### Comments of Powerex Corp. on Draft 2018 Policy Initiatives Catalog

Submitted by	Company	Date Submitted
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Powerex appreciates the opportunity to provide comments on CAISO's November 8, 2017 draft 2018 Policy Initiatives Catalog ("Draft Catalog"). The comments are organized by the associated section(s) of the Draft Catalog.

#### Imbalance Conformance Enhancements (5.8)

CAISO explains that this initiative would clarify the CAISO's authority to conform for imbalances in both the day-ahead and real-time markets and enhance the load bias limiter (now referred to as "the conformance limiter").

Powerex supports convening a stakeholder initiative to further discuss CAISO's use of the load bias limiter. While Powerex recognizes that system operators should have the ability to enter manual adjustments to automated load forecasts where necessary to ensure their accuracy, Powerex is concerned that the existing limiter is being applied in a manner that is unconnected to whether a particular adjustment has the effect of making a forecast more or less accurate. To the contrary, it appears that the application of the limiter is based exclusively on the price impact associated with the load forecast adjustment. In particular, a load adjustment that triggers scarcity pricing is deemed to be inaccurate and limited, whereas a load adjustment that does not trigger penalty prices is deemed to be accurate.

Powerex is concerned that the existing application of the load bias limiter has the potential to undermine accurate price formation by reducing price levels and price volatility, muting short-term price signals and increasing the need to rely on out-of-market mechanisms to preserve reliability. It is important to recognize that all price formation practices have the potential to either favor or disadvantage specific participants and stakeholders; some participants would benefit from higher prices or greater volatility, while others would benefit from lower prices and reduced volatility. It is therefore critically important that market enhancements pursue *accurate and efficient* prices that ensure CAISO has access to the right resources at the right locations at the right time.

For these reasons, Powerex encourages CAISO to convene a stakeholder process to comprehensively review the need for, and the proper use of, a load bias limiter. Among other things, Powerex believes that this process should consider:

- The nature of the problem that the load bias limiter is trying to address;
- Whether a load bias limiter is needed;
- The real-time price level and price volatility impacts of the current load bias limiter, including an examination of the settlement impacts on EIM prices and EIM transfers; and
- If a load bias limiter is needed, what improvements can be made to ensure that it does not distort market prices and price volatility while allowing it to achieve its purported objectives in a targeted manner.

### Intertie Deviation Settlement (5.9)

The Draft Catalog cites "recent operational and market concerns with undelivered imports and exports,"<sup>1</sup> and explains that this initiative would explore whether the existing "decline charge" should be changed in order to incentivize intertie resources to deliver energy that has been awarded.

Powerex agrees that physical delivery of market awards is necessary for the safe, reliable, and efficient operation of the CAISO grid. Moreover, Powerex believes that failures to perform on import awards in CAISO's markets can diminish the effectiveness of the CAISO's Resource Adequacy ("RA"), Flexible Resource Adequacy ("Flex RA") and Energy Imbalance Market ("EIM") resource sufficiency frameworks. If the supply included in these assessments does not actually perform, then the reliability that these programs are intended to ensure may be jeopardized.

In Powerex's view, however, addressing this issue requires going beyond simply applying penalties for non-performing import awards. Powerex believes that the stakeholder initiative should first examine the underlying reasons for delivery failures. More specifically, it would be valuable for CAISO to provide data on delivery failures, including the total volume of import and export failures broken down by:

- Market (DA, HASP, RTPD)
- Hour of the day

<sup>&</sup>lt;sup>1</sup> Draft Catalog at 14.

- Whether or not the import was under a Resource Adequacy contract
- Whether or not the import had submitted an e-Tag.

The relative magnitude of delivery failures can also be compared between (1) all days in a historical review period; and (2) the top ten peak load days within that period. This comparison can help identify whether delivery failures are random, or whether they are associated with certain conditions.

An important related analysis would be for CAISO to assess the impact of nonperforming imports on the resource sufficiency evaluation for the CAISO BAA. More specifically, how much of the import awards that ultimately failed to perform were included as supply resources for the CAISO BAA for purposes of the resource sufficiency evaluation? Would excluding these non-performing intertie resources have caused the CAISO BAA to fail one or more of the tests that are part of the resource sufficiency evaluation?

