

**Comments of Powerex Corp. on
Congestion Revenue Rights Auction Efficiency Track 1 Draft Final Proposal**

Submitted by	Company	Date Submitted
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Powerex appreciates the opportunity to provide comments on CAISO’s February 8, 2018 Congestion Revenue Rights Auction Efficiency Track 1 Draft Final Proposal (“Draft Final Proposal”).¹ In the Draft Final Proposal, CAISO outlines a number of short-term changes that it proposes to make in order to improve the existing Congestion Revenue Rights (“CRR”) allocation and auction processes.

Powerex strongly supports CAISO’s continued efforts to improve the efficiency of its existing CRR framework. CRRs are the instrument through which the CAISO provides open access to its grid on a forward basis. CRRs achieve this objective by allowing the holder to effectively avoid being exposed to the highly variable hour-to-hour costs of day-ahead congestion between the CRR source and sink. This, in turn, provides the fixed-price congestion cost certainty necessary for parties to enter into fixed-price forward contracts for physical energy supply. The availability of CRRs is crucial to this forward contracting activity. Consequently, when access to CRRs is restricted—either because they are not sold at all, or because they are allocated in an inefficient manner—the efficiency of forward contracting suffers.

It has become clear in this stakeholder process that some parties do not share this perspective on the role of, and need for, CRRs. These parties appear to judge the efficacy of the present CRR framework based solely on how much direct revenue it generates for one specific subset of market participants (*i.e.*, load-serving entities (“LSE”)). These parties do not appear to accept the well-established and critical role of CRRs in providing forward open access to the CAISO transmission grid, or the importance of such open access to supporting efficient and competitive forward contracting of energy products and services. These parties further advocate that only LSEs should be eligible to receive CRRs supported by the CAISO’s transmission capacity; with generators, importers and all other non-LSE entities being limited to purchasing CRRs only to the extent there is a

¹ California Indep. System Operator Corp., Congestion Revenue Rights Auction Efficiency: Track 1 Draft Final Proposal (Feb. 8, 2018), *available at* <http://www.caiso.com/Documents/DraftFinalProposal-CongestionRevenueRightsAuctionEfficiency-Track1.pdf>.

“willing seller” of the desired CRR path(s), at a mutually agreeable price. Powerex strongly disagrees with these views.

Although Powerex strongly disagrees with the drastic measures proposed by these parties, Powerex fully acknowledges that there are significant inefficiencies in the current design of CRRs, as well as in the CRR allocation and auction processes; Powerex believes that there is an urgent need to address these inefficiencies, and it supports the CAISO’s efforts to identify and implement targeted and timely solutions to these challenges.

Powerex also acknowledges that it is appropriate for load, as the customers that ultimately backstop the revenue requirement for the existing transmission grid, to receive the revenues that are collected from users of the grid. This does not mean, however, that the primary purpose of offering transmission service to other users should be to maximize the transmission revenues on behalf of load customers. To the contrary, the Federal Energy Regulatory Commission (“FERC”) has made clear that the core purpose of open access transmission service is to facilitate efficient, competitive, wholesale energy markets.²

Importantly, these principles apply equally to both physical and financial transmission service, including CRRs, as well as to both forward and short-term transmission service. For instance, under the *pro forma* Open Access Transmission Tariff (“OATT”), both forward and short-term physical transmission service is offered to all types of transmission customers in an open and non-discriminatory manner. This open access to available transmission capacity facilitates efficient wholesale energy market transactions. The revenues collected from the sale of OATT point-to-point transmission service under cost-based tariff rates reduce the rates charged to native load customers, who ultimately backstop the revenue requirement to fund the transmission facilities. But this does not give native load customers a right to “veto” the sale of point-to-point service, to unilaterally set a price at which the transmission provider may provide service on any given path, or to demand that such service be offered only on a daily or hourly basis. Restricting service in that manner would clearly contravene open access principles and would undermine efficient and competitive wholesale energy markets, even if it might provide greater transmission revenues to the benefit of native load customers. The proposals put forward by certain parties in this proceeding are flawed in precisely the same way, and for the

² *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 (1996) (stating that the purpose of open access “is to remove impediments to competition in the wholesale bulk power marketplace and to bring more efficient, lower cost power to the Nation’s electricity consumers”).

same reason: they advocate restricting the availability of CRRs from the CAISO for the primary purpose of increasing the net transmission revenues delivered to California load customers.

