

**Comments of Powerex Corp. on
Regional Resource Adequacy Second Revised Straw Proposal**

Submitted by	Company	Date Submitted
Clarke Lind 604.891.6034	Powerex Corp.	June 15, 2016

Powerex appreciates the opportunity to submit comments on CAISO's May 26, 2016 Regional Resource Adequacy Second Revised Straw Proposal. This Second Revised Straw Proposal includes a discussion concerning the types of import resources that qualify for Resource Adequacy ("RA") purposes, as well as changes to the Maximum Import Capability ("MIC") allocation framework.

Powerex reiterates its support for a regional RA framework that supports reliability, and does so in an efficient, non-discriminatory manner at least total cost to consumers. Powerex believes that refining the requirements for imported RA and the MIC framework can advance both of these objectives.

Powerex's Understanding of the Need and Purpose of a Properly Designed Resource Adequacy Program

Before discussing potential enhancements to CAISO's RA program, Powerex believes it may be helpful to summarize its understanding of the need for, and objectives of, a properly functioning and robust regional RA framework. In Powerex's view, such a framework:

- Ensures that enough capacity is procured on a forward basis to meet expected load plus a conservative planning reserve margin;
- Ensures that enough flexible capacity is procured on a forward basis to meet uncertainty and variations in system conditions within each operating day;
- Provides competitive and market-based compensation for investment in (and forward commitment of) physical capacity, supplementing the energy revenues earned in the day-ahead and real-time markets and supporting ongoing investment in capacity resources;
- Ensures that customers bear the costs of resources used to serve their needs in accordance with cost causation (e.g., ensures that groups of customers that have funded existing capacity are compensated when the capacity is used to serve the needs of a different group of customers);
- Is free from undue discrimination against any group of participants, fostering non-discriminatory competition between new and existing resources and between internal and external resources; and
- Is highly transparent, building confidence and increasing participation in the program and helping to identify areas for improvement.

Ensuring Reliability through Enhancements to CAISO's RA Requirements

An RA framework furthers reliability by committing, on a forward basis, sufficient physical generation capacity to meet the anticipated peak load of a Balancing Authority Area (“BAA”), plus a conservative planning reserve margin, and the need for flexible capacity to meet variations and uncertainty in system conditions within each operating day. Reliability will not be achieved, however, if capacity that is relied upon to meet firm load is not actually available or deliverable when needed. The Second Revised Straw Proposal sets out several improvements that could be made to the RA program to ensure that contracted RA capacity meaningfully supports reliability in the expanded CAISO BAA.

Gaps in the Current RA Framework May Undermine Reliability and Create Unnecessary Challenges

Powerex shares the concern expressed in the Second Revised Straw Proposal, as well as by the Department of Market Monitoring, regarding spot market energy purchases being relied upon to meet firm load.¹ The Second Revised Straw Proposal states that “the integrated resource plans for utilities in other states, such as those in the PacifiCorp area, indicate that these entities **rely on bilateral spot market purchases** to meet a significant portion of their power needs.”² In Powerex’s view this implies that PacifiCorp could be incapable of meeting its firm load obligations if energy was unavailable on the spot market. Any conditions that affect the broader region—such as extreme weather events—could leave PacifiCorp looking to the spot markets to serve its firm load obligations just when there is no surplus energy or capacity available to be offered into the spot market. In effect, PacifiCorp appears to be (1) going short sufficient forward capacity commitments to meet its actual RA needs; and (2) choosing instead to rely on the capacity investments made by other entities and presuming that these resources will be made available to PacifiCorp in the bilateral spot markets.

