

Energy Imbalance Market Draft Final Proposal

Submitted by	Company	Date Submitted
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Summary

Powerex is pleased to have this opportunity to provide these comments in response to the Energy Imbalance Market (“EIM”) Draft Final Proposal (“Draft Final Proposal”). Powerex’s comments provided herein are supplemental to its previous comments submitted in this stakeholder process.

Powerex remains supportive of the development of an EIM in western markets. A carefully constructed EIM can be expected to provide substantial market efficiency benefits, while enhancing reliability through increased situational awareness in both the day-ahead and real-time timeframes.

However, Powerex remains deeply concerned with several key design elements in the CAISO/PAC EIM initiative, including:

- The requirement that all suppliers in the multi-state, FERC-regulated, organized EIM market also be governed by the California Air Resource Board (“CARB”), which is a state regulatory agency;
- The resource-sufficiency framework, which inappropriately calculates “forecasted energy neutrality” as opposed to “capacity neutrality”;
- The only capacity test is the flexi-ramp sufficiency test, which occurs too late to protect reliability and is based on inaccurate “historic averages” of capacity requirements;
- The “free CAISO transmission” proposal, which is both discriminatory and disruptive to wholesale energy and transmission markets;
- The transmission access charge reciprocity framework proposal, which will lead to reduced CAISO and PacifiCorp third-party transmission revenues and increased costs to native load, by allowing “free wheel-throughs”; and
- The application of local market power mitigation to all suppliers, which will reduce EIM participation and liquidity.

In addition to these concerns, Powerex believes there are numerous seams and implementation issues that have yet to be resolved, including many that have not yet been raised in the stakeholder process thus far. Both the number and complexity of these unresolved issues are greatly expanded by the tremendous differences between the bilateral OATT market design and the LMP market design in which PacifiCorp and the CAISO, respectively, will continue to

operate. In Powerex's view, the CAISO, both in this stakeholder process and in its related Full Network Model Expansion initiative, continues to take the approach of largely ignoring the OATT framework that will continue to exist outside the CAISO footprint. This approach not only serves to undermine the credibility of this EIM initiative as a balanced, collaborative approach to regional market design, but it will undoubtedly lead to numerous unforeseen and unintentional consequences both within and outside CAISO markets.

Powerex understands and supports PacifiCorp's objective of achieving a timely implementation of an EIM within its geographical footprint. A carefully designed centralized nodal dispatch of the vast PacifiCorp region will undoubtedly provide efficiency benefits. Powerex also greatly respects the abilities and willingness of the CAISO to contribute towards achieving this objective.

However, given the concerns repeatedly raised by stakeholders, Powerex strongly recommends that PacifiCorp and CAISO reduce the scope of Phase 1 of the EIM to the PacifiCorp footprint only (*i.e.*, defer implementation of a joint dispatch between PacifiCorp and CAISO in real-time). This will afford additional time for stakeholders to work through the myriad of unresolved issues related to governance, carbon, transmission, seams and implementation—issues that largely arise only under an EIM implementation that includes inter-BA transfers. Reducing the scope of Phase I would secure many of the efficiency gains from re-dispatching generation in the PacifiCorp region while greatly reducing the risk of unintentional outcomes and increasing the likelihood of success in the FERC approval process.

CAISO's Resource Sufficiency Framework and Flexible Ramping Requirement are woefully inadequate to prevent "capacity leaning," with serious reliability and efficiency consequences.

Powerex understands the CAISO's approach to addressing stakeholders' concerns about leaning, as described on the September 30, 2013 CAISO EIM stakeholder conference call, as follows:

- 1) In the day-ahead timeframe, the CAISO will test whether each EIM Entity has sufficient *forecasted energy* to meet *forecasted load*. Critically, this CAISO-proposed resource-sufficiency test will be conducted from an energy perspective only, not from a capacity perspective.
- 2) The CAISO will *advise* EIM Entities whether they pass or fail this "energy only" resource-sufficiency test. No consequences whatsoever will be applied to EIM Entities that fail this test.
- 3) In real-time, the CAISO will couple this "energy only" resource-sufficiency test with a flexible ramping-up test. This test is intended to ensure that each EIM Entity has the ability to meet its own potential upward variations in load and/or downward variations in generation resource output. Importantly, the real-time flexible ramping-up test will be the only capacity-based test applied.
- 4) The real-time flexible ramping-up test will largely be based on historic average statistics of how much flexible ramp has been required to support various resources, load

fluctuations, import curtailments, etc. CAISO will block transfers between an EIM Entity's footprint and the remainder of the CAISO/EIM footprint for any EIM Entity that fails this real-time incremental ramping resource-sufficiency test.

