enabling external resource participation in the EIM without also increasing EIM transfer capability through a third-party transmission donation framework may result simply in adding resources to constrained areas. For instance, enabling external resource participation by Powerex, Bonneville Power Administration, and the members of the Public Generating Pool, but without meaningfully increasing the transfer capability into the CAISO BAA beyond the current level of, at most, 400 MW, could sharply limit the benefit of these additional resources.

Similarly, a framework for third-party transmission donation is likely to be far less effective if implemented without enabling external resource participation. The entities that have invested in OATT transmission rights (*i.e.*, the potential “donors” of transmission rights for use in the EIM) are often entities with access to flexible external resources. Absent an external resource participation framework, donation of these transmission rights for use in the EIM would necessarily mean *not* using those rights to support transactions from those flexible resources; the transmission donation could require the potential “donor” to forgo its ability to market the residual production from its flexible resources. Participation in a third-party transmission donation framework would therefore be deterred, *unless* the donor’s flexible resources were able to make residual sales in the EIM as external participating resources. By enabling external resource participation and third-party transmission donation simultaneously, the EIM would encourage maximum participation of both flexible resources and transmission rights.

### **D. Improving Alignment between the EIM and Bilateral Markets**

Powerex also encourages CAISO to prioritize efforts to make changes that have the potential to minimize seams issues between the EIM and the existing bilateral markets operating under the OATT framework.

In recent months, it has been recognized that the current deadline for the submission of forecast data for transmission customers taking service under the OATT of an EIM Entity (*i.e.*, 57 minutes prior to each operating hour (T-57)) may be adversely impacting bilateral interchange transactions. In particular, it has been recognized that the EIM’s treatment of any adjustments made after T-57 as an imbalance—even if the interchange transaction involves a balanced quantity of energy simply being wheeled over an EIM

Entity's transmission system—exposes bilateral interchange transactions to new charges and risks. As CAISO has pointed out, the EIM does not directly prohibit bilateral interchange transactions from being adjusted after T-57; however, the potential exposure to unknown financial charges strongly discourages such adjustments.

Although the consequences of these new charges are experienced in the first instance by the transmission customers (who effectively lose the ability to adjust their transactions close to real-time and within the operating hour), these consequences can also result in a decline in demand for transmission service from transmission service providers that are EIM Entities. Indeed, Powerex's own willingness to purchase transmission rights on the transmission systems of EIM entities has declined markedly as a direct result of the impacts of the T-57 deadline. Enhancing the implementation of the EIM such that imbalance energy charges are not applied to bilateral wheel-through interchange transactions adjusted after T-57 would eliminate an unnecessary seams issue between the bilateral markets and the EIM. This would improve the efficiency of bilateral markets, restore the full functionality of OATT transmission rights, and avoid jeopardizing transmission service sales for transmission service providers that become EIM Entities. This issue would appear to be best addressed in Initiative 6.4.7 *Management of EIM Imbalance Settlement for Bilateral Schedule Changes*, though it may be beneficial to clarify the description of this initiative to include this issue.

A related concern arises regarding wheeling-through the transmission system of one EIM Entity by other EIM Entities without compensation. For instance, prior to December 2015, an entity located in the PacifiCorp East BAA that purchased energy from the CAISO would be required to procure and pay for transmission service through an intermediate transmission provider such as NV Energy. But with the entry into the EIM of NV Energy in December 2015, that same transaction can now occur through the EIM, but without the need to purchase or pay for transmission across NV Energy's transmission system. Similarly, the EIM now provides an opportunity for Puget Sound Energy to wheel its power through PacifiCorp's transmission system to and from the CAISO BAA, without any compensation for the use of PacifiCorp's transmission system or for the use of PacifiCorp's donated COI transmission rights.

It is important to recognize that, when one EIM Entity's transmission system is used to support energy imbalance transactions involving only *other* EIM Entities, its consumers realize no economic or efficiency benefits, nor do they currently receive any compensation for providing this EIM wheel-through service. Moreover, the availability of no-cost wheel-through transmission in the EIM can actually encourage entities to shift transactions into the EIM that otherwise would have necessitated procuring and paying for transmission service. Like the seams issue discussed above, this can lead to reduced transmission service revenues for certain transmission service providers that become EIM Entities—specifically, those that are located geographically between two or more EIM Entities (and/or the CAISO). The same concern has been raised in the context of enabling participation by resources located outside of EIM Entity BAAs.

In addition to concerns regarding lost transmission sales revenues, the issue of wheel-through service in the EIM also raises a fundamental equity or fairness concern.