A related problem can also arise for load-serving entities (“LSE”) in the CAISO BAA. These LSEs must demonstrate sufficient RA capacity on a year-ahead or month-ahead basis, which reduces some of the concerns about undue reliance on spot market supply that may or may not be available. But as the Second Revised Straw Proposal correctly notes, imported RA does not need to be linked to a physical resource at the time of the RA procurement.³ Thus, under the current RA program, an entity that sells RA to LSEs in the CAISO BAA may not have any physical capacity available at the time it makes the RA commitment. Instead, the RA seller may intend to rely on spot market purchases to perform on its RA contract, if and when it is called upon to deliver energy. Under the current program rules, neither the acquiring LSE nor the CAISO is required to be notified if this RA capacity is, in fact, just a commitment by the seller of RA to make bilateral spot market energy purchases to serve its obligations.

Concerns have also previously been expressed about the potential for capacity to be double-counted. This concern has been expressed specifically in the context of the EIM, where a

¹ Second Revised Straw Proposal at 11.

² *Id.* (emphasis added).

³ *Id.*

resource located in an EIM Entity BAA may be sold as RA to an LSE in the CAISO BAA while also used by the EIM Entity BAA to pass the EIM resource sufficiency evaluations. Powerex shares these concerns and supports developing measures under a Regional Resource Adequacy framework to ensure that capacity relied upon to meet load in the CAISO BAA is not also relied upon to meet load in another BAA.

Finally, the Second Revised Straw Proposal expresses concern that imports providing RA capacity must be offered into the day-ahead market, but have no further must-offer obligation if they are not accepted. Powerex notes that this statement would benefit from clarification, as an RA resource that does not clear the day-ahead market may still be subject to a CAISO day-ahead Residual Unit Commitment award. If it is committed, the resource will be required to submit an offer in the real-time market. Nevertheless, Powerex would support modifications to the RA product that require RA capacity to be offered in both the day-ahead and real-time timeframes, similar to the requirements that apply to Flexible RA capacity.⁴

Potential Enhancements to RA Product Definition and Performance Requirements under a Regional Framework

In response to the concerns and questions expressed in the Second Revised Straw Proposal, Powerex suggests that CAISO consider refining the RA product requirements to ensure the regional framework commits physical resources that can be relied upon to meet firm load in the expanded CAISO BAA. Potential elements of a revised RA product could include:

- RA resources must be offered into both the day-ahead and real-time markets;⁵
- To ensure that import RA contracts represent capacity commitments from physical resources at the time the RA contract is executed, the RA contract should be required to specify both the Source BA and the e-Tag generation source from which the RA capacity will be provided;
- During the performance term of the RA contract, import RA resources must submit e-Tags for every hour of the contract term⁶ identifying:
 - the same Source BA and generation source that was designated in the RA contract; and
 - Firm transmission service from the generation source to the CAISO intertie scheduling point designated in the RA contract.

⁴ Unlike Flexible RA capacity, RA capacity may be limited with respect to interval-to-interval changes in output and/or with respect to the lead time necessary to achieve target output. This simply means that the dynamic limitations of RA resources need to be incorporated into the optimization, it does not mean that RA resources should not be required to submit offers in the real-time market.

⁵ External resources that are not dynamically scheduled would be required to submit 15-minute economic bids in the FMM (*i.e.*, not economic hourly block bids nor self-schedules).

⁶ This requirement is implied by the requirement that RA resources submit offers into the FMM. Section 30.6.2.5 of the CAISO Tariff requires system resources to submit a valid e-Tag consistent with the maximum quantity offered in the FMM. Hence, a “must offer” requirement for imports is effectively a “must e-Tag” requirement as well, even if the offer ultimately does not clear the FMM.

Requiring a valid e-Tag would support CAISO's reliability objectives in numerous ways. Most importantly, it would require that the Source BA approve the e-Tag, which it will do only after performing its own evaluation of the level of firm commitments from its BAA. This provides a far more stringent verification of the presence of genuine physical resources than simply requiring the seller to submit an offer into the CAISO day-ahead market.⁷ Additionally, this more stringent verification will apply to *every hour* in which RA capacity was sold, whether the energy offer associated with the RA contract is dispatched or not.