- 5) The CAISO will apply escalating penalties for load under-scheduling and load over-scheduling to discourage inaccurate load scheduling.

Powerex and several other stakeholders have repeatedly raised concerns with this approach. The CAISO's response to these repeated concerns continues to be largely "off-topic", with its responses to these concerns focused on unrelated issues such as penalties for load over-scheduling.

Powerex reiterates its concerns here. To illustrate, Powerex contrasts the CAISO's proposed approach to the elements of a more appropriate capacity-based approach, as follows:

First, any resource-sufficiency framework should be from a capacity perspective, not from an energy perspective. In contrast to a robust *capacity-based* resource-sufficiency test (as applied in the Southwest Power Pool's ("SPP's") EIM design), which ensures sufficient committed capacity to meet expected load, the CAISO's version simply attempts to test whether an EIM Entity expects it will have sufficient energy to meet forecasted load. For example, under a capacity-based approach, an EIM Entity would be required to have a combination of sufficient baseload generation, dispatchable generation and capacity-backed imports to meet its expected load with a high degree of confidence. Under the CAISO's energy-based approach, an EIM Entity could simply rely on a day-ahead forecast of its VERs or on a forecast of curtailable import deliveries, which may or may not show up, to meet its expected firm load obligations. The CAISO approach does very little to ensure sufficient capacity is committed to meet expected next-day firm load obligations. This is an open invitation to rely on the EIM to supply the shortfalls in resources that will inevitably arise. Nothing in the EIM proposal assures the capacity will be available to supply such shortfalls. Moreover, the under- and over-scheduling penalties are directed at scheduling of *load*, and hence do not address the accuracy of scheduling of resources.

Second, any resource-sufficiency framework must be applied both in day-ahead and in real-time (as applied in SPP's EIM design), with material consequences for EIM Entities that fail either of these tests. Powerex suggested in the CAISO stakeholder process a series of escalating consequences for EIM Entities that repeatedly fail the day-ahead resource sufficiency test. The CAISO proposes no such consequences, and instead proposes to simply advise EIM Entities whether they passed or failed.

Third, the CAISO proposes a real-time flexible ramping-up requirement, but proposes to only apply this standalone capacity-based requirement in real-time. As previously discussed, the failure to have a robust capacity-based framework on a day-ahead basis leaves too little time to take corrective actions (such as the start-up of additional generation units).

Fourth, as discussed on the stakeholder call, the CAISO proposes to calculate the flexible ramping-up volumetric requirement based largely on historic patterns of the ramping-up needs for each EIM Entity—i.e., historic curtailments rates to imports, historic generation deviations

from schedules, and historic load deviations from schedules. While the CAISO has proposed incentives to ensure that load is generally scheduled accurately—and hence expected load deviations may reasonably be forecasted based on historic trends—the same incentive framework is not proposed by the CAISO in regards to accurate Variable Energy Resources (“VER”) generation scheduling or accurate import scheduling. As repeatedly identified by Powerex and other stakeholders, the ability and incentives for an EIM Entity to overstate VER generation and/or to rely on curtailable imports to meet its firm load obligations in any given hour is left unaddressed by the CAISO’s proposed resource-sufficiency and flexible ramping-up elements. EIM Entities can, and should, be expected to develop strategies to lean on the CAISO/PAC footprint through scheduling VER output above forecast and/or relying on curtailable imports to meet their firm load obligations—particularly in the hours where capacity is of highest value. During these hours, when the respective VER output or imports inevitably underperform by a greater quantity than the flexible ramping-up capacity required by the CAISO (based largely on historic averages), the CAISO will dispatch CAISO and PacifiCorp resources to make up the shortfall. Importantly, it is during these very hours of capacity scarcity that reliability risk is greatest and the consequences of allowing “capacity leaning” on the CAISO/PacifiCorp systems through overstated VER quantities and overstated import quality are most profound.