Powerex believes that the above data will corroborate that delivery failures on intertie awards are the result of two distinct factors:

- First, there will be some level of import or export delivery failures due to circumstances beyond the market participant's control, such as real-time transmission outages or de-rates resulting in schedule curtailments after T-20.
- Second, there will be import delivery failures associated with sellers that have made energy offers in the CAISO's markets prior to securing supply and that are unable to secure supply in the bilateral spot markets to fulfill their CAISO market award commitments. That is, the offer into the CAISO market reflected a speculative offer rather than an offer of supply already available to the seller at the time of the offer submission deadline.

It is important to distinguish between these two underlying causes for delivery failures when exploring appropriate enhancements. For example, simply applying a financial penalty on all delivery failures may reduce activity with a higher risk of non-performance (*i.e.*, speculative intertie sales) but it also will inevitably penalize physical participants for transmission outages or derates entirely outside of their control or foresight. Penalizing physical market participants would do nothing to reduce delivery failures, but it would increase the cost and risk of offering physical supply to the CAISO. Powerex believes that a more effective approach would be to pursue enhancements that allow CAISO to more accurately distinguish between import awards that are supported by physical supply and transmission arrangements from those import awards that are not. For example, when CAISO performs its reliability-based assessments—including the Residual Unit Commitment ("RUC") and real-time resource sufficiency evaluations—

import awards for which no supply and transmission information has been communicated to CAISO (*i.e.*, awards that have not been e-Tagged as of the time of the assessment) would be appropriately excluded. In addition, it may be appropriate to apply financial penalties on market participants with awards that are never e-Tagged at all, or are not e-Tagged by the assessment timelines for the RUC and the EIM resource sufficiency evaluation. However, physical intertie supply that is timely e-Tagged, but curtailed within the operating hour, would not be subject to such penalties in recognition that the non-performance is the result of circumstances beyond the participant's foresight or control.

### EIM Default Energy Bid Option (6.1.1)

It is increasingly evident to Powerex that the existing options for calculating Default Energy Bids ("DEB") are poorly suited—and in some circumstances, may be completely unworkable-for energy-limited resources located outside the CAISO BAA. Powerex believes this is largely a result of the current DEB options being designed, many years ago, for resources located exclusively inside the CAISO BAA-a full RTO/ISO market. Thus, the current DEB options are focused on attempting to estimate a precise marginal cost value for each resource's output, based largely on the resource's variable production cost, which is relatively stable within the day, and changes from day-to-day in relatively predictable ways (e.g., based on changes to the price of natural gas). But for sellers of resource output located outside the CAISO BAA, opportunity costs in addition to variable production costs are an important consideration, rendering the current DEB options less workable. This is because, unlike resources located inside the CAISO BAA, sellers of external resource output typically have numerous opportunities to sell that output in various alternative geographic markets. Conditions in these markets can change significantly from one hour to the next, and Powerex is not aware of any available data that would enable the range of these real-time bilateral market opportunities to be accurately forecast ahead of time. Hourly opportunity costs are especially difficult to estimate for complex, multi-facility coordinated hydro systems with substantial storage. These systems not only face multiple different geographic markets in the current delivery hour, but must consider what these opportunities might look like in all relevant future hours and in all available geographic markets, as well as what the future residual capabilities of the system might be, considering future native load obligations and myriad of constraints and variables. These factors make it unrealistic for any externally administered formula to accurately estimate the hourly marginal cost for energy-limited resources located outside the CAISO BAA.

The need to explore DEB options that are better suited to energy-limited resources outside of the CAISO BAA is further evident by the strong support for this initiative expressed by Idaho Power Company and Seattle City Light. These entities, along with Powerex, will participate in the EIM supported by energy-limited hydro resources. PacifiCorp also separately explained how DEBs calculated under the existing options have led to its hydro resources being inefficiently dispatched. Powerex believes a workable DEB option is urgently needed for energy-limited external resources in order to help ensure those resources are efficiently utilized, and that participants are not forced to sell limited energy at uneconomic prices, as both of these risks are likely to discourage voluntary participation in the EIM.

