

**Comments of Powerex Corp. on  
Congestion Revenue Rights Auction Analysis Report**

<b>Submitted by</b>	<b>Company</b>	<b>Date Submitted</b>
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Powerex appreciates the opportunity to submit preliminary comments on CAISO's November 21, 2017 Congestion Revenue Right ("CRR") Auction Analysis Report ("Report"). The Report provides a detailed examination of multiple facets of CRR performance, and provides a valuable framework for objectively assessing the performance of CRRs and the associated allocation and auction processes. Powerex's comments are based on its preliminary review of the Report; due to the breadth and depth of the information provided by CAISO, Powerex's more detailed review is ongoing.

Powerex strongly supports the objective, data-driven review process being pursued in this stakeholder initiative. The Report identifies several aspects of CRRs that can inform efforts to identify enhancements to the definition of the CRR product and the manner in which CRRs are made available to market participants. The Report also identifies several aspects of CRRs and the CRR auction that appear to perform well, providing value to both the entities that purchase CRRs as well as to the load customers that receive the revenues from the auction.<sup>1</sup>

The analysis contained in the Report is extensive, and its review by stakeholders is likely to prompt further inquiry as CAISO and stakeholders seek to "focus in" on key aspects of the CRR framework that can be improved. This deliberative process stands in contrast to calls for the elimination of the existing CRR auction process, based largely on the observation that, in the aggregate, the CRR auction has collected less revenue than what has been paid out. Powerex believes this is an extreme proposal, as it would effectively eliminate CAISO's provision of open access to its transmission system on a forward basis. The ability for all market participants—including, but not limited to, load—to secure transmission access on a forward basis is critical for the efficient functioning of forward electricity markets, for generators to be able to sell the output of their facilities on a forward basis, and for load-serving entities to be able to purchase energy to meet their customers' needs on a forward basis. Without the CRR auction, market participants other than California load-serving entities would only have "open access" to the CAISO grid on a day-ahead and real-time basis. Such a scenario would

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<sup>1</sup> Powerex notes that load customers also receive an indirect benefit from the auction of CRRs, to the extent these CRRs enable load-serving entities to hedge the purchase cost of energy at the location of their load obligation. However, Powerex is not aware of any analyses that attempt to quantify this value.

be as detrimental—and as unacceptable—as if external transmission service providers made long-term physical or financial transmission rights available only to load-serving entities within *their* footprint. Under such a scenario, California load-serving entities would lose the ability to acquire forward physical or financial transmission rights to support delivery of their remote resources to the CAISO grid. Powerex also believes a call to terminate the current CRR auction is highly premature, as it is necessarily based on the view that the very concept of auctioned CRRs backed by congestion revenues collected by the CAISO is irredeemably broken, and that CAISO staff (including DMM staff, the Market Surveillance Committee, and external advisors) and stakeholders will simply fail in their efforts to identify appropriate and sufficient improvements. Powerex flatly rejects this view, and urges CAISO to maintain its commitment to improve—rather than to abandon—forward open access to its transmission system.

The Report identifies at least two factors that Powerex believes may be largely responsible for the negative aggregate net CRR payments from the CRR auctions: (1) changes in transmission topology between the CRR auction and the day-ahead market; and (2) limited liquidity for certain combinations of CRR sink/source pairs. As discussed below, Powerex believes each of these factors can be addressed through enhancements in the design of CRRs and the auction process, and suggests additional analysis that can be performed to assess the effectiveness of these targeted enhancements.

*1. Day-ahead volumetric “de-rates” of CRRs may significantly address revenue inadequacy and negative net CRR payment*

The Report documents the changes in transmission network topology between the simultaneous feasibility test (“SFT”) used in the CRR allocation and auction process and the transmission network topology of the day-ahead market, against which CRRs are financially settled. The Report documents the frequency, duration, and timing of these changes in topology, and it also highlights how these changes impact the financial performance of CRRs and the CRR auction. Specifically, the Report examines how transmission outages that are included in the day-ahead market optimization but were not included in the CRR SFT can lead to revenue inadequacy. The Report also identifies a strong correlation between revenue inadequacy and negative net CRR payments.<sup>2</sup>

Powerex notes that, of the ten individual months examined in detail in the Report, eight show a negative net CRR payment, meaning that CRR auction revenues were less than the payments made to auctioned CRRs. However, in all but two of these months (the exceptions are April and May 2017), the net CRR payment is smaller (in absolute magnitude) than the amount of revenue inadequacy.

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<sup>2</sup> Report at 9 (stating that “there is a persistent and strong correlation between CRR revenue inadequacy ... and net CRR payments”). See also Report at 199-200, and Fig. 170.

Powerex has previously recommended that CAISO consider modifying the definition of CRRs such that holders are not guaranteed a fixed quantity across all hours and days of the CRR's term. Rather, prior to the deadline for submitting offers into the CAISO's day-ahead market (*i.e.*, prior to 10 a.m. each day), CAISO would adjust the volume of CRRs held by participants on applicable paths, to accurately reflect the updated transmission topology to be used in the day-ahead market.<sup>3</sup> This approach would be consistent with the physical transmission rights made available under the *pro forma* OATT, where holders of firm transmission rights bear the risk that they will be unable to use the full amount of their reservations as a result of de-rates or outages on the transmission system.

