

# Comments on Renewables Integration Market and Product Review Phase 2 Market Vision and Roadmap

Submitted By	Company or Entity	Date Submitted
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## Introduction

Powerex agrees with the CAISO's overarching objective of maintaining a reliable grid within the framework of an efficient market. However, Powerex believes much more work is needed on the appropriate market modifications required to achieve this objective. More specifically, Powerex is concerned that the CAISO appears to be pursuing band-aid market design elements that merely attempt to address the symptoms of underlying structural market problems. Moreover, these band-aid solutions are often inconsistent with cost causation principles, which inevitably leads to additional market inefficiencies and undesirable outcomes.

## Short-term Enhancements - Ramping and Reserve Management Enhancements

### Regulation Energy Management

Powerex is supportive of enabling non-traditional resources, such as storage devices and demand response to provide regulation service, as these resources can provide a positive contribution to CAISO's capacity market. However, given the critical reliability aspects of regulation, Powerex recommends the CAISO move forward on this initiative with considerable care and diligence.

### Flexible Ramping Constraint

Powerex believes the Flexible Ramping Constraint is essentially a band-aid solution for a broader market design gap related to the efficient procurement and cost allocation of balancing reserves. Powerex believes the CAISO requires this flexible ramping constraint product due to a variety of unaddressed market design and tariff issues.

Specifically, Powerex understands the CAISO is seeking to acquire additional dispatchable generation, through the flexible ramping constraint, to backstop

- a) the variability of in-state intermittent resources, and
- b) curtailments to certain firm energy and firm contingent energy imports due to insufficient balancing reserves carried at the source balancing authority

### **Additional Balancing Reserves for Variability in In-State Intermittent Resources**

Powerex believes that in-state intermittent generation should eventually be charged an appropriate allocation of balancing reserve costs, including the flexible ramping product. However, Powerex believes the allocation of these balancing reserve costs to CAISO load as an interim measure may be tolerable for several reasons. First, unlike imports, these resources have little choice to procure balancing reserves outside of the CAISO. Second, these resources cannot easily inflate their IFM or HASP schedule amounts, inappropriately consuming even greater balancing reserves, without the CAISO taking notice - the CAISO has much greater visibility into actual and forecast production for resources located within the CAISO grid. And third, both the energy and renewable attributes of these resources are almost certainly being delivered for the benefit of California load and ratepayers. For these reasons, charging CAISO load for the increased balancing reserves driven by intermittent resources within the CAISO's balancing authority may be acceptable as a temporary measure. Nonetheless, Powerex recommends that the CAISO address cost allocation consistent with cost causation principles in the very near term as a priority item. In other words, the CAISO should seek to charge intermittent resources located within the CAISO grid for its proportion of additional balancing reserves.

### **Additional Balancing Reserves for Schedule Curtailments**

In contrast, Powerex does not believe that the CAISO should allow imports to consume CAISO balancing reserves *paid for by load and exports*, even as a temporary measure. Failure to address this issue will continue to negatively impact economic efficiency both within the CAISO and in external markets, directly violating cost causation principles, and potentially jeopardizing reliability. Moreover, Powerex expects this problem to grow as more entities become aware that the CAISO is uniquely offering free balancing reserves to firm and firm contingent imports. It should not be surprising to CAISO that entities increasingly opt-out of providing or acquiring balancing reserves at the source balancing authority, in order to attain the CAISO's free balancing reserves, through schedule curtailments.

The driver of additional balancing reserves for firm energy and firm contingent energy imports is the CAISO's failure to clearly define and enforce the traditional definitions of these energy product types – firm and firm contingent. Powerex believes the traditional definition and historical use of both firm and firm contingent energy product types requires that the source balancing authority provide sufficient balancing reserves to prevent schedule curtailments. This failure to define and enforce these traditional definitions leads to two types of schedule curtailments:

- a) Implicit virtual bidding activity driven by overstated schedules in the CAISO's IFM or HASP markets (i.e. physical schedules curtailed in real-time whereby the participant never had the generation or transmission to deliver or as declines of HASP awards), and
- b) A fall-off in intermittent production without sufficient balancing reserves at the source balancing authority to "firm up" the schedule.