Powerex notes that other organized markets have implemented approaches to mitigating local market power while providing sellers important—but not unlimited—flexibility to submit offers that reflect their own assessment of marginal costs as they evolve from hour to hour. Powerex believes these alternative approaches may be well-suited to being applied as a DEB option for energy-limited resources located outside of the CAISO BAA.

### Hourly EIM Resource Sufficiency Evaluation (6.1.2)

Powerex supports pursuing this initiative, as it believes there is a need to make important improvements to the resource sufficiency evaluation in order to ensure it meets its objectives. Powerex provided a more extensive discussion of these issues in its policy initiative catalog submission on September 15, 2017.<sup>2</sup>

Powerex believes the purpose of this initiative should <u>not</u> be to revisit the core principles of the EIM's resource sufficiency framework. More specifically, Powerex does not believe this initiative should seek to either tighten or relax the resource sufficiency requirement, as doing so would inevitably "create winners and losers" and depart from the clear requirements that have been articulated since the start of the EIM. Moreover, Powerex does not believe this initiative should revisit the freezing of EIM transfers as the consequence of failing the resource sufficiency evaluation, since financial penalties alone are unlikely to be effective protection against leaning on capacity or flexibility in the EIM. Rather, Powerex believes this initiative should assess the performance of the existing resource sufficiency tests, and identify improvements to the manner in which the tests are applied. More specifically, Powerex recommends that:

• CAISO provide a valuable starting point for this initiative through a retrospective analysis comparing (1) the quantity of flexible ramping capability that each EIM

<sup>&</sup>lt;sup>2</sup> See Comments of Powerex Corp. on 2018 Policy Initiatives Catalog (September 15, 2017), at 6-8. *Available at:* <u>http://www.caiso.com/Documents/Powerex-SubmissionForm-</u> <u>2018PolicyInitiativesCatalog.pdf.</u>

entity was required to have in order to pass the resource sufficiency test; and (2) the maximum 15-minute or 5-minute imbalance energy required by that EIM entity in each hour. This historical analysis could then be summarized by BAA, by operating hour of the day, or other relevant variables. To the extent that passing the *ex ante* tests did not result in <u>actual</u> resource sufficiency in approximately 95% of intervals, it would be an indicator that improvements are needed to the manner in which the tests are performed. A finding that some BAAs have actual energy imbalances that are significantly below their resource sufficiency requirements, and that this occurs more frequently than expected, may indicate that the current test is requiring the BAA to carry more resources than necessary—and at a higher cost than necessary—to prevent leaning in the EIM. Conversely, a finding that some BAAs have actual energy imbalances that the current test is requirement, and that this occurs more frequently than expected, may indicate that may indicate that the current test is requirement, and that this occurs more frequently than expected, may indicate that the current test is requirement, and that this occurs more frequently than expected, may indicate that the current test is requirement, and that this occurs more frequently than expected, may indicate that the current test is requiring the BAA to carry fewer resources than are necessary to prevent leaning in the EIM.

- CAISO consider improving the workability of the resource sufficiency tests to reduce false positives and false negatives. This would include examining, and potentially revising, the timelines when EIM Entities receive binding resource sufficiency volumetric requirements to ensure EIM Entities have sufficient time to take corrective actions to pass the applicable resource sufficiency tests.
- CAISO consider revising the flexible ramping sufficiency test and the capacity tests such that each test isolates the attribute being tested. By making the tests more specific, the consequences of failing the test (*i.e.*, freezing or eliminating EIM transfers) can be more narrowly tailored to the identified deficiency. This would improve the accuracy of each test, ensuring that freezing of EIM transfers only occurs when an EIM has insufficient resources, and is limited only to the affected intervals, while also ensuring that EIM entities with insufficient resources do not lean on the EIM.
- CAISO explore improvements to the manner the RS framework is applied to the CAISO BAA. The CAISO BAA is different than other EIM entities, in that it clears intertie bids through its organized market framework. CAISO has expressed concern regarding the failure of some of these intertie bids to physically deliver the awarded energy, particularly during days of tight conditions. Powerex therefore believes it is important to ensure that untagged intertie awards are not included as supply resources in the RS evaluation of the CAISO BAA, as their inclusion likely overstates CAISO resources and may inadvertently result in CAISO leaning on EIM when those intertie awards ultimately fail to perform.

