UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	**)** **)**	**Docket No. ER18-2034-000**

MOTION FOR LEAVE TO FILE ANSWER AND ANSWER OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION TO COMMENTS AND PROTESTS

The California Independent System Operator Corporation (CAISO)[1] answers comments and protests filed in this proceeding[2] in response to the CAISO's July 17, 2018 tariff amendment (July 17 Tariff Amendment). The July 17 Tariff Amendment improves the efficiency and performance of the CAISO's congestion revenue rights (CRR) processes.

Most commenters either support or do not oppose the CAISO's proposals in the July 17 Tariff Amendment.[3] However, a few commenters argue that the

---

[1] Capitalized terms not otherwise defined herein have the meanings set forth in appendix A to the CAISO tariff.

[2] The following entities filed motions to intervene in the proceeding: the Alliance for Retail Energy Markets; American Public Power Association (APPA); California Department of Water Resources State Water Project; California Municipal Utilities Association (CMUA); California Public Utilities Commission; Calpine Corporation (Calpine); Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (collectively, Six Cities); City and County of San Francisco; City of Santa Clara, California d/b/a Silicon Valley Power (SVP); DC Energy, LLC (DC Energy); Department of Market Monitoring of the CAISO (DMM); Modesto Irrigation District; Northern California Power Agency (NCPA); NRG Power Marketing LLC and GenOn Energy Management, LLC; Pacific Gas and Electric Company (PG&E); Powerex Corp. (Powerex); Southern California Edison Company (SCE); Vitol Inc. (Vitol); and Western Power Trading Forum (WPTF). In addition, APPA, CMUA, DMM, NCPA, PG&E, Powerex, Six Cities, and SVP filed comments. AReM and SCE filed protests. DC Energy and Vitol (together, DC Energy/Vitol) jointly filed a limited protest. Calpine filed comments and a limited protest, and WPTF filed comments in support in part and protest in part. In addition, PG&E filed a motion for leave to answer and answer to the limited protest of DC Energy/Vitol (PG&E Answer), DMM filed a motion for leave to answer and answer to a portion of Calpine's filing, and Powerex filed a motion for leave to answer and answer to a number of the comments and protests.

[3] APPA at 4, 5; AReM at 4; CMUA at 3-4; Calpine at 5; DMM at 2-3; NCPA at 3-4; Six Cities at 2-7; SVP at 5-7; WPTF at 7-8.

Commission should reject the proposals in the July 17 Tariff Amendment in whole or in part. For the reasons set forth below, the Commission should accept the July 17 Tariff Amendment as filed without condition or modification.[4]

I. Motion for Leave to File Answer

Pursuant to Rules 212 and 213 of the Commission's Rules of Practice and Procedure,[5] the CAISO respectfully requests waiver of Rule 213(a)(2), 18 C.F.R. § 385.213(a)(2), to permit it to answer the protests filed in the proceeding. Good cause for the waiver exists because the answer will aid the Commission in understanding the issues in the proceeding, provide additional information to assist the Commission in the decision-making process, and help to ensure a complete and accurate record in the case.[6]

[4] The CAISO files this answer pursuant to Rules 212 and 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R. §§ 385.212, 385.213. For the reasons explained below, the CAISO respectfully requests waiver of Rule 213(a)(2), 18 C.F.R. § 385.213(a)(2), to permit it to answer the protests filed in the proceeding.

[5] 18 C.F.R. §§ 385.212, 385.213.

[6] *See, e.g., Equitrans, L.P.,* 134 FERC ¶ 61,250 at P 6 (2011); *Cal. Indep. Sys. Operator Corp*., 132 FERC ¶ 61,023 at P 16 (2010); *Xcel Energy Servs., Inc.,* 124 FERC ¶ 61,011 at P 20 (2008).