Powerex believes that the key objective that should drive enhancements to the CRR framework should be ensuring that CAISO's forward transmission capacity is awarded in the most efficient manner possible, with the costs of transmission service allocated equitably. This goal is not limited merely to examining the design of the CRR auction process, however, as the majority of congestion payments to CRRs are associated with CRRs provided directly to LSEs through the CRR allocation process.³ Consequently, concerns over the efficiency and allocation of the costs of the CRR framework also arise in the context of the allocation of CRRs among LSEs. Furthermore, concerns regarding CRR revenue inadequacy are not limited just to auctioned CRRs, but apply also to allocated CRRs. This means that specific LSEs that obtain allocated CRRs across constraints that exacerbate revenue inadequacy will receive CRR revenues funded by other LSEs that do not hold those allocated CRRs. In Powerex's experience, it is often the larger, more experienced LSEs that are able to acquire larger quantities of allocated CRRs on multiple CRR paths, including paths that may experience significant de-rates that contribute to revenue insufficiency. Other LSEs—who do not receive an allocation of CRRs on these paths—ultimately bear a disproportionate share of this revenue inadequacy; this burden is the same regardless of whether CRRs are allocated or auctioned, and regardless of whether the CRRs are held by other LSEs or by a different category of market participants.

Powerex believes that it is inaccurate and counterproductive to frame this stakeholder process in a way that pits one type of market participant against another, when, in fact, the harm associated with inefficiencies in the CRR framework cut across the different categories of market participants.

As discussed more fully below, Powerex provides the following comments regarding the Draft Final Proposal:

- Restricting the availability of CRRs only to California LSEs would violate open access principles, impair forward contracting of energy products and services,

³ CAISO's November 21, 2017 *CRR Auction Analysis Report* includes summary statistics on CRR payments for each of the ten months from August 2016 through May 2017. In all but one month (January 2017), the CRR payments to auction CRRs was less than the CRR payments to allocation CRRs. Cal. Indep. Sys. Operator Corp., CRR Auction Analysis Report at 89, 101, 113, 124, 135, 146, 157, 168, 178, 189 (Nov. 21, 2017).

disproportionately harm smaller LSEs, and threaten the reciprocity framework that ensures non-discriminatory and open transmission access throughout the west.

- Powerex supports the specific Track 1 proposals. In particular, Powerex believes the limitations on eligible CRR source and sink locations support physical hedging and reduce opportunities for auction participants to benefit from speculation on illiquid constraints.
- Powerex believes Track 2 should explore more fundamental changes to improve the efficiency of the CRR framework. In particular, Powerex believes revenue inadequacy can be largely addressed through volumetric de-rates of awarded CRRs, communicated prior to the day-ahead market. Powerex also believes this track should explore eliminating the direct allocation of CRRs, such that the entire capability of the CAISO grid is made available through a competitive and efficient process.

I. CRRs Are Critical To Ensuring Open Access And Efficient Forward Contracting For Physical Energy

A. DMM's And SCE's Proposals Are Inconsistent With Open Access Principles And Requirements

In the course of this proceeding, a number of parties have suggested changes to the existing CRR allocation and auction structure that would have the effect of limiting the availability of CRRs to the vast majority of market participants. More specifically, the CAISO Department of Market Monitoring (“DMM”) has advocated for the wholesale elimination of the CRR auction process, with all CRRs being allocated to one class of market participant—LSEs. Similarly, Southern California Edison (“SCE”), proposes a structure whereby all CRRs would be allocated to LSEs, with non-LSEs only able to purchase a CRR over a given path if they are able to find a counterparty willing to take the opposite side of the transaction (*i.e.*, a party would only be able to purchase a CRR from point A to point B if it was able to find another party to sell a CRR from point A to point B, at a mutually agreeable price). At their core, these proposals appear to be founded upon the belief that only LSEs (and their customers) should derive economic benefit from using the transmission system.

Powerex believes that these proposals are fundamentally inconsistent with basic principles of open access. As FERC has repeatedly recognized, non-discriminatory open access to the transmission system is a foundational principle of FERC policy and a necessary precondition to efficient and competitive wholesale markets for electric energy. Importantly, open access does not mean that LSEs or transmission owners should have preferential access to the transmission system. To the contrary, open access requires

that all prospective customers – whether they are an LSE, a generator, or a marketer – be given the same opportunity to request and reserve transmission service. In a system of open access, transmission rights are allocated through an open and competitive process, and not based on the identity or affiliation of a customer.