These proposed e-Tagging requirements would mirror the delivery and scheduling requirements that currently apply to ancillary services provided from external resources. RA capacity, like spinning or regulation reserve, is a key component of ensuring reliable operations, and it seems appropriate to apply consistent performance and delivery requirements to all such reliability services. Furthermore, by utilizing the existing e-Tag framework, the RA program would leverage the proven and successful framework through which other physical capacity commitments are currently transacted in the Western Interconnection. Importantly, this existing bilateral framework is successfully used for the very same purpose that CAISO seeks: to commit physical resources located in one BAA to be available to meet the firm load requirements of the purchasing BAA. By utilizing the same established and familiar industry conventions and framework, rather than creating new requirements or specifications, CAISO can maximize the ability of external capacity to be used to meet CAISO's Regional RA needs.

An important aspect of the current industry practice respecting e-Tagging, including for capacity transactions, is that the resource-specific source designation accommodates the unique challenges of optimizing a multi-unit hydro system. The generation source on an e-Tag may specify either an individual generating unit or a group of coordinated generating resources, such as a coordinated hydro-electric generating system. Both designations satisfy the need for resource-specific e-Tag information, but the system-based resource designation accommodates the need for a hydro system operator to be able to position the individual units within a hydro system in order to achieve optimal system performance, whereas "carving out" an individual unit within the system may be infeasible or result in less efficient operations.

Finally, Powerex suggests that CAISO consider requiring RA resources to be e-Tagged using Firm transmission service from source to sink. Currently, the RA framework includes a process to make sure imported RA does not exceed transmission capacity across CAISO's interties. However, requiring Firm transmission service from source to sink would explicitly ensure that deliverability to the applicable CAISO intertie is secured.

⁷ By adopting measures that ensure RA is provided only from physical resources, offer prices will no longer be confounded by efforts to either ensure (through price-taker offers or self schedules) or avoid (through high-price offers) the energy bid associated with an RA contract being accepted in the day-ahead market. Powerex is not aware of any other reason why the market offers that are submitted by RA resources would be subjected to additional price-related requirements beyond those that already apply in the CAISO markets.

Benefits of the Proposed Enhancements to a Regional RA Product and Performance Requirements

Modifying the RA requirements for external resources, as proposed above, will have significant benefits for the RA program. Specifically, the enhanced performance requirements will ensure that RA capacity is only offered by sellers with access to physical generation resources and the Firm transmission service necessary to deliver those resources to the CAISO BAA. This should remedy the current situation in which an entity may sell RA to an LSE without having access to physical generation, simply gambling on being able to procure the energy required to perform on the RA contract in the spot energy markets. Instead, the proposed enhancements would require the RA seller to identify the specific physical resource (either an individual unit or a set of coordinated “system” facilities) at the time the contract is executed. During the RA contract performance period, the seller would be required to verify the commitment of the designated physical resources and Firm transmission by submitting e-Tags each and every hour, whether the CAISO dispatches any associated energy or not. Requiring e-Tags for external RA resources in each hour will ensure that the source BA is aware of the commitment and has excluded the associated capacity from being available for other purposes (e.g., to support a sale of ancillary services or to meet native load needs). The e-Tagging requirement will also allow CAISO to avoid double-counting of the resource in its own markets (e.g., as both RA and for the EIM flexible ramping sufficiency test for resources located in an EIM Entity BAA). The use of e-Tags is a proven and workable framework for capacity transactions across much of the Western Interconnection. The framework is used by BAs to ensure reliable operation and is also familiar to entities that could be potential sellers of RA.

To summarize, Powerex believes that enhancements to the RA program can be developed that would achieve three beneficial goals: (1) ensure that RA contracts represent the forward commitment of physical capacity; (2) ensure that the committed capacity is deliverable to the CAISO; and (3) ensure that the CAISO does not inadvertently double-count that capacity under its RA and other resource sufficiency programs. These goals can be achieved by modifying the RA program to require RA sellers to:

- Identify the specific physical resource being committed at the time the RA contract is executed;
- Submit e-Tags from the designated resource for every delivery hour, whether energy is dispatched or not; and
- Schedule delivery of the committed capacity on Firm transmission from source to sink.