II. Answer

A. The Proposal to Pay CRR Holders for CRR Entitlements Based on the Revenues Collected through the Day-Ahead Market Is Reasonable and Consistent with Commission Precedent

1. Overview

The CAISO currently pays CRR holders the full stated value of their CRRs even if such payments exceed the congestion revenue the CAISO collects in the day-ahead market. Under the existing CAISO tariff, metered demand and exports must pay an uplift charge to fund CRRs to the extent CRR auction revenues and congestion revenues collected in the day-ahead market are insufficient. The July 17 Tariff Amendment eliminates this full funding requirement and instead pays each CRR holder based on the congestion revenues collected in the day-ahead market. The CAISO will determine revenue insufficiency and payments to each CRR holder on a constraint-by-constraint basis by scaling the holder's CRR entitlement based on the modeled (or implied) flow of the CRR over a particular constraint in the direction of the congestion.

The CAISO recognizes that its proposed changes are a significant shift from the current full-funding approach. The CAISO also acknowledges that some stakeholders expressed concern that the changes will "soften" the hedge that CRRs provide in the sense that market participants' exposure to CAISO market congestion charges may increase. This change is, however, necessary to eliminate the significant burden revenue insufficiencies have caused load-serving entities over the years. To address stakeholders' concerns and balance these competing interests, the CAISO and stakeholders developed an approach

that both minimizes unwarranted uplift associated with fully funding CRRs and includes measures to minimize the amount by which the CAISO's approach will reduce CRRs' value as a hedge.

The CAISO's changes to its CRR funding approach encompass two key and related design characteristics. The first design characteristic is that the CAISO will focus on derating and scaling CRR entitlements on a constraint-by-constraint basis because CRR entitlements issued in the CRR allocation or auction processes typically have implied flow on multiple constraints in the day-ahead market and involve the congestion revenues generated by each of these constraints in the day-ahead market. This measure supports the CAISO's new proposed policy, which most stakeholders supported, that CRRs should be funded to the extent the entitlements are supported by the transmission capacity available in the day-ahead market. This is best reflected by a constraint by-constraint approach, which most equitably distributes congestion revenue and reduces incentives to exploit modeling differences between the CRR process and the day-ahead market. The CAISO recognizes that this is a different approach to accounting for the revenue insufficiency than other Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs) use, but through its robust stakeholder process, the CAISO determined this is the most equitable way to allocate available revenues.

The second key design characteristic is that the CAISO is proposing not to symmetrically adjust prevailing and counter flows for revenue insufficiency. This measure is different from the practice in PJM Interconnection L.L.C. (PJM) of

adjusting equivalent "counter flow," or negatively priced financial transmission rights (FTRs), in addition to "prevailing flow" FTRs, or positively priced FTRs. It differs because the CAISO's underlying approach to accounting for revenue insufficiency fundamentally differs from the PJM approach. As discussed further below, PJM accounts for revenue insufficiency at an aggregated level, whereas the CAISO is proposing to account for revenue insufficiency at a constraint-by-constraint level based on the prevailing flows CRRs place on each constraint. Accounting for revenue insufficiency based on the prevailing flows CRRs place on one constraint allows the CAISO's congestion cost allocation to respect the physical characteristics of the power system and more closely align the pricing of its CRR product with the actual expected day-ahead market congestion costs, which is a primary goal for the CAISO and its stakeholders. Overlaying the PJM approach of "symmetric" adjustments to positively and negatively priced FTRs over the CAISO's constraint-by-constraint approach would be unjust and unreasonable. The Commission is not constrained by the PJM precedent to force an unjust and unreasonable outcome on the CAISO and its market participants. Moreover, the approach that the CAISO and its stakeholders chose further reinforces the firmness of the prevailing flow CRRs, which directly support the delivery of power to load.

2. Placing Risk of Partial Funding on CRR Holders is Appropriate

Several commenters oppose, on various grounds, the fundamental concept of eliminating the guaranteed full funding of CRRs provided today through uplifts to load. WPTF argues that the proposal would improperly "shift

costs" to CRR holders and that eliminating guaranteed full funding of CRRs is inconsistent with cost causation principles.[7] Calpine argues that the proposal for "partial funding" of CRRs is not fair because it "short-pays" a CRR holder for events beyond its control.[8]

These arguments fail to acknowledge two key factors. First, the heart of the CAISO's proposal—determining payments to CRR holders so as not to exceed the collected congestion revenues—is the Commission-approved approach used by the majority of ISOs and RTOs in making payments to holders of financial transmission rights. Second, this proposal does not allocate costs, so any concerns about cost causation are inapposite. The CAISO proposal instead focuses on allocating available revenues in a more appropriate way so as to avoid continuing to incur unnecessary uplift.