Outside of organized markets, open access is ensured by requiring transmission providers to provide service in accordance with a Commission-approved OATT. The OATT establishes, among other things, an open and non-discriminatory process through which all transmission customers have an equal opportunity to request and reserve both short-term and long-term firm point-to-point transmission service. The ability to reserve firm transmission service allows customers to hedge their exposure to the risk of congestion over a particular desired path, with firm rights holders given scheduling priority over customers that have non-firm service. The certainty that firm transmission reservations provide, in turn, supports the ability of suppliers and customers to enter into forward transactions for energy, thereby promoting market liquidity and efficiency.

In organized markets with locational marginal pricing, however, it is financial transmission rights (“FTR”), including CRRs, that serve to provide forward open access to the transmission grid. As FERC has recognized, FTRs “serve as the financial equivalent of firm transmission service and play a key role in ensuring open access to firm transmission service . . . by providing a congestion hedging function.”⁴ More specifically, CRRs allow entities delivering or receiving physical power to hedge the financial risks associated with congestion that causes hourly day-ahead prices to differ from the price at the location specified by the forward contract. CRRs achieve this objective by entitling the holder to revenues based upon the difference in congestion between the point of receipt and point of delivery each hour in the day-ahead market.

The availability of CRRs, in turn, facilitates forward contracting and promotes a competitive and liquid market for energy by providing market participants with a mechanism to hedge their exposure to congestion costs associated with physical delivery of energy at locations that differ from the locations of their forward contracts. In particular, by procuring CRRs, market participants are able to obtain the price certainty necessary to make forward purchases and sales at a wide variety of locations within CAISO, including at the liquid trading hubs at NP15 and SP15. Notably, the ability of a supplier, whether a generator, an importer, or a marketer, to transact at these locations depends on its ability to obtain CRRs to lock-in the congestion cost from its delivery location to the relevant hub of its forward contract. For instance, in order to obtain the price certainty necessary to enter into a yearly, quarterly, or monthly contract for forward delivery at

⁴ *PJM Interconnection, L.L.C.*, 158 FERC ¶ 61,093 at P 27 (2017).

NP15, an external supplier will need to obtain a CRR, hedging its congestion price risk between the relevant intertie and NP15 for each hour of the forward contract. Similarly, the purchaser will need to obtain a CRR hedging its exposure to the risk of congestion between NP15 and the buyer's load. In short, non-discriminatory access to CRRs facilitates the ability of suppliers and purchasers to enter into contracts at multiple locations, including liquid forward trading hubs, and promotes a robust and competitive market for energy products and services.

Powerex believes that adopting DMM's or SCE's proposal would spell nothing short of the end of open access on the CAISO grid. In contrast to the non-discriminatory and competitive process envisioned under open access, these proposals would result in one class of market participant—LSEs—receiving exclusive access to CRRs as a matter of right and without having to compete with other market participants.

Implementation of DMM's or SCE's proposals would have important consequences both for suppliers and for LSEs. In the case of suppliers, DMM's and SCE's proposals would have the effect of rendering suppliers captive to the specific LSE (or the limited set of LSEs) holding CRRs from the supplier's physical energy delivery location. Without access to the CRRs necessary to be able to sell its output at other points on the CAISO grid, particularly at the more liquid forward trading hubs, a supplier would have very few potential counterparties for a forward contract. It is not difficult to imagine a scenario in which the larger CAISO LSEs are able to use their ability to receive large allocations of CRRs from suppliers' delivery locations, limiting each supplier's forward contracting options and extracting better terms and conditions from these captive suppliers.

Adopting DMM's and SCE's proposals would also harm LSEs, and particularly smaller LSEs such as Community Choice Aggregators ("CCAs"), in two distinct ways.