Supporting Efficient and Non-Discriminatory Regional RA Procurement

Ensuring reliability is the primary objective of the RA program, but a critical secondary objective is to do so in an economically efficient manner. This requires a RA framework that is transparent, competitive, and permits RA to be provided by any resource that satisfies objective technical and performance criteria.

Enhancements to MIC Allocation to Prevent Inefficient “Stranding” of Intertie Capacity

The Second Revised Straw Proposal introduces significant changes to the MIC process. Unlike prior versions of the proposal, CAISO is no longer proposing to merely extend the existing MIC process across an expanded BAA footprint. Given that the MIC will now be substantively revisited, Powerex encourages CAISO to consider whether it would be significantly more efficient—and potentially simpler—to revisit how CAISO ensures that imported RA does not exceed transmission capability.

In its prior comments, Powerex highlighted how the current MIC allocation process may pose a barrier to procuring RA capacity from external resources.⁸ The current process allocates MIC among LSEs *before* each LSE is required to make a showing of its RA procurement, and often before each LSE even enters into contracts for RA resources. If an LSE receives an allocation of MIC but ultimately does not use it to support an import RA contract, that unused MIC allocation is not automatically made available to other LSEs. The net result has been that intertie capacity is chronically and significantly under-utilized,⁹ despite the availability of RA capacity from external resources at very competitive prices. The current MIC allocation process, in other words, applies a rationing approach *even when no rationing is necessary*. In Powerex’s view, this results in both highly inefficient procurement of RA (by unnecessarily preventing external resources from providing RA even when they may be a more economic choice than RA from internal resources) as well as resulting in potentially discriminatory access and/or compensation for external resources seeking to compete in the RA program.

Powerex believes that the existing MIC allocation process could be significantly improved, and offers the following outline for CAISO and stakeholder consideration:

- First, LSEs inform CAISO of executed import RA contracts on a year-ahead basis (*e.g.*, in October prior to the start of the delivery year);
- Second, CAISO evaluates the total quantity of yearly import RA executed on each intertie;
 - If the total quantity of executed yearly import RA contracts on an intertie does not exceed the intertie’s transmission capacity, each LSE is granted the MIC associated with its submitted yearly RA contracts; but
 - If—and only if—the total quantity of executed yearly import RA contracts on an intertie exceeds the intertie transmission capacity, then the intertie capacity for RA

⁸ See Comments of Powerex Corp. on Regional Resource Adequacy Straw Proposal (March 16, 2016), *available at* <http://www.caiso.com/Documents/PowerexComments-RegionalResourceAdequacy-StrawProposal.pdf>; Comments of Powerex Corp. on Flexible Resource Adequacy Criteria and Must Offer Obligation – Phase 2 Straw Proposal at 17-18 (January 6, 2016), *available at* <http://www.caiso.com/Documents/PowerexComments-FlexibleResourceAdequacyCriteria-MustOfferObligation-StrawProposal.pdf>.

⁹ See Cal. Indep. Sys. Operator Corp. Dept. of Market Monitoring, 2015 Annual Report on Market Issues & Performance at 219 (May 2016) (“While total import capability into the ISO system is about 11,000 MW, net imports averaged about 8,400 MW during the peak summer months. Utilities used imports to meet around 2,600 MW, or about 5 percent, of the system resource adequacy requirements during the 210 highest load hours.”), *available at* <http://www.caiso.com/Documents/2015AnnualReportonMarketIssuesandPerformance.pdf>.

would need to be allocated among the LSEs. For LSEs in the current CAISO BAA, the load-ratio share may still be the appropriate way to allocate over-subscribed intertie capacity for RA. For LSEs in BAAs that join as new Participating Transmission Owners, however, it may be more appropriate to allocate intertie capacity for RA based on existing physical transmission rights within the BAA,¹⁰ with load-ratio share only used to allocate any remaining intertie capacity for RA. Irrespective of the process for rationing intertie capacity for RA among the LSEs with executed yearly import RA contracts, any shortfall in the year-ahead RA showing will be required to be rectified in the month-ahead RA showing.

