Comments of Powerex Corp. on
Congestion Revenue Rights Auction Efficiency Track 1B Straw Proposal

Submitted by	Company	Date Submitted
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Powerex appreciates the opportunity to submit comments on CAISO's April 19, 2018 Congestion Revenue Rights ("CRR") Auction Efficiency Track 1B Straw Proposal ("Straw Proposal"). In the Straw Proposal, CAISO proposes to begin reducing payments to CRR holders after the close of the day-ahead market to reflect constraints that result in revenue inadequacy due to the transmission capacity available in the day-ahead market being less than the capacity modeled in the CRR auction. CAISO explains that implementing a "targeted reduction of congestion revenue rights payouts on a constraint by constraint basis ensures congestion revenue shortfalls due to unforeseen outages will not drive a large payout obligation to load."[1]

CAISO notes that a number of stakeholders suggested that CAISO eliminate the existing CRR auction in an attempt to address CRR revenue inadequacy, but that it has decided that these proposals would have the effect of increasing transactional costs and raise a host of legal and regulatory issues. As Powerex has explained in its earlier comments in this proceeding, CRRs ensure open access by allowing market participants that seek to deliver physical power over the grid to hedge their exposure to congestion costs by entitling the holder of a CRR to revenues equal to the difference in congestion between the point of receipt ("POR") and point of delivery in each hour of the day-ahead market. Powerex believes that CRRs promote a liquid and competitive wholesale market by providing market participants with the certainty necessary to enter into forward contracts for the delivery of physical supply. Powerex applauds CAISO's decision not to pursue proposals that would have the effect of eliminating the existing CRR auction, and strongly supports CAISO's continued efforts to address CRR revenue inadequacy and improve the efficiency of the CRR framework.

As discussed further below, Powerex supports the Straw Proposal's CRR payment adjustment as an interim measure to allocate CRR revenue inadequacy to the entities that hold CRRs. Powerex believes this is a major improvement over the *status quo,* under which one group of participants benefits from CRR revenues funded in substantial part by an entirely different group of participants that bear the burden of

[1] Straw Proposal at 26.

CRR revenue inadequacy. Powerex notes that the Straw Proposal approach has some important limitations, and hence supports its implementation only as an interim measure that can be in place for CRR settlement in 2019. Powerex urges CAISO to pursue more comprehensive long-term changes to its CRR framework as part of Track 2 of this proceeding. More specifically, Powerex supports development and implementation of an approach that:

1. more efficiently de-rates CRR quantities; and
2. does so *prior to the day-ahead market run*

Powerex believes this can be achieved through the development of a daily process that effectively re-runs the simultaneous feasibility test as part of Track 2 of this initiative.

Powerex also believes that Track 2 of this initiative must include a comprehensive evaluation of the efficiency and efficacy of the existing CRR allocation framework. As described further herein, Powerex believes that the existing CRR allocation framework has the effect of inefficiently "stranding" large quantities of CRRs, to the detriment of both LSEs and suppliers that seek to obtain CRRs to hedge potential forward contracts for physical delivery. Powerex believes this is resulting in a reduction in forward market liquidity for wholesale energy, fewer supply options for serving California load, and likely having a material effect on the overall energy costs to California consumers. In addition to "stranding" CRRs, Powerex believes the existing allocation of CRRs to LSEs leads to high levels of inefficient self-scheduling of external supply in the CAISO's day-ahead and real-time markets, thereby exacerbating operating challenges on the CAISO grid. For these reasons, Powerex urges CAISO to consider replacing the current CRR allocation mechanism with an alternative framework, such as auction revenue rights, that achieves the allocation's equity objectives without encumbering critical congestion-hedging CRR instruments.