## Over/Underscheduling Load Enhancements (6.1.4)

#### This entry appears duplicative of (6.1.23)

Powerex believes it would be valuable for CAISO to provide additional data and analysis to better understand this issue, and to gauge the potential benefits of pursuing a stakeholder process. In particular, it would be beneficial to better understand the nature of the load forecast errors, and whether these appear to be systematic errors in the forecasts, such as time of day or conditions in the EIM entity BAA or in the CAISO BAA. Powerex believes that before considering changes to either the application or distribution of penalties for over- or under-scheduling load, it is appropriate to explore whether load forecasts themselves can be improved.

### Limiting EIM Energy Transmission Scheduled Resources Transfers (6.1.5)

This stakeholder initiative would explore functionality requested by Idaho Power Company, which would limit changes in total EIM transfers between EIM BAAs from one interval to the next. Powerex supports examining the issue raised by Idaho Power, and its proposed solution.

More broadly, Powerex believes it may be necessary and appropriate for this initiative to examine the need for EIM entities to express other types of BA-level constraints on total net imports or exports, to the extent such limitations are necessary for reliability purposes. For example, the CAISO BAA currently has a Southern California Import Transmission limit for its markets, in addition to (and distinct from) various specified limits on imports or exports on individual interties. Other entities participating in the EIM may require and/or benefit from similar functionality, and Powerex supports exploring such issues in this stakeholder initiative.

## Enhanced Participation of External Resources (6.1.17)

## The following comments also apply to 6.1.22 Bidding Rules on External EIM Interties

This initiative would explore enhancements to allow EIM participation by resources in BAAs that have not joined the EIM. Powerex continues to support exploring ways to enable greater resource participation in the EIM, provided this does not compromise the key design features of the EIM (*e.g.*, physical flow modeling, resource-specific visibility, etc.), nor confer advantages or disadvantages in a manner that is unduly discriminatory. Powerex recognizes that resources in the west face a range of different circumstances, some of which will be unique to those resources. Powerex supports finding ways to accommodate these circumstances to enable EIM participation to the extent possible.

It is unclear to Powerex whether this initiative or other approaches may be best suited to enabling additional EIM participation.

## EIM Transmission- and Wheeling-Related Proposals

These comments apply to the following initiatives: Potential EIM-Wide Transmission Rate (6.1.18), Equitable Sharing of Wheeling Benefits (6.1.20), and Third Party Transmission Contribution (6.1.21)

The above three initiatives are related to issues initially proposed in the 2017 stakeholder process on consolidated EIM enhancements. These proposals were ultimately removed from the scope of the 2017 stakeholder process. Two of these proposals appear likely to be challenging to design in a manner that does not undermine the efficiency benefits of the EIM. The proposal for third-party transmission contribution, while sound in principle, did not appear to offer near-term benefits in practice. Powerex does not believe these initiatives should be prioritized at this time.

# Export Charges (6.1.30)

Powerex agrees that CAISO export charges can present a hurdle rate that discourages otherwise economic export transactions. At the same time, Powerex believes that it is important that external entities that rely on CAISO exports to serve firm load continue to contribute to the cost of the CAISO transmission grid, just as entities that serve firm load within the CAISO BAA do. Powerex believes there are potential approaches that can eliminate charges for exports used for economic displacement purposes, while ensuring exports relied upon to serve external firm load continue to fund the embedded costs of the CAISO grid. One such mechanism is provided through participation in the EIM, where resource sufficiency requirements ensure that each participant is able to meet its firm load needs even without EIM imports from other BAAs, including imports from the CAISO BAA. Given the growth of the EIM and the entities expected to begin participating in the coming years, it is unclear whether eliminating export charges on real-time economy exports outside of the EIM should be prioritized at this time. That said, if export charges can be eliminated in a narrow manner (*i.e.*, only on real-time exports for economic displacement purposes), the change can be implemented in a timely manner, and it is expected to appreciably increase liquidity, Powerex may support such an enhancement.

## Extended Pricing Mechanisms (6.1.32)

As a general matter, Powerex believes that accurate price formation requires that LMPs reflect all marginal costs incurred at the time the dispatch decision is made. Otherwise, market clearing prices will not, in fact, reflect the price necessary to balance demand and supply, leading to the need for side payments to individual resources.