In the first case, the problems with implicit virtual bidding activity are well documented as having undesirable market distorting and reliability consequences. Implicit virtual bidding can take many forms, including inflating variable resource forecasts and corresponding import schedules to the CAISO, only to have the schedule curtailed in real-time. Unlike resources located in the CAISO's balancing authority, the CAISO has little, if any, ability, to identify this activity and hence can only prevent it through discouraging and/or eliminating schedule curtailments.

In the second case, these imports are effectively avoiding paying for balancing reserves at the source balancing authority in order to acquire free balancing reserves from the CAISO (which are paid for by CAISO load and exports). By proposing that load and exports bear the cost of this service, the CAISO is clearly violating cost causation principles with unintended consequences. The parties causing the CAISO to incur these costs will not have to bear the costs and therefore will be incented to continue or expand their access to this free service. This will manifest itself in both additional direct costs to CAISO load for such products as RUC, Operating Reserves, and the Flexible Ramping Constraint, as well as indirect uplift charges such as the Real-Time Imbalance Energy Offset.

Powerex believes the CAISO should reduce its requirement for incremental balancing reserves to backstop firm and firm contingent imports by removing the ability for these imports to inappropriately consume balancing reserves (paid for by CAISO load and exports) by:

- a) Better defining and enforcing firm and firm contingent energy product types consistent with their traditional interpretation; and
- b) taking additional measures to prevent implicit virtual bidding activity.

Entities that wish to consume CAISO balancing reserves to backstop import curtailments should be required to use the interruptible energy product type which enables the CAISO to procure and charge for the necessary balancing reserves, consistent with cost causation principles.

Powerex believes if the CAISO took these steps it may be able to reduce the amount and cost of balancing reserves, the inappropriate cost shift from importers to CAISO load, and protect grid reliability, while gaining the time to develop a more complete and robust product to meet its additional balancing reserve needs.

### **Enhanced Contingent/Non-Contingent Operating Reserve Management**

Powerex believes a broader discussion of all capacity commitment mechanisms and cost allocation is needed before moving forward with changes to contingency reserves procurement, deployment, or cost allocation.

## **Short-term Enhancements - Renewable Resource Integration Policies**

### **Dynamic Transfers**

Powerex filed comments supporting CAISO's Dynamic Transfer Filing, but noted that the CAISO's proposal to treat dynamically scheduled intermittent energy as "resource contingent firm import[s]" in proposed Appendix M Section 1.5.4 of its filing is incorrect, and will result in either (a) the cost of procuring sufficient additional ancillary services required to backstop these

imports being charged to all CAISO load, which is inconsistent with cost causation principles (see comments under Flexible Ramping Constraint above); (b) procurement of insufficient ancillary services, which would adversely impact the reliability of the CAISO grid; or (c) both (i.e., insufficient procurement, with the cost of the quantity that is procured being improperly charged to CAISO load). Powerex stated that until such time that the CAISO proposes a new market mechanism to better quantify and procure the necessary balancing reserve requirements resulting from the importing of dynamic intermittent resources (i.e., intermittent or variable energy resources), Powerex believes these imports should be treated as Interruptible. In doing so under the CAISO's present Tariff, the additional ancillary service requirements associated with Interruptible imports are procured in the Integrated Forward Market to ensure reliability and allocates the cost in a manner consistent with cost causation by assigning those costs to the importer, rather than allocating the costs to CAISO load and exports.

### **Other Short-term Enhancements**

Powerex provided comments on Oct. 12, 2011 on PIRP Modifications, Energy Bid Floor, and Bid Cost Recovery proposals and has no further comments at this time.

## **Operational Enhancements**

### **72-Hour RUC**

Powerex believes further broader discussions on the CAISO's unit commitment process are necessary as previously discussed.

### **More Granular Variable Energy Resource Forecasting for RUC**

Powerex supports the CAISO in receiving better data as it relates to the forecasting of VERS availability. However as previously stated, Powerex believes the CAISO needs a broader discussion on the RUC process, specifically under which conditions and purpose it can use RUC and whether RUC should be extended to the interties.

### **Startup and Shutdown Profiles**

Powerex has no comments at this time.