I. Powerex Supports CAISO's Proposal To Reduce CRR Payouts As An Interim Measure To Address CRR Revenue Inadequacy

As CAISO acknowledges in the Straw Proposal, whenever transmission service is sold on a forward basis (*e.g.*, on a month-ahead, quarter-ahead, or year-ahead basis), it is inevitable that there will be periods in which the actual transmission capacity that is available for use in the day-ahead market is less than the quantity sold on a forward basis, resulting in a shortfall between day-ahead market congestion charges and the anticipated payments to CRR holders (*i.e.*, CRR revenue inadequacy). In practice, Powerex believes that there are three options for addressing the potential for CRR revenue inadequacy associated with such changes in system topology:

1. Reduce the amount of transmission capacity sold on a forward basis;

2. Socialize the cost of de-rates by allocating any resulting revenue shortfalls to load on a load ratio basis; or

3. Allocate the costs and risks associated with de-rates to all entities holding CRRs on the affected transmission paths.

Each of these approaches has potential advantages and disadvantages. For example, reducing the amount of transmission capacity sold on a forward basis may reduce the potential for CRR revenue inadequacy, but it also undermines open access by preventing market participants from obtaining the CRRs necessary to support forward contracts for physical supply.

Similarly, the current approach provides the advantage of guaranteeing payouts to CRR holders (ensuring CRRs remain fully effective as hedge instruments for forward contracting), but achieves this by inequitably allocating the costs associated with any shortfalls to LSEs, which do not cause these costs to be incurred and may not receive any of the CRR payments associated with the particular constraint(s) causing the shortfall.

Finally, allocating the costs and risks associated with de-rates to all of the specific entities holding CRRs on the affected transmission constraint ensures that CRR holders bear the risks associated with CRR revenue inadequacy, but results in an "imperfect hedge" against congestion charges. Ultimately, Powerex believes that the goal when choosing among these options should be to select a solution that addresses the potential for CRR revenue inadequacy in the most efficient manner possible and allocates associated costs equitably, while remaining consistent with the core purpose of CRRs in ensuring open access.

In that regard, Powerex supports the Straw Proposal as an important step toward ensuring that the consequences of the inevitable divergence between transmission capability sold on a forward basis and the transmission capability available in the day-ahead market is borne by the specific entities that hold CRRs on the affected constraints. The Straw Proposal will eliminate the current framework, under which CRR revenue inadequacy is socialized to load customers on a load-ratio share basis, and replace it with a framework in which CRR holders bear these costs. Powerex supports this approach.

Powerex recognizes that the Straw Proposal was designed in large part by CAISO's desire to implement the Track 1B changes in time for CRR settlement in 2019. The objective of timely implementation necessarily limited CAISO's consideration of more comprehensive and efficient alternatives. For this reason, Powerex supports the Straw Proposal for implementation on an interim basis in 2019 only, and urges CAISO to

move quickly to Track 2 to develop longer-term solutions that overcome the limitations of the Straw Proposal design.

Powerex believes that longer-term solutions should seek not merely to change *who* bears the cost of CRR revenue inadequacy, but to minimize the adverse consequences of these costs. Specifically, the goals of a longer-term solution to address CRR revenue adequacy should be to:

1. Allocate the reduced transmission capability efficiently, by adjusting the quantities of CRRs in order of those that can relieve constraints at lowest cost;

2. Preserve the congestion hedging properties of CRRs by communicating any adjustments to CRR quantities prior to the day-ahead market, permitting CRR holders to modify their physical schedules in light of their adjusted CRR positions; and

3. Reduce opportunities to obtain low-price CRRs that provide high payouts specifically under conditions that either create revenue inadequacy or cause CRRs obtained for hedging purposes to be inefficiently de-rated.

Powerex believes that these goals could be achieved by an efficient process that "de-rates" CRR quantities prior to each day-ahead market run. The extent of the CRR adjustments would be identified by re-running the simultaneous feasibility test using updated information regarding the transmission available in the day-ahead market. This would ensure that the adjusted set of CRRs would, in fact, be feasible and hence would be revenue adequate, avoiding the need for any type of *ex post*, uplift-type allocation of revenue shortfall, such as the approach proposed in the Straw Proposal.

