Comments of Powerex Corp. on
Day Ahead Market Enhancements Issue Paper/Straw Proposal

Submitted by	Company	Date Submitted
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I. Introduction

Powerex appreciates the opportunity to submit comments on CAISO's February 28, 2018 Day-Ahead Market Enhancements Issue Paper/Straw Proposal ("Issue Paper"). In the Issue Paper, CAISO states that the purpose of this initiative is to enhance the reliability and efficiency of the CAISO grid by addressing limitations in existing day-ahead market processes. In particular, CAISO proposes to:

- Transition the day-ahead market from hourly to 15-minute scheduling;
- Procure day-ahead imbalance reserves to ensure that sufficient upward and downward capacity is available to address deviations in demand and supply between the integrated forward market ("IFM") and real-time market; and
- Combine the IFM and residual unit commitment ("RUC") processes.

CAISO states that its proposed changes are intended to improve CAISO's ability to position its system to accommodate net load variability and to lay the foundation for the potential extension of CAISO's day-ahead market to the entities participating in the CAISO Energy Imbalance Market ("EIM").

Powerex supports CAISO's efforts to further refine its day-ahead market processes. In particular, Powerex agrees that the introduction of a day-ahead imbalance reserve product has the potential to enhance CAISO's ability to respond to changes in demand and supply by positioning resources in the day-ahead timeframe to provide upward and downward flexibility. Powerex believes that CAISO's proposed combination of the IFM and RUC will support CAISO's implementation of a day-ahead imbalance reserve product, while implementation of 15-minute scheduling granularity in the day-ahead market will more closely align the commitment of resources with ramping needs.

In the following sections, Powerex offers comments and suggestions regarding CAISO's proposals as well as related issues raised in the Issue Paper. More specifically, as discussed further below, Powerex:

- Requests that CAISO affirm that the day-ahead imbalance reserve product is a complement to, and not a substitute for, forward procurement of sufficient flexible capacity;
- Urges CAISO to establish a framework that includes stringent consequences for resources that fail to meet the performance obligations associated with commitment to provide day-ahead imbalance reserves;
- Recommends that CAISO impose a day-ahead e-Tag requirement for day-ahead awards in order to accurately distinguish between physical supply and speculative offers;
- Believes that the Congestion Revenue Right ("CRR") "Clawback Rule" can be applied, albeit with minor modifications, to the proposal to transition to a 15-minute scheduling granularity of the day-ahead market; and
- Encourages CAISO to avoid prejudging the governance framework that should apply to any proposal to extend the day-ahead market to the EIM.

II. The Day-Ahead Imbalance Reserve Product Will Help Position Resources Efficiently, But Must Not Be Used As A Mechanism For Ensuring Flexible Resource Adequacy

Powerex emphasizes that it is critical that the proposals outlined in this proceeding, including the introduction of a day-ahead imbalance reserve product, not be viewed as a substitute for a robust forward flexible ramping capacity program that ensures that sufficient flexible capacity is procured and committed on a forward basis to meet operational needs. The day-ahead enhancements have the potential to improve the positioning and scheduling of resources that are offered through the day-ahead market; however, longer-term, forward arrangements are necessary to ensure that sufficient resources are available in the day-ahead timeframe in the first place. In particular, Powerex believes that it would be imprudent to wait until the day-ahead timeframe to procure flexible capacity necessary to meet system ramping needs, just as it would be imprudent to wait until the day-ahead timeframe to procure conventional resource adequacy resources. Although there may be strong financial incentives for California entities to rely on short-term procurement of flexible capacity and only procure, and provide compensation for, capacity during the limited days and hours when the capacity is actually needed to provide energy and/or ancillary services to meet real-time operational needs, Powerex believes that such an approach would dramatically increase reliability risk and hamper CAISO's ability to effectively respond to changes in demand and supply.

As a practical matter, there are numerous reasons why CAISO cannot count on sufficient flexible capacity being available if CAISO waits until the day-ahead timeframe to procure it. For instance, in areas located outside of the CAISO balancing authority

area (“BAA”), there is no centralized maintenance planning, unit commitment, or must-offer requirements. Thus, even entities that have excess installed capacity may not be able to offer that capacity to CAISO on a day-ahead basis as a result of scheduled maintenance, fuel constraints or other limitations, or forward sales of capacity to other regions or parties. In other words, many resources may not be available on a day-ahead or real-time basis unless they are planned or committed to be available to the CAISO. Thus, in some cases, waiting until the day-ahead timeframe to commit flexible capacity may mean that sufficient capacity is not available to meet CAISO’s operational needs and maintain reliability.