While there is much current debate in organized markets around including start-up and minimum load of *long* lead time units in LMP, it is increasingly recognized that start-up and minimum load costs should be viewed as marginal costs for *fast start* units. That is, for resources that incur start-up costs and minimum load costs between the time of the dispatch instruction and the dispatch interval in which the resource output is needed, these costs are appropriately viewed as "marginal" and should be reflected in LMPs.

Powerex supports CAISO convening a stakeholder process to examine price formation practices regarding start-up and minimum load costs in its markets. The stakeholder process would benefit from a review of the different approaches used in other organized markets, analysis of how CAISO price formation practices result in different outcomes from practices in western bilateral markets (including the magnitude of such differences), and examination of options available to ensure CAISO's price formation practices meet the dual objectives of:

- In each market interval, provide accurate price signals consistent with the instructed dispatch of resources; and
- Over the course of multiple intervals or hours, provide accurate price signals consistent with decisions to commit resources (*i.e.*, start up and operate at minimum load levels).

## Resource Adequacy Initiatives

#### Resource Adequacy Enhancements (6.3.1) and FRAC-MOO Phase 2 (5.2)

Powerex supports these stakeholder initiatives, as the RA and Flexible RA programs are the cornerstones of ensuring that CAISO has access to the resources necessary to reliably and safely operate the grid in real-time. As stated in the Draft Catalog, "The rapid transformation of the resource fleet to cleaner and more variable energy resources is exposing inadequacies in the current resource adequacy framework."<sup>3</sup> Powerex agrees that there are significant and growing gaps in these critical programs, and these gaps appear to be reflected in challenges in meeting peak load (such as during the heat wave that occurred in early September) and in maintaining reliability during large solar ramp hours.

Powerex believes that a comprehensive assessment of the RA and Flexible RA programs is necessary. The current FRAC-MOO Phase 2 initiative is pursuing precisely such an assessment for the Flexible RA program, including a holistic review of how

<sup>&</sup>lt;sup>3</sup> Draft Catalog at 28.

needs are quantified, how products to meet those needs are defined, and how the ability to provide the necessary products should be verified. Powerex supports CAISO conducting a similar comprehensive stakeholder process for the RA program. In particular, such a review should consider steps that support California's transition to a low-carbon grid through increased reliance on non-emitting resources. As California retires certain of its fossil resource fleet, enhancements to the RA and Flexible RA programs can help ensure these retiring in-state fossil resources are not simply replaced by new in-state fossil resources or by contracts with out-of-state existing fossil resources. One potential enhancement that Powerex suggests be considered in the stakeholder process is specifying requirements for Clean RA and for Clean Flexible RA.

Powerex notes that the type of comprehensive assessment discussed above will necessarily take time, and will involve both the CPUC and FERC. It is imperative that these stakeholder processes be planned to allow substantial engagement from stakeholders, CPUC, and CAISO staff. To the extent limited near-term enhancements are also needed in the interim, it may be advisable to consider pursuing those through a separate stakeholder process with a shorter timetable.

#### Day-Ahead Flexible Reserve Product (6.1.1)

Powerex supports the need for a stakeholder process to develop a day-ahead flexible reserve product. These enhancements are a necessary complement to the enhancements being developed under the FRAC-MOO Phase 2 initiative. More specifically, Powerex believes there is currently a gap in the day-ahead optimization that prevents it from fully recognizing the real-time flexible capacity needs of the CAISO grid. As a result, flexible resources may be scheduled to provide energy in the day-ahead optimization rather than being positioned to provide flexibility in the 15- and 5-minute markets. This gap could potentially work at cross purposes to the forward contracting requirements under the Flexible RA program. A day-ahead flexible reserve product would address this gap and allow the day-ahead optimization to more fully recognize the need to "hold back" resources to provide flexibility.

Powerex also believes there may be a significant quantity of resources located outside of the CAISO BAA that are willing and able to offer to provide flexible capacity beyond (as well as instead of) the quantity of energy they are able to offer into the day-ahead market. A day-ahead flexible reserve product would not limit the procurement of flexible capacity to the quantity of energy offered by a resource, and thus could expand CAISO's supply options to meet its combined energy and capacity needs.