To ensure these CRR adjustments are achieved at least cost to the affected CRR holders, all CRRs would be "re-bid" based on the specific clearing prices observed for each CRR in the most recent monthly auction; this process would apply both to CRRs that were purchased through the auction and those acquired through the allocation process.[2] The CRR adjustment process would minimize the costs of the de-rates to CRRs by identifying the simultaneously feasible set of CRRs that maximizes the value (based on the most recent clearing price) of the CRRs that are preserved. These adjustments would be communicated to CRR holders prior to the day-ahead market run. Thus CRR holders will be fully informed about their effective CRR positions prior to entering into day-ahead market transactions that expose them to congestion charges.

[2] For purposes of the simultaneous feasibility test, CRRs acquired through the allocation process would be "re-bid" at the monthly market clearing price.

Powerex believes that such an approach would represent an improvement over the Straw Proposal in several important respects:

- First, such an approach would ensure that any CRR adjustments necessary to avoid CRR revenue inadequacy are allocated to those CRRs whose auction value and shift factor to the applicable constraint indicate that they can provide the adjustment at lowest total cost. By allocating any adjustments to CRRs that are the most cost-effective (*i.e.* those with the lowest market value and highest shift factor) first, this approach would ensure that any adjustments are done in the most efficient manner possible.

- Second, this approach would significantly reduce the incentive and opportunity for market participants to procure speculative CRR positions on low-price, high-payout esoteric paths with high shift factors that target transmission elements. Because this approach would reduce CRRs based on their value and applicable shift factor, CRRs targeting a specific constraint – which often have high shift factors and a low auction price – would be the first CRRs to be reduced in the event that the targeted constraint is de-rated or out of service. Powerex believes this would significantly reduce, if not eliminate, opportunities for high-payout, low-price CRRs. At the same time, by disproportionately applying the de-rate reduction to, high-payout, low-price CRRs, those CRRs that were higher priced and/or had lower shift factors to a de-rated constraint (which generally describes CRRs acquired for hedging purposes) would be less impacted by de-rates to transmission elements.

- Third, this approach also would ensure that market participants receive notice of any reductions to their transmission rights prior to the deadline for the submission of bids and schedules into the day-ahead market. By providing market participants with advance notice of any adjustments to their CRR quantities, this proposal would allow intertie market participants to make adjustments to their schedules and bids to take into account this reduction. Take, for instance, an LSE that holds CRRs from an intertie to a load aggregation point that receives notice that its CRRs have been reduced from 100 MW to 80 MW in a given hour in the day-ahead market. Because the LSE has received advanced notice of the quantity of its CRRs, the LSE can enter into a bilateral transaction with an external supplier for 80 MW in the day ahead bilateral markets, with the certainty that its CRR holdings will hedge its exposure to congestion charges in the subsequent CAISO IFM for the transaction. This is a much different outcome than the situation where a market participant only receives notice of adjustments after the close of the CAISO IFM and may have an incentive to completely forego procuring bilateral supply to support intertie

deliveries in the CAISO IFM market given the uncertainty surrounding its exposing to congestion costs. De-rating CRRs in advance of the day-ahead bilateral markets provides market participants with the certainty necessary to continue to transact supply for delivery into the CAISO IFM while calibrating their supply procurement, as well as associated CAISO offers and schedules, to reflect any reduction to their CRR holdings, as appropriate.

Powerex recognizes that development and implementation of such a proposal is likely incompatible with the implementation timelines sought by CAISO for Track 1B of this stakeholder proceeding. For that reason, Powerex does not oppose CAISO moving forward with the Straw Proposal design to reduce CRRs on an *ex post* basis, but strongly encourages CAISO to develop an approach that efficiently de-rates CRRs in advance of the day-ahead market as part of Track 2 of this proceeding.