## **Mid-term Market Enhancements**

### **Flexi-Ramp Product**

Powerex generally supports the CAISO in the development of new products to efficiently procure, and appropriately charge for, balancing reserves and ramping services. This will be critical for handling the increase in VERs being added both within the CAISO and on the interties. Powerex believes that compensation should be market based and costs allocated consistent with cost causation principles. In addition, dispatchable dynamic resources on the interties should be allowed to participate in the appropriate market framework.

However, it continues to be unclear to Powerex how the CAISO intends various products to fit together in meeting the broader CAISO capacity needs. Again, Powerex urges a broader discussion of CAISO capacity-related challenges and issues including:

- a) energy product types (firm, unit contingent, and interruptible);

- b) contingency reserves;
- c) balancing reserves;
- d) ramping reserves; and
- e) unit commitment.

Powerex agrees with the CAISO's statement that "(f)orecast uncertainty associated with wind and solar production increases the need for the reservation of resource capacity to ensure that operational requirements are met in real time". With the increased integration of variable resources within WECC, capacity may often become scarce, not only within CAISO but also within neighboring BAAs.

Powerex believes that as part of CAISO's market design process, CAISO needs a much improved framework to evaluate imports (see comments above). More specifically, CAISO needs clear and enforceable rules to be able to differentiate between imports that are being backed up with balancing reserves by the Source BAA and those that are not. Powerex believes the key differentiation for import schedules is not variable resources versus non-variable resources, nor dynamic versus static schedules, but rather, is the Source BAA fully ensuring delivery according to CAISO needs and price signals or not.

### **DEC Bidding from PIRP Resources**

Powerex believes that encouraging all market participants to submit bids will improve market efficiency by producing proper and appropriate price signals for the market.

### **Intertie Pricing and Settlement**

Powerex fully supports and intends to participate extensively in the CAISO's proposed working group on this important issue.

The CAISO has outlined two possible proposals – NYISO approach and Interties get RT price during LLH.

CAISO describes the NYISO approach as imports and exports settling at the RT price (when there is no congestion) with Bid Cost Recovery, BCR, for imports only. An additional congestion charge would apply to the real-time price during congestion periods. The CAISO has not commented on other elements of the NYISO approach, including additional elements to ensure that imports are fully backstopped at the source BAA and additional elements to discourage implicit virtual bidding.

Powerex understands the second proposal presented by the CAISO would essentially make imports price-takers in the off peak hours with no BCR. The CAISO opinion is this would make importers more comfortable with the price risk as an interim step to a NYISO-like settlement.

Powerex encourages the CAISO in looking towards other markets for guidance in dealing with the complex issues associate with real-time market design and intertie pricing. However, Powerex believes it is far too premature for the CAISO to propose adopting the NYISO approach or any alternative real-time market designs.

The CAISO should move this discussion to a separate stakeholder process. It should begin this new stakeholder process by identifying all of the shortcomings of the current real-time market design, with a focus on the differences between intertie and internal resources and market rules. Powerex believes that only some of the problems with the current real-time market design have been identified to date and much more discussion is necessary. Moreover, the CAISO has not

fully explained all of the elements of the NYISO approach to its real-time market including inertia treatment.

A robust solution is imperative as there are many outstanding CAISO issues that must be understood before moving forward with real time market design proposals, particularly including proposals where inertia convergence bidding may be reinstated.

### **Pay for Performance Regulation**

Powerex supports fair and equitable compensation for regulation products including pay for performance and mileage based payments.

### **Forward Procurement of Flexible Capacity**

Powerex supports the CAISO in a comprehensive review to determine the requirements for the forward procurement of flexible capacity to accommodate VERs and other reliability needs. As Powerex has commented in other stakeholder processes, the CAISO needs to review its requirements to reliably operate the grid to determine if it would be more appropriate to contract for month-ahead, quarter-ahead, or annual capacity products (including ramping, balancing, and operating reserves) than to rely solely on the DA and RT markets. Furthermore, Powerex believes that there is an urgent need to complete the comprehensive review so that the right mix of products and forward markets can be developed to reliably integrate Dynamic Transfers (which comes into effect in 2013) and in-state intermittent resources.

### **Conclusion**

Powerex encourages the CAISO to undertake a comprehensive review of the underlying structural market problems to ensure that the Market Enhancements that are proposed do not create unintended consequences or incentive behavior that is detrimental to the efficient and reliable operation of the CAISO markets.