Specifically, some EIM Entities (and external resource participants that donate transmission rights) may provide substantial wheel-through transmission service in the EIM, while others may not provide any wheel-through transmission service at all. This may often simply be the result of the geographic location of the transmission rights being provided. Powerex supports the principle that all users of a transmission system should make an equitable contribution to the cost of those facilities. A sustainable and workable EIM design cannot be achieved if there are persistent opportunities for “free riders” to benefit from services for which they do not bear an appropriate share of the costs. A stakeholder process is necessary to clearly identify the specific concerns regarding wheel through service under the existing and potential future EIM design, and to develop solutions that address these concerns in a manner that preserves the efficiency benefits of the EIM. Powerex believes that the issue of compensation for EIM wheel-through service is within the scope of Initiative 6.4.2 *Potential EIM-Wide Transmission Rate*.

## **II. The Preliminary Ranking Understates the Potential Benefits and Stakeholder Support for these Initiatives**

In Powerex’s view, the initiatives discussed above have the potential to result in substantial increases in the economic, environmental, and reliability benefits of the EIM by increasing the participation of flexible resources in the EIM and the transmission transfer capability available to the EIM. In addition, at the October 28 FERC Technical Conference on external resource participation in the EIM, numerous stakeholders expressed support for the immediate commencement of a stakeholder process focused on developing a workable framework for external resource participation in the EIM. For that reason, Powerex was disappointed by the relatively low scores initially assigned to these initiatives in CAISO’s Draft Policy Initiatives Roadmap in the categories of grid reliability, improving market efficiency, and stakeholder support. As discussed below, Powerex believes that these scores should be revised to more accurately reflect the potential benefits of, and support for, these initiatives.

### **A. Efficiency**

In the Draft Policy Initiatives Roadmap, CAISO assigns an initial ranking score of 7 for “Improving Overall Market Efficiency” to the initiatives respecting EIM External Resource Participation and the provision of third-party transmission rights to the EIM. This means that initial ranking views these initiatives as having the potential to result in only a “moderate improvement” in overall market efficiency.

Powerex believes that developing a workable model for external resource participation and the use of third-party transmission rights in the EIM has the potential to unlock significant flexible resources that could be used to more efficiently integrate renewable resources and meet imbalances on a least-cost basis. Based on the discussion at the FERC Technical Conference, it appears that there is significant interest in such a framework among entities with large hydroelectric facilities in the Northwest, particularly among entities for which participating as an EIM Entity may not be workable. Powerex believes that the participation of such resources in the EIM can play an invaluable role

in meeting the challenges of renewable integration in California and throughout the West—particularly to the extent that the availability of third-party transmission rights for use in the EIM also increases to complement this participation.

Establishing a resource-specific framework for external EIM participation also is consistent with CAISO’s goal of increasing efficiency through more accurate modeling of external systems and resources. In particular, a resource-specific model for external participation in the EIM will give CAISO greater visibility into the operation of the transmission systems and resources located outside of the existing EIM footprint and, as a result, will enhance the accuracy of CAISO’s modeling of actual electric flows. In fact, by providing CAISO information about the operation of individual resources participating in the EIM, establishing a framework for external resource participation may provide CAISO with greater visibility than CAISO’s planned Full Network Model – Phase 2 initiative, which appears limited to representing external sources and sinks through the use of aggregate regional scheduling hubs, with no detail regarding operation characteristics of individual resources.

Powerex believes that these initiatives are particularly important because they have the potential to deliver significant benefits relatively quickly and across a broad geographic area. Unlike initiatives that focus on the integration of a single BA into the CAISO or into the EIM—which necessarily proceed one BAA at a time—establishing a workable framework for external resource EIM participation has the potential to unlock flexible resources of multiple entities that otherwise may not participate in the CAISO or EIM real-time markets. Powerex believes that these resources can play a critical role in allowing CAISO to meet the challenges of renewable integration, while the larger regionalization initiatives continue to proceed.

Powerex believes that these initiatives should be assigned a substantially higher ranking for “Improving Overall Market Efficiency,” reflecting the potential to provide significant improvements in real-time market efficiency.

## **B. Reliability**

Powerex also believes that taking steps to increase EIM liquidity—with a much deeper stack of flexible resources and with greatly increased transfer capability to allow those resources to meet needs throughout the EIM footprint—warrants a higher ranking score than the “3” for a “Minimal Improvement” in “Grid Reliability” assigned by the initial rankings.<sup>5</sup>

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<sup>5</sup> For example, the initial rankings assign a Grid Reliability score of “3” for both “EIM External Resource Participation” and for “Donation by Third Party for Transmission Capacity Available for EIM Transfers.” But the same score of “3” was given to “Review MIC” and to “Allowing Convergence Bidding at CRR Sub-Load Aggregation Points,” neither of which have a direct effect on real-time market operations.