Fifth, the CAISO has significant deficiencies in its own market design and its practices related to resource sufficiency, which result in the CAISO periodically relying on the real-time market to meet its own firm load obligations. For example, in an effort to increase import liquidity in its day-ahead market, the CAISO does not require e-Tags for day-ahead import supply and does not meaningfully differentiate between firm, unit contingent, and non-firm import supply. As a result, the CAISO experiences significant curtailments to import schedules that were not originally identified as non-firm or interruptible. In effect, by choosing to allow its importers to “capacity lean” on the CAISO grid today, the CAISO is trading the increased reliability risk and cost associated with import curtailments in exchange for lower day-ahead market-clearing prices on its interties. Not only is this an inappropriate approach for the CAISO to pursue, it leads to unintended consequences in its own markets, such as real-time price spikes and increased uplift costs.

This reliability-versus-liquidity tradeoff is occurring today, as evidenced by both the increased volumes of curtailable imports being delivered to CAISO, treated by the CAISO as firm or unit contingent supply, and by the CAISO’s recent reliability concerns over high import delivery failures. For illustrative purposes, Powerex understands that as recently as the high load day of June 28, 2013, the CAISO experienced real-time challenges whereby its operators had to “skew” its real-time HASP dispatch to make up for day-ahead and HASP physical import awards that were not delivered—by quantities of 1000 MW or more.¹ The CAISO presented a summary of that day, as follows:

¹ See CAISO Market Performance and Planning Forum, July 30, 2013, at Slide 7, *available at* http://www.caiso.com/Documents/Agenda-Presentation-MarketPerformance-PlanningForumJul30_2013.pdf.

- Peak load occurred on June 28 at 45097 MW.
- There were adequate supply offered in both DA and RT to meet demand.
- One area of concern is the amount of import declines and curtailments in real-time (1000 MW).
- Additional imports and internal generations would be required to meet real-time system demand.
- Incurred high RTCO.

On that day, PacifiCorp was likely also experiencing very high loads; under an EIM with CAISO/PAC transfers enabled, the EIM dispatch algorithm may have dispatched PacifiCorp's system to solve this CAISO resource insufficiency —at a time when PacifiCorp likely had limited additional resources available. This illustrates the potential for insufficient resources to meet PacifiCorp's legitimate real-time imbalances, due to the increased EIM demand placed on PacifiCorp's resources associated with CAISO import failures, unless protective measures are put in place. Just like we believe it is improper for participants in an EIM Entity to "lean" on the EIM capacity within PacifiCorp, it is also improper for CAISO to "lean" on generation in PacifiCorp via the joint CAISO/PAC real-time dispatch.

The declines and curtailments experienced on June 28, 2013 are not an isolated occurrence. A review of public OASIS data reveals regular deliveries of supply that is known to be subject to interruption (outside of qualifying contingency events), without a corresponding increase in the CAISO capacity commitments that would be expected if such supply was identified as non-firm. In other words, it appears participants are responding to the CAISO's tolerance for accepting curtailable supply as firm or unit contingent energy products in its day-ahead and real-time markets. Not only is CAISO not charging such imports for additional capacity, it appears that CAISO is not even carrying additional capacity to protect itself against the delivery failures it is inviting. In contrast, Powerex understands PacifiCorp prudently backstops both its VER resources, as well as its interruptible imports, with sufficient capacity to protect the reliability of its system.

Powerex urges CAISO and PacifiCorp to develop a robust day-ahead and real-time, capacity-based resource-sufficiency test applicable to all EIM Entities, including both PacifiCorp and the CAISO, prior to enabling any transfers between EIM Entities. As Powerex suggested on the September 30th, 2013 stakeholder call, perhaps including SPP staff in this discussion would be beneficial by providing all stakeholders with a clear understanding of the differences in approach between SPP's EIM design and the CAISO/PAC EIM proposal.

The CAISO's carbon proposal remains inconsistent with elements of CARB's Cap and Trade program, while raising serious legal issues.

Powerex strongly disagrees with the CAISO/PAC EIM approach to carbon. Powerex has extensively discussed in the CAISO EIM stakeholder process its concerns with the CAISO's proposed algorithm, which results in efficient resource shuffling. Powerex views this approach as being inconsistent with the original intent of the CARB program and inconsistent with the carbon treatment of asset controlling suppliers such as BPA and Powerex.