II. Track 2 Should Explore Elimination Of The CRR Allocation Process

A. The Existing CRR Allocation Process Is Inequitable And Inefficient

Although discussion in Track 1 of this proceeding has focused primarily on the CRR auction, Powerex believes that Track 2 of this proceeding must include an evaluation of the existing CRR allocation process. As Powerex has noted in its earlier comments, Powerex believes that the CRR allocation process is a large and growing source of inefficiency in the CAISO markets. ***Although the harm caused by the existing CRR allocation framework has not yet been quantified, Powerex believes that the costs associated with the inefficiencies of the existing CRR allocation framework may well exceed any losses associated with CRR revenue inadequacy.***

Under the existing CRR allocation process, CAISO allocates CRRs to LSEs based on their proportionate share of CAISO load, with the result that larger LSEs are generally allocated a greater quantity of CRRs than smaller LSEs. Moreover, the Tier 1 Priority Nomination Process enables incumbent LSEs to re-nominate CRRs received in the prior year,[3] even as their load decreases (*i.e*. such as when load migrates to new, smaller LSEs). Importantly, there is no requirement that LSEs that receive CRRs through the allocation process use these instruments to hedge physical deliveries to serve their load. To the contrary, while an LSE may seek to obtain CRRs to hedge their exposure under an executed forward contract or in anticipation of entering into such a contract, an LSE may simply acquire CRRs for the purpose of receiving the income stream associated with congestion revenues on particular high-value paths, without any intent or requirement to enter into a forward contract at a given location.

[3] CAISO Tariff at Section 36.8.3.5.1.

To the extent that an LSE obtains a CRR through the allocation process for the purpose of deriving income from congestion charges under the existing framework—rather than to hedge a physical delivery—this CRR is effectively "stranded" and unavailable to other market participants who seek to hedge their exposure to congestion charges associated with potential forward contracts of wholesale energy for physical delivery. Because the existing CRR allocation process is not competitive, there currently is no way for an LSE or market participant that plans to use the CRR to support a forward contract for physical supply to obtain a CRR that is obtained by an LSE for income-producing purposes. This is the case even though an LSE or market participant that is seeking to obtain a CRR to hedge its physical deliveries is likely to place a higher value on the CRR than an entity that is merely holding it for speculative purposes.[4]

Powerex believes that the result of this framework is highly inefficient and acts as a barrier to the development of robust, competitive forward energy markets. In particular, Powerex believes that the existing allocation framework:

- Reduces and impedes efficient forward contracting activity by impairing the ability of both new and smaller LSEs to obtain the CRRs necessary to enter into forward contracts for physical supply; and

- Results in LSEs that receive allocated CRRs from intertie locations becoming a physical intermediary between external suppliers and the CAISO grid, with profound consequences for market efficiency and liquidity.

Each of these issues is discussed below.

1. The Existing CRR Allocation Process Disadvantages New and Smaller LSEs

Powerex believes that there is growing evidence that new and smaller LSEs are disadvantaged by the existing CRR allocation process, and is aware of numerous instances where smaller LSEs have been unable to obtain CRRs necessary to consummate forward contracts with external suppliers.

The difficulties that are faced by smaller LSEs were highlighted by Valley Electric Association, Inc. ("VEA") at the April 10 CRR Working Group Meeting. In particular, VEA noted that it is "[d]ifficult for VEA to compete with the large IOUs for scarce capacity in the allocation process."5 In order to address this issue, "VEA relies on the

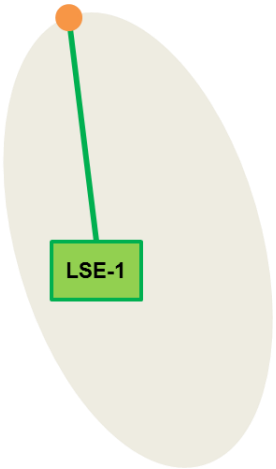
[4] *See CRR Revenue Adequacy, Auction Values, and Settlement Rules*, Presentation by Dr. Scott Harvey at 4-5 (Apr. 4, 2018).