CAISO has repeatedly emphasized that the EIM enhances reliability “by providing information that increases the operational awareness and responsiveness to grid conditions across” BAAs.<sup>6</sup> Similarly, FERC staff has found that an EIM enhances reliability by increasing situational awareness, ensuring faster delivery of replacement generation after the end of reserve sharing assistance, and easing the integration of renewable resources.<sup>7</sup> Implementing a resource-specific model for external resource participation will only further increase the reliability benefits associated with the EIM by giving CAISO the ability to model resources outside of the existing EIM footprint and, potentially, throughout the West. By increasing CAISO’s situational awareness, implementation of a resource-specific model will allow CAISO to more effectively model and manage electricity flows across the West. In addition, by facilitating the participation of more flexible resources in the EIM, establishing a resource-specific participation model will give CAISO the ability to more effectively respond to changes in the output of renewable resources, including managing over- and under-supply conditions.<sup>8</sup>

Powerex believes that these initiatives should be assigned a substantially higher ranking score for “Grid Reliability,” reflecting the potential to achieve increased operational flexibility and greater real-time situational awareness.

### **C. Stakeholder Support**

The initial rankings indicate that EIM external resource participation and third-party transmission donation initiatives are only “desired by a small number of stakeholders.” Powerex believes that the initial rankings substantially understate the degree of stakeholder support for these initiatives. This was clearly seen during the October 28, 2016 FERC Technical Conference, where numerous entities expressed support for a CAISO-led stakeholder process to enable resource-specific EIM participation by resources located in BAAs that are not EIM Entities. Not only was there support from a large *number* of stakeholders, but there was strong support specifically from entities that could actually participate in the EIM with their significant access to both clean, flexible resources and to long-term OATT transmission rights on major transfer paths in the

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<sup>6</sup> Cal. Indep. Sys. Operator Corp., Energy Imbalance Market: Draft Final Proposal at 1 (Sept. 23, 2014), *available at* <http://www.caiso.com/Documents/EnergyImbalanceMarket-DraftFinalProposal092313.pdf>.

<sup>7</sup> Fed. Energy Reg. Comm’n, Qualitative Assessment of Potential Reliability Benefits from a Western Energy Imbalance Market at 2 (Feb. 26, 2013), *available at* <https://www.caiso.com/Documents/QualitativeAssessment-PotentialReliabilityBenefits-WesternEnergyImbalanceMarket.pdf>.

<sup>8</sup> While some have claimed that establishing a model for external participation has the potential to create new reliability challenges, Powerex believes that such claims do not apply to a resource-specific external participation model, which provides CAISO with enhanced visibility and situational awareness comparable to that of resources within EIM Entity BAAs. Powerex believes reliability concerns would be limited to models for “generic intertie bidding” in the EIM, which is not an approach that Powerex believes should be pursued at this time.

West. These entities include Powerex, Bonneville Power Administration, the members of the Public Generating Pool, and the members of the Public Power Council. It is difficult to envision stronger support for the key stakeholder processes needed to dramatically increase EIM participation than what was expressed at the FERC Technical Conference.

Some participants at the Technical Conference raised concerns regarding *how* external participation should be achieved, or issues that will need to be addressed. This underscores the need for a stakeholder process to develop appropriate solutions to these issues, however; it does not indicate blanket opposition to a stakeholder process on these topics.

Powerex believes that the initiatives related to expanding EIM participation should be assigned a substantially higher ranking score for “Desired by Stakeholders,” reflecting the strong and widespread stakeholder support that has been expressed.

### **III. Powerex Supports Exploring Targeted Waiver of Export Charges to Increase Real-Time Economic Exports in the Near Term**

At the FERC Technical Conference, CAISO stated that implementing external resource participation in the EIM could be possible by 2018 “if we dropped everything, everything and spent our time just doing this.”<sup>9</sup> Of course, CAISO resources will also be devoted to other important initiatives, suggesting that external resource participation in the EIM might not realistically be enabled until Spring 2019.

CAISO’s need for flexible resource participation in real-time already exists, however, and it continues to grow. In September 2016, for instance, CAISO was forced to curtail over 25,000 MWh of renewable resource generation—the majority of it from solar resources.<sup>10</sup> It is both inefficient and regrettable for CAISO to have to curtail zero-emission, zero-variable-cost electricity production when there are flexible resources located outside of the CAISO grid that could readily reduce their output to absorb this renewable energy and avoid those curtailments.

In October 2015, CAISO convened a workshop to explore the barriers that may be discouraging precisely this kind of real-time economic export activity in its existing intertie bidding framework.<sup>11</sup> That workshop identified specific aspects of CAISO’s market design that impede this type of participation, including the CRR clawback rule

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<sup>9</sup> October 28, 2016 Technical Conference, *Tr.* at 166:2-3.