Powerex has also highlighted both the legal issues and liquidity issues associated with CAISO's proposal to require all generators participating in the multi-state, FERC-jurisdictional EIM market to also be subject to the jurisdiction of CARB—a state regulatory agency. Constitutional concerns regarding the extra-territorial effect of California's Cap-and-Trade program on energy markets in the Western Electricity Coordinating Council ("WECC"), and on interstate and cross-border trade in wholesale power, have been discussed in the legal community since the launch of the program in January 2013—well prior to the implementation of an EIM. However, these legal concerns with the California Cap-and-Trade program are significantly compounded by CAISO's use of its interstate reach in the context of a FERC-regulated, multi-state EIM program to support California's GHG program through selective dispatch and allocation of resource output based on a bid component reflecting carbon intensity. More specifically, the CAISO will be requiring out-of-state generators who wish to participate in the multi-state EIM to be governed directly by CARB as a pre-condition of submitting an offer for energy in the EIM. Put another way, a participant will be exposed to potential carbon-allowance obligations merely as a result of a submission of a generator offer, not as a result of a conscious decision by the participant to deliver power into the state of California.

Not only does this proposal raise serious legal concerns, but conditioning participation in the multi-state EIM on an ability and willingness to subject one's out-of-state resources and activities to CARB's jurisdiction can be expected to significantly curtail both short-term and long-term liquidity in the EIM. As expressed in the CAISO EIM stakeholder call on September 30, 2013, this requirement will result in some participants choosing to not offer any supply into the CAISO/PAC EIM.

Powerex's concerns should not be misunderstood. Powerex is supportive of CARB's Cap-and-Trade program. Powerex also, to date, has not opposed the CAISO's modifications to its tariff to facilitate CARB's ability to charge carbon allowances from participants who *choose* to import power into the state of California. However, Powerex is extremely concerned that CAISO's inclusion of the Cap-and-Trade program in the EIM design goes well beyond what would be expected in a multi-state organized market. Moreover, CAISO's role in dispatch and allocation of EIM generation will likely create market distortions that are even greater than could be expected from the CARB program standing alone, and will compound the legal issues already inherent in that program, particularly for imports.

Perhaps the most troubling aspect of this carbon approach is that it is fundamentally exclusionary, with participation in the EIM program limited to entities that are both willing and able to submit to CARB's jurisdiction for purposes of registration, participation, and oversight in the Cap-and-Trade Program. CAISO thus preconditions an entity's participation in a FERC-regulated interstate program on submission to a state-regulatory regime. This is an impermissible intrusion into FERC's exclusive jurisdiction over interstate transmission and wholesale power markets. Moreover, such a selective approach to EIM participation runs counter to FERC open access principles for organized markets.

Powerex urges the CAISO and PacifiCorp to reconsider their carbon proposal. Adopting Powerex's proposal to limit Phase 1 implementation solely to re-dispatch within PacifiCorp's

footprint, with no inter-BA transfers, would permit the EIM to be implemented while these complex carbon-related issues are resolved.

Powerex supports PacifiCorp’s requirement for firm transmission rights for generation and load in the PacifiCorp footprint, including remote network resources.

Powerex strongly supports PacifiCorp’s revised proposal to require sufficient firm transmission rights for all EIM flows within its BAAs, as an initial approach. This approach will ensure that both generators and loads located in the PacifiCorp BAA have procured, and paid for, sufficient transmission rights under the PacifiCorp OATT framework for all of their associated EIM flows. This approach also mitigates the risk of lower priority rights in the EIM flowing ahead of higher priority rights that may have been curtailed under the OATT scheduling and curtailment framework in the same delivery period.

Powerex has recommended that PacifiCorp revisit this issue, with an eye toward expanding utilization in the EIM to non-firm transmission use, if and when elements have been developed to protect and/or compensate firm rights-holders for EIM flows on non-firm transmission rights (on paths in which a higher priority rights-holder has been restricted from utilizing their full transmission capacity). In the meantime, Powerex has recommended that PacifiCorp continue with its existing unauthorized usage charges to discourage participants from violating the PacifiCorp “sufficient firm transmission rights” proposal. Changes to the unauthorized usage charges, such as considering applying the non-firm transmission rate, should accompany future EIM design changes that permit non-firm transmission use in the EIM.