[5] VEA Congestion Revenue Rights (CRR Discussion) (April 10, 2018), available at http://www.caiso.com/Documents/Presentation-KallieWellsReseroConsulting-Apr102018.pdf.

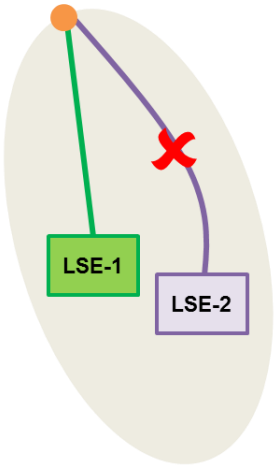
auction to reconfigure its CRR holdings." In other words, while some in this proceeding have argued in favor of elimination of the CRR auction, the CRR auction actually compensates for the inefficiencies of the existing CRR allocation framework, and is critical to the ability of smaller LSEs to obtain the CRRs necessary to hedge their exposure to congestion associated with forward contracts for physical delivery.

The net result of the existing CRR allocation process is that new and smaller LSEs may not be able to acquire sufficient CRRs to allow them to enter into forward contracts with preferred counterparties. For example, to the extent that such LSEs are unable to obtain CRRs at California interties, these LSE will be unable to enter into forward contracts with external suppliers, even if these suppliers are able to serve the LSE's load more efficiently and cost-effectively than internal resources. Even if a new/smaller LSE obtains an allocation of CRRs at an intertie, the LSE will be forced to limit their forward energy contracts to those locations where they have sufficient allocated CRRs available, even if more efficient and cost-effective supply is available at other locations. As depicted below, the existing CRR allocation framework artificially constrains the ability of market participants to engage in forward contracts, reduces supply options for smaller LSEs, and, ultimately, increases costs for California load.

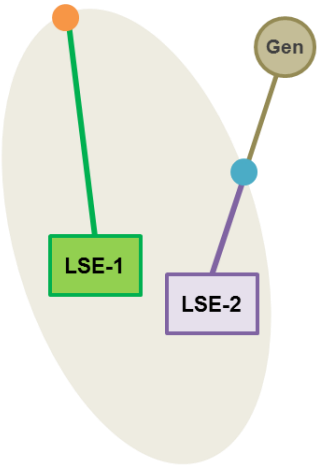
1. Intertie CRR Is Allocated To An LSE That Does Not Use It To Hedge Contract For External Supply



2. Intertie CRR Is Not Available To LSEs that Do Seek To Contract With External Supply



3. LSEs Are Forced To Contract With Supply At Higher-Cost Locations



It is important to recognize that limiting the ability of market participants to obtain the CRRs necessary to hedge their forward transactions is likely to not only reduce the liquidity of forward markets, but is also likely to reduce the supply available through CAISO's day-ahead and real-time markets as well. In practice, an external supplier that is seeking to enter into a forward transaction and is unable to acquire the CRRs necessary to enter into a forward contract at a California intertie or trading hub may

often seek to alternatively sell the output of its facility on a forward basis in external markets. To the extent that an external supplier commits its resource to serve load outside of California, it is very likely that the output of the resource will not be available to CAISO in the day-ahead and real-time markets.

In other words, artificially constraining the ability of market participants to engage in forward transactions is likely to decrease the volume of imports available from external suppliers in the day-ahead and real-time markets as well. Thus, limiting the ability of new and smaller LSEs to obtain the CRRs necessary to enter into forward contracts for physical supply not only decreases the supply options available to serve that LSE's load on a forward basis, raising that LSE's forward contracting costs as they need to seek out the next-best option for forward supply, but may also materially reduce the supply options available to the CAISO markets as a whole.