<sup>10</sup> Cal. Indep. Sys. Operator Corp., Market Performance Report: September 2016 at 18. (Nov. 3, 2016), available at: <http://www.caiso.com/Documents/MarketPerformanceReportforSep2016.pdf>

<sup>11</sup> See, e.g., Cal. Indep. Sys. Operator Corp., FMM Import & Export Liquidity (Oct. 6, 2016), available at [https://www.caiso.com/Documents/ISOPresentation\\_Import-ExportLiquidity\\_15-MinuteMarket\\_Workshop\\_Oct6\\_2015.pdf](https://www.caiso.com/Documents/ISOPresentation_Import-ExportLiquidity_15-MinuteMarket_Workshop_Oct6_2015.pdf).

and the application of the Transmission Access Charge (“TAC”) and uplift to export schedules.<sup>12</sup> During 2016, CAISO proposed modifications to the CRR clawback rule; the modifications were approved by the CAISO Board of Governors, and draft tariff language was recently posted. Powerex strongly supports this action to address one of the key impediments to economic intertie bidding. However, the improvements to the CRR clawback rule are targeted to support more efficient real-time reductions to day-ahead *imports*; different measures will be necessary in order to unlock more efficient real-time *export* activity.

Powerex thus encourages CAISO to build on these efforts to increase real-time economic intertie participation by removing the key barrier to new real-time economic displacement exports: the application of TAC and uplift charges to all export schedules. Powerex emphasizes that it believes that exports that are relied upon to serve firm load must continue to make an appropriate contribution to the cost of the CAISO transmission grid. Therefore, Powerex does not advocate a blanket elimination of TAC and uplift charges on all exports. But not all exports are relied upon to serve external firm load; some are used simply for economic displacement, allowing a higher-cost external resource to reduce its output when lower-cost energy is available for export from CAISO. It is precisely these types of economic displacement exports that can help avoid or reduce the need to curtail renewable production within the CAISO grid.

Powerex notes that the CAISO’s work on the CRR clawback rule modification appears to offer a concept that could possibly be used to distinguish economic displacement exports from exports relied upon to serve firm load. Specifically, real-time intertie export bids at a bid price equal to or less than the day-ahead price at that same intertie would be highly uncertain to clear the real-time market, and hence could not be relied upon to serve firm load. Such export bids could be identified as “economic displacement exports” and, if dispatched by the CAISO, would not be subject to TAC and uplift charges.

Importantly, Powerex believes such an approach would go a long way to encouraging new economic displacement exports in real-time, and would do so without significantly reducing TAC and uplift revenues from export activity. This is possible because (1) CAISO recovers less than 1 percent of its transmission revenue requirement from exports to begin with<sup>13</sup>; (2) a large portion of CAISO export activity is scheduled in the

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<sup>12</sup> *Id.* at 6; see also Cal. Indep. Sys. Operator Corp., Congestion Revenue Rights (CRR) Clawback Modification, Draft Final Proposal at 3 (May 16, 2016) (explain that, “[d]uring the intertie liquidity workshop held last year, two items were identified that could address real-time intertie liquidity: (1) modifications to congestion revenue rights (CRR) clawback rules and (2) exempting FMM export bids from transmission access and measured demand uplift charges”).

<sup>13</sup> CAISO, *Transmission Access Charge Options for Integrating New Participating Transmission Owners: Second Revised Straw Proposal* at 17 (Sept. 30, 2016) (showing that in 2015, TAC on exports totaled \$18 million, compared to total transmission revenue requirement of \$2.07 billion), available at <http://www.caiso.com/Documents/SecondRevisedStrawProposal-TransmissionAccessChargeOptions.pdf>

day ahead market, which would continue to pay TAC and uplift charges; and (3) real-time exports that are self-scheduled or priced above the day ahead price would also continue to pay TAC and uplift charges.<sup>14</sup>

Powerex also believes that this initiative is likely to require only limited CAISO resources, relative to many other initiatives under consideration, since the necessary changes would be limited to CAISO's settlement processes. The targeted elimination of TAC and uplift charges will support greater economic participation in CAISO's real-time market by external flexible resources in the near term, recognizing that EIM external resource participation—even under the most aggressive timelines—could not be implemented as quickly.

For the reasons discussed above, Powerex strongly supports prioritizing and pursuing initiative 6.1.1 *Export Charges* to support more efficient economic displacement exports in real-time by eliminating TAC and uplift charges on this activity. Powerex believes that this initiative has the potential to greatly reduce—if not fully eliminate—the curtailment of renewable resources for system wide conditions over the next few years.

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<sup>14</sup> Powerex believes it would greatly assist stakeholder dialogue in this initiative for CAISO to provide historic data on the magnitude of TAC and uplift charges associated with different categories of export activity, including day ahead exports, real-time exports where the bid price was greater than the day ahead price, and real-time exports where the bid price was less than or equal to the day ahead price.