For that reason, Powerex believes that the goal of the day-ahead imbalance reserve product, as well as the other initiatives set out in the Issue Paper, should be to complement the robust forward procurement of flexible capacity sufficient to meet the full range of CAISO’s operational needs. In particular, the day-ahead imbalance reserve product will complement the forward procurement of capacity by ensuring that CAISO’s day-ahead market optimization efficiently positions and “holds back” resources. Without this enhancement, the day-ahead optimization may result in resources that have been procured to provide flexible resource adequacy (“Flex RA”) being scheduled to provide energy in the day-ahead market such that they are not available to provide flexibility in the 15- and 5-minute markets.

By closing this gap, implementation of a day-ahead imbalance reserve product has the potential to enhance the effectiveness of the Flex RA program and ensure that CAISO has sufficient flexible ramping capability to meet real-time needs. At the same time, forward planning and procurement of flexible capacity will continue to be critical to maintaining reliability and, ultimately, the success of the initiatives in this proceeding by ensuring that sufficient resources are available to CAISO for commitment and positioning on a day-ahead basis. It is therefore critical that CAISO continue to move forward with efforts to establish a long-term Flex RA framework as it pursues enhancements to the day-ahead market as part of this proceeding.

III. CAISO Should Define Stringent Consequences For Non-Performance For The Day-Ahead Imbalance Reserve Product

In the Issue Paper, CAISO explains that resources that are awarded imbalance reserves in the day-ahead market will be paid at the day-ahead imbalance reserve marginal price and will be obligated to submit economic bids for energy and ancillary services into the real-time market equal to the MW quantity of its reserve product awards. CAISO further explains that a resource that complies with this real-time must-offer obligation will be permitted to retain its day-ahead reserve payment as well as any revenues associated with being dispatched to provide energy or ancillary services in real-time. If a resource fails to comply with its real-time must offer obligation, however,

the resource will be charged for the portion of its must-offer obligation that it failed to meet. For instance, CAISO explains that, "if a resource is awarded 10 MW of imbalance reserves but only submits economic bids that cover . . . 8 MW into the real-time market, the resource will be charged for 2 MW that was not available."[1] In addition, CAISO states that if a resource that has been awarded day-ahead imbalance reserves fails to follow CAISO's 15-minute or 5-minute dispatch instructions, the resource will be allocated real-time flexible ramping product costs.

Powerex believes that it is critical that CAISO adopt stringent consequences for resources that receive a day-ahead imbalance reserve award, but fail to comply with the must-offer obligation or CAISO dispatch instructions when called upon to perform in real-time. As CAISO notes in the Issue Paper, the day-ahead imbalance reserve product is intended to ensure that CAISO has sufficient resources available in its real-time markets to respond to uncertain changes in demand and supply, and reduce reliance on administrative or out-of-market actions to preserve reliability. The ability of the day-ahead imbalance reserve product to achieve this result will be impaired, however, to the extent that resources committed to provide day-ahead imbalance reserves fail to make themselves available or to respond to CAISO dispatch instructions.

In order to ensure that the day-ahead imbalance reserve product is able to achieve its objective, Powerex recommends that CAISO modify its proposal to significantly increase the consequences for non-performance. In particular, Powerex believes that the consequences for non-performance should be sufficiently severe that: (1) resources that do not believe that they will be able to comply with the performance obligations associated with the day-ahead imbalance reserve product will not offer to supply this product; and (2) resources that are committed to provide the day-ahead imbalance reserve product will have an incentive to perform unless they are physically unable to do so due to events beyond their control (*i.e*., due to force majeure). This will help ensure that resources that are committed to provide day-ahead imbalance reserves can be relied upon in real-time to meet changes in demand and supply, thereby reducing the need to rely on out-of-market dispatch or other such measures to balance the CAISO grid.

Powerex is concerned that CAISO's proposed consequences for non-performance are not sufficient to ensure that resources committed to provide day-ahead imbalance reserve perform absent an event of *force majeure*. To the contrary, CAISO's proposal would effectively permit imbalance reserve to be awarded to resources with limited

[1] Issue Paper at 21.

ability to actually perform, since such resources would still be fully compensated for all hours in which CAISO does not deploy the reserves for energy in real-time.

In order to ensure that the resources committed to provide day-ahead imbalance reserve can be counted upon to perform in the real-time market as required, Powerex believes that, at a minimum, CAISO should modify its proposal such that a failure to comply with the performance obligations associated with day-ahead imbalance reserves is treated in a manner akin to the failure to perform on an ancillary services award. Specifically, to the extent that a resource fails to submit an offer in the real-time market, only submits an offer equal to a portion of its day-ahead imbalance award, or fails to deliver energy or ancillary services when instructed by CAISO, the result should be a rescission of any day-ahead imbalance award payments during any hour in which the resource failed to fully meet its obligation. In addition, to the extent that a resource repeatedly fails to comply with the performance obligations associated with day-ahead imbalance reserve, Powerex believes that it would be appropriate to disqualify the non-performing resource from bidding to provide the day-ahead imbalance reserve product for a defined period going forward.