Powerex requests that CAISO analyze the extent to which such a proposal would have reduced or avoided revenue inadequacy, and the extent to which it may have improved the net CRR payment from auctioned CRRs. Specifically, the analysis would apply CRR volumetric de-rates for each applicable hour based on the latest transmission network topology known prior to 10 a.m. of the day prior to the trading day. It would then re-calculate the payments to CRR holders based on these adjusted volumes, and also re-calculate the net CRR payment.<sup>4</sup>

Powerex expects this approach would eliminate revenue inadequacy associated with transmission topology deviations between the CRR SFT model and the morning of the day-ahead market run.<sup>5</sup> Some topology changes occurring closer to the time that the day-ahead market initializes may perhaps remain, but Powerex expects these to be relatively small.

*2. Releasing only CRRs for source/sink pairs that can be used for hedging physical deliveries may substantially reduce the sale of CRRs that experience systematic negative net CRR payments*

The Report finds that “[a]bout 56 percent of all net CRR payments accrued on CRRs awarded ... from generation location to generation location, while over 85 percent of all

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<sup>3</sup> There are likely to be multiple potential approaches to adjusting the volume of individual CRRs. These should be explored with stakeholders to identify the most efficient approach.

<sup>4</sup> The change in net CRR payment will not simply be equal to the change in revenue inadequacy, as this latter amount is for all CRRs, not just those CRRs released in the auctions. It should also be recognized that this analysis must assume there is no change in the CRR auction revenues, which cannot be known at this time.

<sup>5</sup> Powerex notes that such a proposal may go beyond simply eliminating revenue inadequacy in the aggregate, since the CRR volumes would be adjusted such that outstanding CRRs are simultaneously feasible under the updated transmission topology. As a result, this proposal could achieve net day-ahead congestion rent surpluses to the extent there is day-ahead congestion on transmission constraints that are not fully encumbered under CRRs.

net CRR payment accrued on CRRs from supply to supply locations.”<sup>6</sup> By implication, CRRs defined from supply locations to sink locations either experienced relatively small levels of net CRR payment, or resulted in net CRR *revenue* to CAISO (*i.e.*, CRR auction revenues exceeded the payments to auctioned CRRs).

The Report does not explain precisely why net CRR payments for supply-to-supply CRRs are worse (from the CAISO’s perspective) than for supply-to-load CRRs. However, Powerex believes that CRRs that represent physical delivery paths between supply and load may experience higher liquidity—and hence more robust price discovery—than CRRs between other locations.

Other findings in the Report indicate that low liquidity in certain types of CRRs may be an important factor. Specifically, the Report finds that “[a]bout 45 percent of the total volume of CRR awards in both the annual and monthly auctions has been for unique CRRs source-to-sink definitions with one single award.”<sup>7</sup> The Report does not break down these “low liquidity” CRR awards based on the type of sink or source location, which may be helpful to identifying ways to improve auction performance.

In addition, hedging physical delivery costs, which Powerex understands is the core purpose of CRRs, can involve acquiring one or more CRRs between the locations of the physical delivery and the liquid forward trading hubs, for which there will tend to be multiple willing sellers and multiple willing buyers (*e.g.*, from a generator or import location to the NP15 or SP15 Trading Hub, or from the NP15 or SP15 Trading Hub to an LSE’s DLAP or an export location). In contrast, speculation on day-ahead congestion currently can be conducted on thousands of different paths, by acquiring CRRs between *any* two locations on the CAISO grid. By carefully selecting CRR source and sink locations, a market participant can currently narrowly isolate the specific transmission elements whose availability the participant wishes to speculate on, and may often face limited competition in the CRR auction process associated with that particular constraint. Powerex recommends that the CAISO examine whether limiting CRRs only to paths that have a trading hub as either the source or sink (or both) would be beneficial to focusing CRR liquidity on fewer available paths in the CRR auction process, helping address the negative aggregate CRR net payments while preserving the core purpose of CRRs as hedging instruments for physical deliveries.

Powerex believes it would also be beneficial to better understand the underlying causes of the disproportionately large net CRR payments for CRRs from supply locations to supply locations. Do these types of CRRs experience greater levels of revenue inadequacy, perhaps due to increased sensitivity to outages on specific transmission

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<sup>6</sup> Report at 6. See also 53-55 and Tbl. 1. Powerex notes that the sign convention in Table 1 appears to be the opposite of the sign convention used elsewhere in the Report. That is, in Table 1 a *positive* net CRR payment indicates that CRR auction revenues were less than payments on auctioned CRRs.

<sup>7</sup> Report at 5, 27-28.

constraints? Or do these CRRs simply sell for lower (or zero) prices in the auction, as there may only be a single participant competing to acquire CRRs that utilize a specific transmission constraint? Powerex believes it would be beneficial for CAISO to expand Table 1 to also show the amount of revenue inadequacy associated with each type of auctioned CRR. This would, among other things, allow stakeholders to estimate what the net CRR payments for each type of auctioned CRR would have been if CRR holders—rather than load customers—bore the risk of transmission outages or changes in network topology.

Powerex remains committed to helping identify enhancements to the CRR framework. Past results indicate that improvements are both possible and necessary, and the CAISO's Report provides extensive and detailed analysis that can help identify key areas for improvement.