First, smaller LSEs are likely to be more dependent than large LSEs on the CRR auction to make CRRs available to support forward contracts for physical energy supply. As a practical matter, most allocated CRRs on valuable paths are likely to be acquired by the larger, incumbent LSEs, since CRRs are allocated to individual LSEs based on their proportionate share of CAISO load. Smaller LSEs that are unable to acquire sufficient allocated CRRs to support their desired forward energy contracts would no longer be able to supplement these allocated CRRs with CRRs acquired through the auction process (either by the LSE or their counterparty). This would likely result in smaller LSEs either limiting their forward energy contracts to locations where they have sufficient allocated CRRs or being forced to negotiate with the larger LSEs to purchase CRRs that the large LSE was allocated but does not intend to use for physical hedging. In many respects, such a framework would raise challenges for smaller LSEs that are similar to the challenges presented today by the inefficiencies of the framework used to allocate intertie

capacity for the purpose of California's Resource Adequacy program (*i.e.*, the Maximum Import Capability, or "MIC", allocation process).

Second, the elimination of open access to forward transmission rights on the CAISO grid, as proposed by DMM and SCE, would likely make California a less attractive market for forward contracting by external suppliers in the region, reducing the forward energy supply choices available to *all* California LSEs over time. Unlike generators located within the CAISO footprint, external suppliers have numerous options available to them to sell their supply. Restricting access to liquid trading locations in California could increase the cost of transacting with California parties (in particular, the cost of holding transmission service to the boundary points). In light of the higher cost of doing business and the availability of other options, it should be expected that external suppliers would seek to commit their supply to more competitive external forward markets, where there are many purchasers and sellers, and where transmission service to liquid trading locations is available in an open and non-discriminatory manner.

B. The Day-Ahead And Real-Time Markets Are Not Sufficient To Ensure Open Access

DMM dismisses concerns regarding the impact of its proposal on open access on the basis that participation in the day-ahead and real-time markets is sufficient to ensure open access. Powerex believes that this reasoning is flawed in several respects.

As an initial matter, the availability of transmission capacity on a long-term, forward basis is a critical component of open access. There is simply no basis on which to conclude that open access requires only that customers be given access to transmission capacity on a day-ahead or real-time basis.

The flaws in DMM's reasoning are highlighted by considering the implications of extending this logic to the transmission systems of external transmission providers. Currently, California LSEs benefit from the ability to obtain forward firm point-to-point transmission service from adjacent transmission providers to deliver the output of renewable projects located in other states. There is little doubt that California LSEs would strenuously object if these external transmission providers began offering long-term firm physical transmission service only to LSEs within *their* service territories. A similar outcome would occur, if, alternatively, these external transmission providers converted their OATT transmission service frameworks to FTRs, perhaps as part of regionalization efforts, and then allocated CRRs exclusively to *their* LSEs. The result would be that California LSEs would have no way of mitigating their exposure to congestion on external transmission systems; instead these California entities and/or their renewable energy suppliers would be subject to congestion risk on an hourly/daily basis for the duration of their long-term energy contracts. This lack of certainty would significantly impair the

ability of California LSEs to enter into forward transactions for energy with external suppliers in the first place. Consequently, without access to the forward transmission rights necessary to deliver their external output to California, it is likely that the development of external resources to serve California needs would stall. The result would be fewer supply options and less efficient procurement by California LSEs.

In addition, DMM's reasoning overlooks that allocating CRRs exclusively to LSEs may have the practical effect of blocking market participants from receiving open access to the CAISO grid ***even in the day-ahead and real-time markets***. In Powerex's experience, California LSEs that are allocated CRRs at intertie locations typically enter into monthly, quarterly, or annual forward purchases in the bilateral markets for industry standard on-peak and off-peak multi-hour blocks of energy. Because these contracts require the purchaser to take the delivery of the forward purchased energy, the result is that California LSEs typically import the associated energy by submitting self-schedules in CAISO's day-ahead market during each hour of the multi-hour delivery block for the duration of the forward energy contract. If all intertie CRRs were allocated to California LSEs, as proposed by DMM, virtually all intertie capacity may become encumbered by inflexible self-schedules from California LSEs, effectively eliminating the ability of other entities to deliver energy in CAISO's day-ahead and real-time markets.⁵ CAISO's day-ahead and real-time market would simply be unable to provide meaningful open access in the face of large amounts of schedules that do not respond to day-ahead and real-time market conditions and prices.

For the foregoing reasons, Powerex urges CAISO to continue to resist calls by DMM and SCE to reverse course and pursue changes to the CRR framework that would have the effect of restricting the availability of CRRs to only LSEs.