Thus far, the inefficiencies and costs associated with the growing suppression of forward contracting associated with the CRR allocation process have not been measured or quantified. Powerex believes, however, that the additional costs borne by California load as a result of these inefficiencies *have the potential to greatly exceed the costs associated with CRR revenue inadequacy*. In order to further assist CAISO and stakeholders with meaningfully evaluating the extent to which the CRR allocation process is acting as a barrier to forward contracts with external suppliers, Powerex requests that CAISO identify, on an intertie-by-intertie basis, for calendar year 2017:

- What percentage of allocated CRRs with a POR at an intertie was actually used to support day-ahead imports by the applicable LSE, with the analysis separated by intertie;

- What percentage of allocated CRRs with a POR at an intertie was simply re-sold in the auction, with the analysis separate by intertie; and

- What percentage of allocated CRRs with a POR at an intertie was unused and held simply for revenue/speculative purposes.

2. The Existing CRR Allocation Process Adversely Affects the Efficiency Of the CAISO Markets

While the previous section focused on the disadvantages imposed on smaller LSEs by the existing CRR allocation process, Powerex believes that the preferential and non-competitive allocation of CRRs to a single class of market participants has profound implications for the overall efficiency and reliability of the CAISO markets.

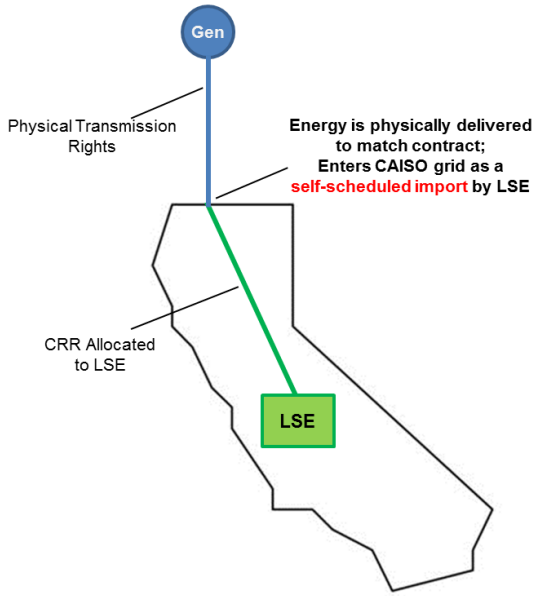
Powerex believes that one consequence of the existing CRR allocation framework, which gives LSEs preferential access to CRRs at the CAISO interties, has been to effectively make LSEs physical intermediaries between external suppliers and the

CAISO grid. Powerex believes that this approach creates significant inefficiencies in the CAISO markets and reduces CAISO's ability to effectively meet operational needs.

In practice, external suppliers seeking to enter into a forward contract with a California LSE typically will either directly contract with an end use customer to deliver ***physical power*** at the injection point of the CAISO grid (*e.g*., COB or NOB), or by entering into ***financial contracts*** at the NP15 or SP15 generating hubs). Importantly, whether an external supplier enters into a forward physical contract at the intertie or a forward financial contract at a trading hub has significant efficiency and operational implications for the CAISO markets.