Powerex notes that from a CAISO transmission customer’s perspective, there no longer will be “transmission access charge reciprocity” between the CAISO and PacifiCorp. This is perhaps best illustrated with the following table of applicable EIM transmission costs under the current proposal:

Generator Location	Load Location	PacifiCorp OATT Transmission Costs	CAISO TAC Transmission Costs
PAC	PAC	Yes	No
CAISO	CAISO	No	Yes
PAC	CAISO	Yes	Yes
CAISO	PAC	Yes	No

In the first three examples above, PacifiCorp and CAISO appropriately charge for use of their respective transmission systems. In contrast, in the fourth circumstance - where energy generated in the CAISO grid is delivered to load in PacifiCorp’s territory, and hence both the PacifiCorp and CAISO transmission systems are used to deliver the power, only PacifiCorp transmission charges apply. Put another way, PacifiCorp’s load customers can consume power transmitted from generators located in the CAISO grid without paying *any* CAISO transmission costs, while CAISO’s load customers must pay PacifiCorp’s transmission costs when

consuming power transmitted from generators located in the PacifiCorp transmission system. There simply is no access charge reciprocity between the CAISO and PacifiCorp.

Powerex notes that the above statements are true, regardless of whether it is the generator or load customer that pays the transmission costs associated with any particular delivery. They are also true, regardless of whether the PacifiCorp transmission is contracted for on a long-term basis or on a short-term basis. The simple fact is that PacifiCorp will be appropriately charging for all uses of its transmission system while the CAISO will not.

The current transmission proposal, as applied between CAISO and PacifiCorp, can be most accurately described as “free CAISO transmission” for PacifiCorp’s EIM exports out of the CAISO.

Powerex strongly disagrees with PacifiCorp and CAISO’s proposal of a proposed transmission access charge reciprocity framework between EIM Entities.

In essence, PacifiCorp and CAISO are proposing that the EIM operate under a “license plate” transmission design framework—one in which EIM participants only pay transmission rates in their “home” transmission systems, but are then free to flow across the broader CAISO/EIM footprint, without additional transmission costs. This is in contrast to the existing transmission design frameworks across the Western Interconnect (in all temporal markets), which can generally be described from a regional perspective as a “postage-stamp” transmission framework—one in which participants pay incrementally for the use of each applicable transmission provider’s system, resulting in generally higher transmission costs for longer distanced deliveries.

While Powerex does not oppose consideration of a “license plate” transmission design framework in western markets and/or the reduction or elimination of rate pancaking, this is simply a different issue and need not be packaged with the EIM proposal. Powerex strongly opposes the manner in which the CAISO and PacifiCorp seek to achieve these objectives and the narrow applicability of the CAISO/PAC proposal to a single temporal market—the CAISO/PAC EIM.

In Powerex’s experience, reducing or eliminating transmission rate pancaking associated with “postage-stamp” regional transmission frameworks, such as those currently in place across the western interconnect, are generally achieved in one of two ways:

- 1) Consolidation of two or more transmission providers’ rate frameworks into a single OATT or Transmission Access Charge (“TAC”) rate; or
- 2) Holistic re-design of multiple transmission providers’ tariffs and rates from a “postage-stamp” framework to a “license-plate” framework.

Importantly, whether reduced transmission rate pancaking is achieved through geographical transmission footprint consolidation (such as those efforts underway to consolidate the Sierra Pacific and Nevada Power transmission footprints) or through transmission re-design into a

regional “license plate” transmission framework, the process and approach utilized in achieving these outcomes consistently includes the following elements:

- 1) New transmission rates are applied across all temporal energy trading and scheduling markets, to prevent “shifting” of market activity which leads to well-documented undesirable and unintended outcomes;
- 2) Extensive stakeholder processes are developed within the construct of transmission tariff re-design processes and/or transmission rate case proceedings, in which all stakeholders’ competing interests can be heard and considered; and
- 3) Extensive negotiations occur, culminating in potential ongoing transfer payments between transmission providers, congestion revenue allocations and/or other compensation mechanisms to deal with expected shifts in revenue between transmission providers, equity issues associated with existing transmission investments, as well as go-forward transmission investment incentives (for example, transfer payments between transmission providers may be required to compensate for reduced “wheel-through” revenues under a move from a postage stamp framework to a license-plate framework).