II. Proposed Enhancements To The CRR Framework

While Powerex disagrees with the approaches advocated by DMM and SCE, Powerex does agree that steps should be taken to correct inefficiencies and inequitable outcomes in the existing CRR framework and to protect against further revenue inadequacy. As Powerex has noted in its earlier comments, Powerex believes that the persistent revenue inadequacy is largely the product of two factors: (1) limited liquidity for certain combinations of CRR sink/source pairs; and (2) changes in transmission topology between the CRR auction and the day-ahead market.

⁵ Furthermore, an increase in such self-scheduling behavior would greatly exacerbate CAISO's operational challenges. Inflexible scheduling contributes to oversupply challenges—for example, by importing blocks of energy during the belly of the duck hours—and inefficiently consumes intertie capacity that could otherwise be used to provide flexible supply.

A. Powerex Supports CAISO's Proposal To Limit Allowable Source/Sink Pairs In The CRR Auction

In the Draft Final Proposal, CAISO proposes to restrict the CRR auction to source and sink pairs associated with the delivery of physical supply. More specifically, CAISO proposes to only accept CRR bids sourcing and sinking: (1) from a generator bus to a load aggregation point, a trading hub, or scheduling point; (2) from a trading hub to a load aggregation point or trading hub; and (3) from scheduling points to a load aggregation point or trading hub. Conversely, CAISO explains that it will no longer accept CRR bids for generator-to-generator source and sink combinations. CAISO states that it believes that its proposal will strike an appropriate balance between allowing physical market participants the ability to obtain hedges for supply delivery while preventing strategic bidding behavior aimed at exploiting the CRR auction.

Powerex strongly supports CAISO's proposal to limit the CRR auction to source/sink pairs associated with physical delivery. In particular, Powerex believes that CAISO's proposal will better align the CRR auction process with the core purpose of CRRs by ensuring that market participants are able to obtain CRRs necessary to hedge their exposure to congestion charges for forward physical delivery arrangements and limiting the availability of CRRs over paths that are not associated with the delivery of physical supply. Powerex agrees that CAISO's analysis demonstrates that there is little to no efficiency benefits associated with the sale of CRRs over sources and sinks that are unrelated to supply delivery. Powerex emphasizes that it does not believe that only physical suppliers should be permitted to acquire CRRs. To the contrary, Powerex believes that financial intermediaries can play an important role in promoting competitive CRR auction outcomes and price discovery by increasing demand over physical supply paths. Nevertheless, Powerex agrees that limiting the availability of CRRs that are unrelated to the delivery of physical supply and over paths that are used purely for financial speculation will enhance auction efficiency and reduce CRR revenue inadequacy.

Powerex believes that CAISO's proposal could be enhanced by further limiting the eligible paths over which CRRs may be requested. Specifically, Powerex believes CAISO should consider further restricting the CRR auction such that the only CRRs that are made available are CRRs with a source and/or sink at a forward trading hub of NP15 or SP15. Powerex also believes that it would be appropriate to limit the source/sink combinations available through the CRR allocation process in the same manner, such that the only CRRs available are those that source and/or sink at a forward trading hub of NP15 or

SP15.⁶ Powerex believes that limiting the CRRs available through both the CRR auction and the CRR allocation process to CRRs with a source and/or sink at a forward trading hub will have the benefit of:

- Driving forward contracts to the trading hubs, increasing forward liquidity at the trading hubs, and reducing forward physical contracting at supply locations, where the large, incumbent LSEs have become inefficient intermediaries between suppliers and the CAISO, systemically self-scheduling forward contracted supply to the CAISO grid;
- Making a greater quantity of CRRs from physical supply locations available to all market participants, thereby improving open access to CRRs, resulting in the entities that place the greatest value on the CRRs receiving them, including to support forward energy contracts involving smaller LSEs, such as CCAs; and
- Improving competition in the CRR auction process by reducing the number of CRR paths available and focusing CRR auction competition on fewer paths.

B. Powerex Supports Reducing The Percentage Of System Capacity Available In The Annual Allocation And Auction Process On An Interim Basis

As CAISO has previously explained, one of the primary causes of CRR revenue inadequacy is transmission capability that is modeled as available in the CRR model being unavailable in the day-ahead market. When this occurs, payments to outstanding CRRs can exceed the congestion rents actually collected by CAISO in the day-ahead market. This leaves a revenue shortfall that must be resolved.