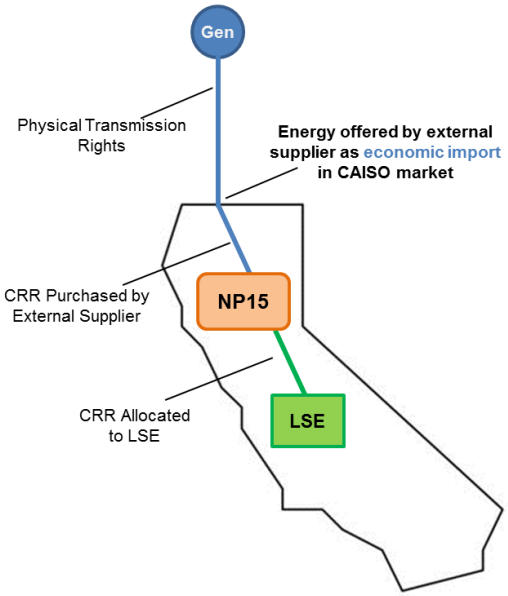
Under most bilateral physical forward contracts at intertie locations, the supplier commits to physically deliver energy to the relevant CAISO intertie in the quantity and during the hours specified in the contract. Typically, this physical power is transacted in fixed 8-hour or 16-hour blocks for entire months, quarters, or years, and the purchaser (*i.e*., the California LSE) has a "must take" obligation. In other words, after the execution of the contract, the LSE does not have any ability to change the quantity of energy delivered from hour-to-hour or day-to-day. Instead, the LSE is obligated to accept any energy delivered under the forward physical contract. In practice, LSEs typically fulfill this obligation by scheduling imports into the CAISO market as self-schedules (and/or as "price-taker" economic offers) during standard on-peak and off-peak blocks, each and every day of the forward contract. The result is that neither the LSE nor CAISO has any effective control over the volume of energy delivered, regardless of CAISO grid conditions and prevailing market prices. This is illustrated in Scenario 1, below:

Scenario 1: Allocation Results in LSE as Physical Intermediary



Under forward financial contracts, which are generally available at the two trading hubs of NP15 and SP15, however, the forward contract does not require physical delivery at all; instead, the contract is settled based on the difference between the contract price and the hourly CAISO IFM market price at the trading hub. Under this construct, the owner of the physical resource may physically deliver power to a CAISO intertie location in order to offset the settlement of the forward contract against the spot price, but, importantly, is under no forward physical obligation to do so. In other words, the supplier ***retains the flexibility*** to determine whether to import energy in a given hour or not based on market conditions and prices. In addition, since the supplier does not have any obligation to physically deliver energy, the supplier is not required to self-schedule its output, but has the flexibility to submit economic bids into the day-ahead and real-time markets, with CAISO retaining authority to schedule and dispatch the resource in accordance with applicable market rules. This is illustrated in Scenario 2, below:

Scenario 2: Auction of CRR to Trading Hug Enables Economic Bidding of External Supply



Powerex believes that the preferential allocation to LSEs of CRRs from intertie locations has a profound effect on the level of self-schedules in the CAISO's day-ahead and real-time markets. This is in contrast to the situation where the supplier delivers power to the intertie, executes a forward financial transaction at the trading hub, and owns the CRR from the intertie to the trading hub (with LSEs holding CRRs from the trading hub to their LAP). Although external suppliers that enter into forward financial contracts at the hub have the option to self-schedule in the event that they elect to physically deliver energy to the CAISO grid, the percentage of self-schedules from such entities is likely to be significantly less than where an external supplier enters into a forward physical contract with an LSE at an intertie, who, as a "physical middleman" has no alternative to self-scheduling. It has been well-documented that the existing level of self-scheduling in the CAISO markets can create significant inefficiencies and operational difficulties for CAISO, reducing CAISO's operational flexibility and exacerbating overgeneration conditions. These difficulties would only increase in the event that CAISO adopted the proposals of some commenters to restrict or completely eliminate the ability of non-LSEs to obtain CRRs.

It is important to recognize that the inability of external suppliers to obtain CRRs necessary to reach a trading hub is likely to reduce the volume and efficiency of forward contracts as well. Notably, in order for an external supplier to enter into a contract at an intertie, the external supplier must identify a counterparty that is interested in the same physical product, contract duration, and delivery period. As a practical matter, due to

the existing CRR allocation framework, there may be a limited set of counterparties that have been able to obtain CRRs at the relevant intertie, and the external supplier may not be able to find a purchaser that completely aligns in terms of product specifications or contract/delivery term or that is interested in entering into a forward physical transaction at precisely the same time as the supplier. At the trading hubs, in contrast, the markets are far more liquid, with multiple willing buyers and sellers offering a variety of products and contract durations.