In contrast to an approach featuring the above-listed elements, the CAISO and PacifiCorp propose to unilaterally implement a license plate transmission design only in the EIM—to be applied to a single temporal market, outside of their respective transmission tariff design and rate case processes, and without the extensive negotiations and transfer payments necessary to deal with revenue shifts, equity issues associated with existing rights, and go-forward investment signals.

As previously described, this approach can be expected to result in:

- 1) Shifting of EIM Entities’ existing day-ahead and real-time trading and scheduling activities into the EIM to take advantage of the CAISO’s waiver of TAC charges;
- 2) Reductions in “wheel-through” revenues, particularly for large intermediary transmission providers such as CAISO and PacifiCorp; and
- 3) Distortions to both the static and dynamic efficiency of western wholesale energy and transmission markets through preferential transmission pricing in the narrow EIM temporal market.

For example, under the proposed design, there would be a strong disincentive for PacifiCorp to continue to export energy out of the CAISO grid in the day-ahead markets (to economically displace its own resources) where it pays a \$9 TAC, when it can avoid this charge by waiting until the EIM to receive such energy. Not only would this result in a shift of PacifiCorp’s CAISO exports into the EIM market, but PacifiCorp and other EIM Entities would also have a preferential cost advantage in the procurement of CAISO energy, ahead of other CAISO exporters. This would lead to inequitable and inefficient wholesale energy market outcomes in the broader region outside the CAISO.

PacifiCorp's and/or CAISO's third-party transmission revenues should also be expected to decrease. For example, a BA located on the boundary of PacifiCorp's system that regularly relies on PacifiCorp OATT transmission to facilitate its resource-optimization activities in the day-ahead and real-time markets would be strongly incented to join as an EIM Entity to gain access to free PacifiCorp (and CAISO) EIM transmission rights. This incentive would be even greater for smaller BAs with little, if any, third-party revenues at risk under the "free transmission access charge reciprocity" proposal. This could largely result in PacifiCorp providing such EIM Entities with free wheel-through transmission—with little, if any, offsetting benefits for PacifiCorp's transmission customers and ratepayers. In fact, it could incent the formation of new BAs in order to gain access to free PacifiCorp and CAISO transmission rights.

Powerex continues to urge the CAISO and PacifiCorp to abandon their "free transmission access charge reciprocity" EIM proposal, to apply their existing transmission tariff and rate designs to the EIM, and to pursue any efforts to reduce transmission rate pancaking in appropriate, holistic, and comprehensive regional transmission rate design processes.

Powerex continues to oppose the broad application of local market power mitigation in the EIM

Powerex understands the CAISO has decided to exempt inter-BA transfers from local market power mitigation measures, deeming such paths to be competitive. Powerex believes this is a step in the right direction. However, Powerex urges CAISO and PacifiCorp to go further and consider applying local market power mitigation only to select transmission providers' resources (such as PacifiCorp). More specifically, Powerex believes it is appropriate to apply local market power mitigation only in circumstances where the respective transmission provider is settling its OATT tariff services, such as Schedule 4 and Schedule 9, at EIM prices. It is under these narrow circumstances that a participant with market-based rate authority has a potential obligation to offer its resources at cost-based prices in the EIM. In all other circumstances, applying price mitigation measures to suppliers who are free to sell their supply into competitive wholesale energy markets will only serve to reduce EIM liquidity.

Conclusion

Given the significant concerns summarized above, Powerex recommends that PacifiCorp and CAISO limit the scope of the Phase 1 implementation of an EIM to the PacifiCorp footprint until these issues can be fully explored and resolved through a more robust and thorough stakeholder process.

Powerex has not had sufficient time or opportunity to fully consider all of the elements contained in the CAISO's EIM Proposal, given both the accelerated timelines and tremendously broad scope of this initiative. Powerex appreciates the opportunity to comment on the CAISO's draft final proposal and looks forward to additional stakeholder sessions to discuss these important regional issues.