Powerex supports coordinating the development of the day-ahead flexible reserve product with the consideration of changing the granularity of the day-ahead market from hourly schedules to 15-minute schedules (*15-Minute Day-Ahead Scheduling Granularity*)

(6.1.8)) and the combination of the CAISO RUC process with IFM optimization (*Combined IFM and RUC (6.1.7)*). The increased granularity will improve the day-ahead market's recognition of the need for flexible capacity to meet forecast intra-hour ramps, and hence may impact the manner in which the day-ahead flexible reserve product requirements are defined.

### Multi-Year Risk of Retirement (6.3.3)

This initiative would focus on extending CAISO's ability to issue a "risk-of-retirement" backstop procurement to more than a year in advance. Powerex encourages CAISO to defer any effort to expand its authority to engage in out-of-market procurement of—and make side payments to—resources, and instead focus on ensuring that its energy and capacity markets are sending efficient short-term and long-term price signals for the development and maintenance of resources that contribute to meeting system reliability needs. Ultimately, the need to rely on out-of-market procurement to prevent the retirement of resources needed for reliability means that energy and capacity markets are not appropriately valuing the services that these resources provide. Rather than expanding reliance on out-of-market procurement, Powerex believes that the appropriate way to address this issue is to focus on ensuring that all resources that contribute to reliability are appropriately compensated for the services that they provide such that reliance on out-of-market measures is no longer necessary.

## **Review of Maximum Import Capability (6.3.5)**

In the Draft Catalog, CAISO proposes an initiative focused on CAISO's existing maximum import capability ("MIC") framework. Among other things, this initiative would focus on reviewing the methodology for allocating MIC to market participants supplying RA.

Powerex supports convening a stakeholder process focused on the current MIC allocation framework. As Powerex has explained in previous stakeholder proceedings, Powerex believes that the existing MIC allocation process is flawed and impedes the efficient and least-cost procurement of RA capacity. Under the existing RA framework, the MIC mechanism is intended to ensure deliverability of RA imports by limiting the total RA contracts on each intertie to no more than the intertie's expected import transfer capability. Currently, in order to achieve this objective, the MIC of each intertie is allocated to LSEs through a 13-step process, largely based on an LSE's load ratio share, *in advance* of the procurement of RA capacity.

Unfortunately, there is substantial evidence that the current MIC allocation process is not working efficiently, and artificially constrains the ability of imports to satisfy RA needs. In particular, there is ample evidence that MIC allocations are significantly under-utilized, despite the fact that intertie RA contracts are historically priced below the average price of system-wide RA contracts from in-state resources. Because there is currently no process for CAISO to reallocate or release this capacity, this MIC capacity is effectively stranded and unavailable to support import RA contracts. The result is that some LSEs that wish to purchase additional import RA are unable to obtain the MIC capacity necessary to do so, while other LSEs that have received an allocation of MIC capability do not fully use that capacity to support RA procurement from out-of-state resources.

Powerex believes that the shortcomings of the existing MIC allocation framework should be addressed to prevent the inefficient stranding of MIC capacity. In particular. Powerex believes that CAISO should modify the existing framework such that MIC would only be allocated to LSEs that make an affirmative demonstration that they have executed an import RA contract. Specifically, each LSE would be required to inform CAISO of executed import RA contracts on a year-ahead basis, at which point, they would receive a corresponding quantity of MIC. Only if the total quantity of executed year-ahead import RA contracts on a given intertie exceeded the total MIC on that intertie would MIC need to be rationed, which could be done on a load-ratio share basis. In addition, any MIC that was not allocated to support year-ahead import RA contracts would be made available to support month-ahead import RA contracts. The result would be a MIC framework that would only resort to use of a load-ratio allocation if MIC was actually scarce. Powerex believes that such a framework has the potential to confer substantial benefits by preventing the inefficient stranding of intertie capacity that occurs under the existing MIC allocation framework.

Powerex believes the importance of this issue is increasing as a result of (1) the potential for intertie RA to increase as fossil resources inside the CAISO BAA retire in the coming years; and (2) the growing number of entities required to procure RA, as load continues to migrate from a small number of incumbent load-serving entities to a much larger number of load-serving entities, including community choice aggregators.