In the Draft Final Proposal, CAISO proposes to conservatively reduce the percentage of system capacity available in the annual CRR allocation and auction process, with the goal of more accurately reflecting the quantity of transmission capacity that may actually be available. More specifically, CAISO states that it will reduce the percentage of transmission system capacity released through the annual CRR allocation and auction process, with a greater portion of CRRs released through the monthly process. CAISO

⁶ An exemption from this requirement might be appropriate under circumstances in which an LSE demonstrates a need for a CRR between a source location and load in order to support pre-existing physical supply contracts.

explains that its proposal should reduce CRR revenue inadequacy “as the CAISO has more information about the ultimate state of the transmission system in the monthly process timeframe and can model the transmission ultimately available more accurately.”⁷

Powerex agrees that CAISO’s proposal to increase the percentage of CRRs allocated and auctioned through the monthly process will reduce the potential for discrepancies between the CRR model and actual transmission availability. However, Powerex notes that this is one of three potential approaches to addressing CRR revenue inadequacy associated with changes to the transmission grid (*i.e.*, transmission derates and outages). These three approaches are as follows:

1. Reduce the quantity of transmission capacity (and hence the quantity of CRRs) made available on a forward basis through the CRR allocation and auction processes in order to reduce the potential that the outstanding CRRs are not simultaneously feasible in the day-ahead market. This is the approach proposed in the Draft Final Proposal for the annual CRR allocation and auction process. The CAISO is effectively proposing to sell fewer CRRs in its annual process in order to reduce the risk of having “too many” outstanding CRRs relative to the transmission capacity actually available in the day-ahead market (and volume of congestion rents collected across that constraint in any given period).
2. Guarantee the full quantity of CRRs allocated and sold to each CRR holder—regardless of the volume of transmission capacity available, and congestion rents collected, each hour and each day—by effectively allocating the shortfall in transmission capacity to LSEs, on a load ratio share basis. This is the approach under the existing CRR framework.
3. De-rate the volume of CRR holdings each day to reflect prevailing grid conditions, which effectively allocates the consequences of changes in transmission system capability specifically among the entities that elected to obtain CRRs across the applicable constraint(s).

Powerex agrees with CAISO and with numerous stakeholders that the current approach, in which revenue shortfalls are broadly socialized across load customers on a load-ratio share basis (*i.e.*, the second approach, above) is undesirable. There is no connection between the allocation of this cost burden and the cause of the revenue shortfall.

⁷ Draft Final Proposal at 30.

Moreover, the entities funding the revenue shortfall can do nothing to avoid incurring these costs.

It is important to recognize, however, that reducing the amount of transmission capacity that is available through the annual CRR process in the first place will reduce the CRR framework's ability to achieve its key purpose: to facilitate forward contracting. Put simply, if fewer CRRs are available on an annual basis, then market participants will be less able to enter into forward contracts on an annual basis. Thus, the Draft Final Proposal's approach to reducing revenue inadequacy potentially entails costs in the form of reduced opportunities for forward contracting, and/or higher costs associated with forward contracting. The solution to transmission derates and outages should not be to stop selling forward transmission or even to sell materially less than CAISO reasonably expects will be available.

For that reason, Powerex believes that CAISO's proposal should only be implemented on an interim basis while CAISO pursues long-term reforms that better align with the purpose and function of CRRs in the CAISO markets. As discussed more fully in Section III, Powerex believes the Track 2 enhancements should explore the third approach listed above. Namely, addressing revenue inadequacy by effectively de-rating the volume of CRRs held as grid conditions change. Powerex believes there are ways to do this in a manner that is highly efficient and preserves the necessary risk-hedging properties of CRRs, without unduly restricting the availability of CRRs.

C. Powerex Supports Proposals To Modify Transmission Outage Deadlines Or To Limit CRR Model Information

In addition to the two enhancements discussed above, the Draft Final Proposal also proposes to (1) require the reporting of planned outages potentially impacting the CRR model by July 1; and (2) limit the information provided to participants regarding the specific constraints to be modeled and enforced in the CRR process. Powerex provisionally supports both of these enhancements.

The CAISO November 2017 analysis found, among other things, that numerous transmission constraints that contributed to revenue inadequacy were not enforced in the annual and monthly CRR process. CAISO explained that "because the CAISO lacked sufficient information on outages, its engineering analysis did not identify that the constraint should be enforced in the auction in addition to default constraints."⁸ The Track 1 proposals focus on near-term measures to enhance the annual CRR process for 2019, and propose to require planned outages potentially impacting the CRR model to be

⁸ *Id.* at 23.

submitted by July 1. Powerex supports enhancements to ensure that the CAISO CRR model accurately reflects available information, and therefore supports this proposal. Powerex believes such requirements should be further developed in Track 2 to improve the accuracy of information in the monthly CRR processes as well.