IV. CAISO Should Impose A Day-Ahead E-Tag Requirement

In the Issue Paper, CAISO states that one of the factors driving the need for the day-ahead imbalance reserve product is deviations in intertie schedules between the IFM and real-time markets, and proposes to allocate a portion of the cost of procuring imbalance reserves to intertie deviations. CAISO notes, however, that deviations in intertie schedules create operational issues that may not be fully addressed by implementing a day-ahead imbalance reserve product. For that reason, CAISO requests stakeholder input on whether additional market design features may need to be modified to address these issues.

Powerex agrees with CAISO that additional market design changes are necessary to ensure that intertie deviations do not create operational and reliability issues in the CAISO markets. In particular, Powerex has repeatedly emphasized that physical delivery of market awards is necessary for the safe, reliable and efficient operation of the CAISO grid. Under the existing CAISO Tariff, however, there is no framework that ensures that intertie schedules that clear the day-ahead market can be counted upon to deliver in real-time. More specifically, at the time that a market participant submits an offer or receives a day-ahead award, there is no requirement that the market participant actually has acquired the physical resources or transmission service that it may use to physically deliver on its award. In other words, a market participant may submit an offer that is entirely speculative—unsupported by physical resources and transmission—with the market participant only taking steps to try to obtain the resources and transmission necessary to effectuate delivery *after* it receives a day-ahead award.

Powerex believes that this gap in CAISO's existing market framework has a number of undesirable consequences. As an initial matter, Powerex believes that the ability of market participants to submit speculative supply offers has the potential to inappropriately distort market prices and impair the efficient functioning of the CAISO markets. More specifically, the submission of speculative supply offers has the potential to overstate the physical supply actually available in the day-ahead market. This, in turn, suppresses market clearing prices and mutes the ability of the CAISO markets to send efficient price signals to incent participation by physical resources.

In addition, and perhaps more importantly, the submission of supply offers that are not backed by physical resources increases reliability risk, as CAISO has no way of knowing ahead of time which imports scheduled in the day-ahead market can be counted upon to actually deliver in real-time. Moreover, delivery failures are not random events, but are most likely to occur precisely when CAISO conditions are tight. This is because a market participant that submits a speculative supply offer is betting on its ability to procure excess energy in the short-term bilateral markets external to the CAISO, as well as transmission service, after it receives an award in the day-ahead market. When grid conditions in the west are tight, however, the risk that the market participant will be unable to procure the necessary energy and transmission service increases. The resulting delivery failures can leave CAISO attempting to procure additional last-minute energy under the same challenging market and grid conditions that led to the non-performance of the speculative supply in the first instance.

Recent experience in the CAISO markets bears this out. Most notably, on May 3, 2017, CAISO experienced significant reliability challenges due, in part, to the failure of imports scheduled in the day-ahead market to deliver in real-time. On that particular day, 1,150 MW of imports that had been scheduled in the day-ahead market failed to materialize in real-time. In addition, CAISO experienced supply failures in the hour-ahead timeframe, with 1,230 MW of hour-ahead awards "declined," and only approximately 400 MW actually procured and delivered to the CAISO grid. The result was that CAISO did not have sufficient resources available to respond to changes in renewable output and CAISO was forced to declare its first Stage 1 emergency in 10 years. This example illustrates that the same conditions that cause speculative supply to not deliver can also make it exceedingly challenging for CAISO to replace that failed supply in the minimal time available. Speculative supply, in other words, exposes CAISO and its customers to increased reliability risks.

Finally, the submission of supply offers that are not backed by physical resources and transmission distorts the EIM resource sufficiency evaluation for the CAISO BAA by over-stating the physical supply available in the day-ahead and real-time markets. This reflects that, unlike in the case of EIM entities, untagged intertie schedules accepted by CAISO in the day-ahead and real-time markets—which may not be backed by physical

resources or transmission capable of supporting delivery—are counted towards meeting resource sufficiency requirements. The result is that CAISO erroneously passes the resource sufficiency evaluation and, ultimately, "leans" on the EIM footprint for capacity and/or flexibility. Not only does this framework result in the inequitable application of the EIM resource sufficiency framework to the CAISO BAA, but it can also result in price distortions across the EIM footprint.