As in the case of the impact of the CRR allocation process on forward contracting, the impact of the allocation process on the efficiency of scheduling in the CAISO markets has not been studied or quantified. In order to provide transparency into the impact that the CRR auction process is having on the efficiency of the CAISO markets and to provide a foundation for further dialogue in Track 2 of this proceeding, Powerex believes that it would be helpful for CAISO to breakdown self-scheduling and economic bidding activity at the CAISO interties over the course of 2017. More specifically, Powerex requests that CAISO provide the average volume of self-schedules and economic bids by intertie broken down by:

- LSEs with CRRs at that intertie;
- LSEs without CRRs at that intertie; and
- other market participants.

B. CAISO Should Explore Phasing Out The CRR Allocation As Part Of Track 2 Of This Proceeding

For the reasons discussed above, Powerex believes that Track 2 of this stakeholder process should explore eliminating the direct allocation of CRRs to LSEs. More specifically, Powerex believes that it would be appropriate for CAISO to establish a process whereby CAISO would phase out the direct allocation of CRRs to LSEs and transition to a CRR framework that requires that all CRRs be made available on a competitive and non-discriminatory basis to all market participants. During the "phase out" period, CAISO would reduce the direct allocation of CRRs such that CRRs would only be allocated to LSEs to the extent necessary to support documented pre-existing forward physical contracts. As these contracts expire, the capacity associated with these CRRs would then be made available through the CRR auction process on a competitive basis.

Powerex believes that requiring that all, or the vast majority of, CRRs be made available through a competitive process would help ensure that CRRs are made available on an efficient and non-discriminatory basis. Because all market participants would be required to bid to obtain CRRs—regardless of whether they were an LSE, supplier, or

marketer—a competitive process would ensure that CRRs were obtained by those market participants that placed a higher value on the product at a particular location. Moreover, those seeking to use the CRR for physical hedging purposes are likely to value CRRs as risk-reducing and as facilitating forward contracts, hence they are likely to place greater value on CRRs than entities that value them as risky speculative instruments.[6]

Powerex emphasizes that it supports the objective of ensuring that ratepayers that fund the grid receive the associated economic value. Powerex believes, however, that this objective can be accomplished by the use of Auction Revenue Rights ("ARRs"). Under an ARR approach, LSEs would be required to bid for CRRs in the auction along with other market participants, with the ARR acting as a hedge against the auction price for the locations and quantities associated with their allocated ARRs. Thus, much like a direct allocation framework, an ARR framework would allow LSEs to obtain CRRs necessary to hedge congestion charges associated with forward contracts to serve their load at no net additional charges. In contrast to the direct allocation framework, however, LSEs would be required to compete with other market participants to obtain forward transmission rights through an open and non-discriminatory process.

In addition, although it is theoretically possible that an LSE could obtain the same CRR portfolio with the use of ARRs as under the existing CRR allocation process (resulting in the same issues described above), Powerex believes that this is unlikely to happen in practice. For instance, an LSE that sought to hold a CRR solely for speculative purposes would be required to compete with other market participants in the CRR auction process to obtain the CRRs at issue by submitting an economic or price-taker bid over the path at issue. As a practical matter, however, it may be difficult for an LSE to justify the costs of obtaining CRRs over a path that is unconnected to the LSE's purchase of energy to regulators and management. By making the process of bidding for and acquiring CRRs more transparent, Powerex believes LSEs will be encouraged to compete only for those CRRs that provide risk-hedging value to its customers.

[6] *See* presentation by Dr. Scott Harvey at February 2, 2018 meeting of the CAISO Market Surveillance Committee, *available at:* http://www.caiso.com/Documents/Presentation-CRRValuationFeb22018.pdf.