The Draft Final Proposal also proposes to limit disclosures of CRR model information. The goal of this enhancement is for CRR nominations in the allocation, as well as bids in the CRR auction, to be based on each participant's expectation of congestion in the day-ahead market rather than on misalignment between the CRR model information and expected day-ahead model information. Powerex agrees, in concept, that there is little efficiency benefit from enabling participants to profit from nuances in modeling differences, and therefore provisionally supports this enhancement. Powerex's support is subject to two qualifications, however. First, Powerex expects that this enhancement will not restrict the information available regarding the anticipated future conditions of the grid, which are necessary in order for participants to develop expectations of day-ahead congestion charges. Second, this enhancement must result in specific CRR model information being unavailable to *all* participants. For instance, if some participants were to have CRR model information by virtue of the information they provide to CAISO, then this enhancement could unintentionally confer informational advantages that undermine the CRR process. Broad disclosure of information is often used precisely to address such information disparities, and hence the proposed restrictions on CRR model information should be reviewed with this concern in mind.

III. Track 2 Should Explore Fundamental Improvements Toward A More Efficient CRR Framework

Powerex recognizes that the proposed Track 1 enhancements necessarily address near-term "stop gap" measures that can be implemented in time for the 2019 annual CRR processes. The need for these immediate enhancements arises from more fundamental deficits in the CRR framework, however. Powerex therefore supports CAISO revisiting the core design of the CRR framework in Track 2 of this stakeholder initiative. In Powerex's view, the overarching objective of Track 2 should be to ensure that CRRs are awarded as efficiently as possible. More specifically, Powerex recommends that CAISO examine two key issues in Track 2:

1. Addressing revenue inadequacy by re-defining CRRs as subject to an *ex ante* volumetric de-rate, such that changes in transmission capability primarily result in reduced payments to CRR holders.
2. Maximizing the transmission capability that is awarded through a competitive CRR process by eliminating (potentially subject to transitional mechanisms) the direct

allocation of CRRs to LSEs, and introducing Auction Revenue Rights (“ARRs”) instead.

Each of these issues is discussed below.

A. Revenue Inadequacy Can Be Largely Addressed By Subjecting CRRs To An *Ex Ante* Volumetric Quantity Derate

As noted above, while Powerex supports implementation of CAISO’s proposal to conservatively reduce the volume of CRRs sold on an interim basis, Powerex believes that this approach has the potential to impair efficient forward contracting and should not be adopted on a permanent basis. For that reason, as part of Track 2 of this proceeding, Powerex recommends that CAISO pursue a long-term solution that de-rates the volume of CRR holdings each day to reflect prevailing grid conditions.

More specifically, Powerex recommends that CAISO consider an approach that would reduce the volume of CRRs over a given path based on a simultaneous feasibility test conducted closer to each day-ahead market run. Under this approach, the volume of CRRs held on a given path would be adjusted on a daily basis, with hourly granularity, to incorporate up-to-date information regarding transmission availability. In order to ensure that market participants have adequate notice regarding the extent to which their CRRs would act as a hedge against day-ahead congestion charges, this adjustment would be performed before market participants submitted bids or self-schedules in the day-ahead market. The net effect of this approach would be that CRR payouts would no longer be calculated based on a guaranteed CRR quantity; instead CRR payouts would be based on the quantity of CRRs remaining after adjustments to preserve simultaneous feasibility given grid conditions. The effect would be to allocate the consequences of revenue inadequacy to the narrow class of entities holding CRRs across a specific de-rated constraint.