CAISO proposes to attempt to mitigate some of the issues associated with import failures through implementation of the proposed day-ahead imbalance reserve product. It is important to recognize, however, that proceeding with implementation of a day-ahead imbalance reserve product is likely to be highly inefficient or ineffective (or both), unless CAISO takes steps to proactively prevent market participants from submitting offers that are not backed by physical capability and transmission in the first place. Because CAISO does not currently have a mechanism to distinguish between "speculative" intertie awards and those that are backed by a genuine commitment of physical resources and transmission, ensuring that CAISO has sufficient resources to successfully respond to intertie deviations will mean that CAISO will be required to procure additional day-ahead imbalance reserves based on a "worst case scenario" approach (*i.e*., based on the maximum amount of day-ahead imports that may fail to deliver in real-time). Although such an approach may help ensure that CAISO has sufficient resources available to address intertie deviations that arise in real-time, such an approach is likely to be exceedingly costly, as it may require CAISO to procure reserves far in excess of actual system needs in the majority of hours. Alternatively, if CAISO foregoes use of a "worst-case scenario" approach and instead procures day-ahead imbalance reserves based on the *average* risk of intertie deviations, it is likely that there will be many hours in which CAISO will *not* have sufficient day-ahead imbalance reserves to address intertie deviations, and hence will continue to lean on the EIM or resort to other measures to address the shortfall and maintain reliability.

Powerex believes that both of the above options are undesirable. Rather than procuring additional reserves to backstop "speculative" import offers, Powerex believes that CAISO should first take appropriate steps to minimize the occurrence of intertie deviations by ensuring that day-ahead intertie offers are indeed backed by physical capability and can be counted upon to deliver in real-time. This can be accomplished by requiring that market participants that clear the day-ahead market submit a valid e-Tag on a day-ahead basis, as the e-Tag will identify the source balancing authority, generation source, and transmission service supporting the award. A day-ahead e-Tagging requirement will prospectively discourage submission of speculative awards (which generally will be unable to provide a day-ahead e-Tag), will provide CAISO with advance notice of any awards that are at risk of non-performance, and will provide an

appropriate basis for allocating the costs of procuring additional day-ahead imbalance reserve to backstop awards that do not submit a day-ahead e-Tag.

Powerex recognizes that requiring a day-ahead e-Tag will not completely eliminate intertie deviations. For instance, it is likely that there will continue to be instances where a market participant that has received a day-ahead award will be unable to perform in real-time due to circumstances beyond the market participant's control, such as schedule curtailments due to transmission outages or de-rates. Powerex believes, however, that imposing a day-ahead e-Tag requirement will minimize the occurrence of non-delivery by ensuring that each market participant has the physical capability to import energy in accordance with its day-ahead award and minimize the costs associated with procuring day-ahead imbalance reserves.

V. The CRR Clawback Rule Will Need To Align 15-Minute Day-Ahead Prices With Hourly Real-Time Market Bids

In the Issue Paper, CAISO explains that CRRs will be settled based upon 15-minute IFM schedules following implementation of its proposal to extend 15-minute scheduling to the IFM. While CAISO states that it does not believe that there are settlement implications associated with this change in granularity, CAISO states that it believes that the CRR Clawback Rule may need to be reviewed due to the change from hourly to 15-minute scheduling in the day-ahead timeframe.

Generally, Powerex believes that the CRR Clawback Rule can be applied with the day-ahead market enhancements with minor modification to reflect the changed granularity of the day-ahead market. More specifically, the CRR Clawback Rule is designed to permit day-ahead import awards to be economically bid in the real-time market at prices at or above the day-ahead price without triggering the settlement provisions. If the day-ahead market transitions to 15-minute granularity, however, the CRR Clawback Rule will need to be modified to specify *which* of the four 15-minute day-ahead prices will be compared to the real-time bid price, as the latter will continue to be submitted for the entire hour. As a starting point for further discussion, Powerex suggests that the CRR Clawback Rule be modified to refer to the simple average of the four day-ahead clearing prices within a given hour.

VI. CAISO Should Not Prejudge The Governance Framework Applicable To Extension Of The Day-Ahead Market To The EIM

In the Issue Paper, CAISO explains that it expects that implementation of the day-ahead market enhancements will lay the foundation for a future initiative that would give EIM entities the option of participating in CAISO's day-ahead market. For that reason, CAISO states that it plans to allow the EIM Governing Body to have an advisory role on

all aspects of this initiative. CAISO notes that this determination departs from a strict application of the rules in the Charter for EIM Governance, as the proposals at issue in this proceeding (*i.e*., imbalance reserves, day-ahead fifteen minute scheduling, and combining the RUC and the IFM) do not involve changes to the rules of the real-time market or to rules that govern participation in all CAISO markets.

Powerex supports CAISO's decision to give the EIM Governing Body an advisory role on CAISO's proposal in this proceeding. Powerex emphasizes, however, that it is important that CAISO not pre-judge the governance structure that would apply to a proposal to extend the day-ahead market to EIM entities. Powerex believes that extending the day-ahead market to EIM entities would represent a significant expansion of the EIM and has the potential to have far reaching consequences throughout the west. For that reason, Powerex believes that every aspect of the proposed extension of the day-ahead market to EIM entities, including the governance structure that should be applied to such an initiative and the market more broadly, must be carefully considered.