Any intertie capacity for RA that is allocated in the year-ahead process will not be reduced in any subsequent month-ahead evaluation. That is, intertie capacity allocations would be made available preferentially to support year-ahead RA contracts, with intertie capacity allocated to support monthly RA contracts only to the extent that additional intertie capacity remains available after the year-ahead allocation.

The key benefit of this approach is that it avoids rationing intertie capacity for RA when no rationing is necessary. That is, rationing will occur *only* if an intertie is actually oversubscribed with executed RA contracts; given the low utilization of interties for RA to date, actual intertie capacity “congestion” for RA contracts appears unlikely. But if rationing is necessary, then an objective and equitable allocation principle, which is known in advance, would apply. This will give all LSEs the ability to enter into year-ahead import RA contracts from external resources to the full extent that an intertie can accommodate RA contracts.¹¹

Increased Transparency is Necessary for Broad Regional Support of a Regional RA Program

Ensuring economically efficient outcomes under the RA program is especially important in the context of pursuing regional expansion to new entities, whose circumstances and interests may be very different from those of the California entities that shaped the existing RA program. More specifically, a truly regional RA framework will consist of entities in need of procuring additional capacity and/or flexible capacity as well as entities with available surplus capacity and/or flexible capacity. In order to build broad support for regionalization in general—and for a regional RA program in particular—entities with surplus capacity will need to have confidence that the RA program will truly lead to competitive and non-discriminatory outcomes. In Powerex’s view, this will require significant transparency into bilateral RA procurement activities.

¹⁰ For instance, there may be LSEs within the PacifiCorp BAA that currently serve load with committed resources located outside that BAA delivered on Long-Term Firm transmission rights. If, upon joining an expanded CAISO RTO, intertie capacity for RA purposes on the PacifiCorp interties is allocated strictly on load-ratio share basis, those LSEs may find themselves unable to continue meeting their RA obligation with those external resources, and may be required to procure RA from internal resources instead.

¹¹ Certainty of the MIC allocation should not be viewed as a prerequisite to contracting for RA capacity, as any uncertainty regarding acquiring allocated intertie capacity for an import RA contract can be addressed through the commercial terms of the RA contract. For instance, the RA contract may be contingent on the purchaser obtaining the necessary intertie capacity allocation. Alternatively, the RA seller may be responsible for providing RA capacity on an alternative intertie to the extent intertie capacity for RA is not available on the primary intertie.

Currently, however, there is limited transparency regarding California RA procurement activity. A seller of RA has limited ability to respond to market price signals because it is virtually impossible to discern what price it can expect to earn if it enters the market. Similarly, consumers and their advocates have little ability to determine if (or why) their LSE may have paid a relatively high price for some RA contracts in comparison to other lower-price contracts that may be available. Greater transparency would facilitate greater accountability for the bilateral procurement decisions made by LSEs, fostering confidence in the RA program and providing clearer market price signals to encourage participation by additional potential RA sellers.

The increased transparency necessary for a regional RA program should include ongoing annual public reporting on the quantity and prices for RA broken out by the following attributes:

- Flexible RA vs. standard RA;
- Duration of contract (*e.g.*, multi-year, one year, monthly, or day-ahead substitution);
- Imported RA vs. RA from internal resources (which can be further broken out by sub-region);
- Whether the RA contract was with an existing facility or a new facility; and
- Whether the contract is for RA only, or for a bundled product including energy or other attributes (*e.g.*, renewable energy credits).¹²

This reporting should also show the low, median, mean, and high price for each of the categories broken out above.

¹² For such multi-attribute contracts, the portion specifically allocated to RA or Flexible RA should be reported.