Powerex emphasizes that there are a number of ways in which such a volumetric adjustment could be achieved and that, in practice, there may be dozens (or hundreds) of CRRs that impact a given transmission constraint. Powerex believes, however, that the most efficient way to implement a volumetric de-rate would be to require all outstanding CRRs impacting a constraint to effectively be “re-bid” into a simultaneous feasibility test at the applicable clearing auction price from the annual or monthly CRR process in which the CRR was acquired. Allocated CRRs would also be “re-bid” at the auction price from the annual or monthly CRR that aligns with the period in which the allocation occurred. The result would be that any adjustments would be allocated to those CRRs whose auction value indicate that they can provide the necessary volumetric adjustment at the lowest cost. This approach would recognize, for instance, that a CRR with a high shift factor and low CRR value represents a relatively low-cost way of reducing

flows over a particular constraint; conversely, this approach would recognize that reducing CRRs with a low shift factor and high CRR value would be a costly and inefficient way of obtaining the required reductions in flow.

Powerex believes that such an approach has a number of advantages over other possible approaches (such as reducing CRRs based on the magnitude of the shift factor for a particular constraint):

- First, it is efficient, as it allocates adjustments to those CRRs whose auction value indicate that they can provide the necessary volumetric adjustment at the lowest total cost; and
- Second, such an approach would reduce the opportunity to purchase CRRs at very low prices, with potential high payoffs resulting from transmission de-rates, as such CRRs would be the first to be reduced in response to a transmission de-rate.

Powerex believes that implementation of a volumetric de-rate approach has the potential to reduce CRR revenue inadequacy in a manner that is consistent with open access principles. At its core, such an approach would reduce the volume of CRRs to reflect actual transmission capability in a manner consistent with the treatment of firm point-to-point transmission rights under the pro forma OATT. Notably, under the OATT, firm rights holders are not guaranteed to be able to schedule the full quantity of their purchased right when a transmission path is de-rated. Instead, when transmission constraints arise, the volume of firm rights is effectively reduced to reflect the reduced capability of the path at issue. In other words, de-rating CRRs based on actual transmission availability would effectively extend the framework that has been accepted for use in the case of physical transmission rights to their financial equivalent.

B. The Direct Allocation Of CRRs Should Be Phased Out, And All Transmission Capability Should Be Subject To Competition

Powerex believes that Track 2 of this proceeding should also consider eliminating, or significantly scaling back, the direct allocation of CRRs to LSEs. While Powerex supports the objective of ensuring that ratepayers that fund the transmission grid receive the economic value of the use of the grid, Powerex believes that the existing, non-competitive allocation process for CRRs, particularly at intertie locations, is one of the largest sources of inefficiencies in the CAISO markets today. Specifically, Powerex believes that the current allocation process has the harmful effects of:

- Inserting California's largest, incumbent LSEs as physical supply intermediaries between external suppliers and the CAISO in the day-ahead market bidding and scheduling processes;

- Causing day-after-day self-scheduling of on-peak and off-peak blocks of energy to the CAISO grid, pursuant to standard physical forward agreement provisions, which is often sourced from flexible external resources, thereby undermining short-term market efficiency and renewable resource integration;
- Reducing the ability for smaller LSEs, and/or their energy suppliers, to acquire CRRs through a competitive process to support forward energy contracts that they seek to execute, and
- Reducing forward trading liquidity at the financial trading hubs of NP15 and SP15, both by reducing the ability for suppliers to acquire CRRs from their delivery points to the trading hubs, but also by causing the larger LSEs to forward contract physical power at the PORs of their CRRs, rather than financially at the forward trading hubs.

For these reasons, Powerex believes that CAISO should explore replacing the existing direct allocation of CRRs to LSEs with a framework of allocating ARR, similar to the approach used in other organized markets. Powerex believes that the use of ARR would satisfy the objective of ensuring that ratepayers funding the transmission grid continue to receive the economic value of the use of the grid while avoiding the inefficiencies enumerated above. Under an ARR approach, LSEs would be able to bid for CRRs in the auction, along with other market participants, and would be hedged against the auction price for the locations and quantities associated with their allocated ARR. In other words, to the extent that LSEs needed CRRs to hedge congestion charges for their forward contracts, ARR would continue to enable LSEs to obtain those CRRs at no net additional cost. However, unlike under the existing CRR allocation process, LSEs would be required to compete with other market participants to obtain forward transmission rights through a competitive auction process.

In the event that CAISO decides to continue to retain a CRR allocation process, Powerex believes that CAISO should restrict the paths on which CRRs are allocated to those that have either a source and/or a sink at a forward trading hub of NP15 or SP15, as set out in Section II.A above. As noted above, Powerex believes that restricting the paths on which CRRs are allocated has the potential to confer significant benefits on the CAISO market, including foster a liquid and competitive CRR auction process.