PJM, ISO New England Inc. (ISO-NE), the Midcontinent Independent System Operator, Inc. (MISO), and Southwest Power Pool, Inc. (SPP) each compare congestion revenues with the target values of financial transmission rights[9] on an aggregated basis over various defined "close out" periods of time (hourly, daily, monthly and/or annual). Any shortfalls or surpluses based on those comparisons over the defined periods are allocated *pro rata* to the rights holders, up to the levels of their target financial transmission rights values, and

---

7 WPTF at 3-4, 8-9.

8 Calpine at 7-8.

9 The other ISOs and RTOs use terms other than CRR to designate their own financial transmission rights products. PJM, ISO-NE, and the MISO use the term financial transmission right (FTR) and SPP uses the term transmission congestion right (TCR). The market designs of those other ISOs and RTOs also include auction revenue rights (ARRs) that can be converted into FTRs and TCRs. For purposes of the discussion in the paragraph above, the CAISO refers to FTRs and TCRs together as financial transmission rights.

any residual surpluses are carried forward to a subsequent period. At the end of the last period, any remaining surplus is allocated *pro rata* to financial transmission rights holders, auction revenue rights holders, market participants, and/or transmission customers, depending on the specific tariff provisions of the ISO or RTO.[10]

The CAISO's proposal falls squarely within the Commission-approved approaches in these other markets. Neither WPTF nor Calpine acknowledge these core similarities. Neither do they explain why regional differences between the CAISO and these other markets would mandate a different approach to paying the holders of financial transmission rights. Instead, they simply argue that market design principles require load to make up the shortfall if congestion revenues are insufficient to pay a CRR holder the target value of the CRR. This position that load must serve as the guarantor for full funding of financial transmission rights cannot be squared with Commission-approved practices of other ISOs and RTOs. The Commission has recognized that holders of financial transmission rights can best manage the risks associated with congestion revenue insufficiency and that they, rather than load, should bear the risk that

[10] *See* PJM Open Access Transmission Tariff (OATT), attachment K, at sections 5.2.3 and 5.2.5 – 5.2.6; ISO-NE Transmission, Markets, and Services Tariff, Market Rule 1, at section III.5.2.4 – III.5.2.6; MISO Open Access Transmission, Energy and Operating Reserve Markets Tariff at section 39.3.4; SPP OATT, attachment AE, at sections 8.5.12 – 8.5.14. Implementation details regarding these tariff provisions are provided, respectively, in sections 8.4, 16.4, and 17.3 of PJM Manual 28: Operating Agreement Accounting (June 1, 2018); section 6 of ISO-NE Manual M-28: Market Rule Accounting (March 1, 2017); section 2.9.3 of MISO Business Practices Manual 005: Market Settlements (June 9, 2018); and sections 4.5.8.14 through 4.5.8.17 of the Market Protocols for the SPP Integrated Marketplace (June 12, 2018). The ISOs and RTOs also apply comparable provisions to allocations of ARR shortfalls.

financial transmission rights may not be funded fully.[11] Ultimately, WPTF's and Calpine's arguments amount to claims that the approach used by most other ISOs and RTOs to determine payments to holders of financial transmission rights is unjust and unreasonable.

The principle of cost causation requires that "approved rates reflect to some degree the costs actually caused by the customer who must pay them."[12] Nothing about the CAISO's proposal conflicts with this principle, for the simple reason that the proposal does require entities to pay costs that they did not cause the CAISO to incur. Any CRR design that causes the CAISO to pay out more than it collects results in a revenue insufficiency that must be made up through uplift charges. These uplift charges are the "costs" of ensuring full funding of CRR entitlements as released.

Under today's methodology, to the extent such deficiencies occur, metered demand (load-serving entities) and exports pay the uplift charges needed to bring the CAISO back to revenue neutrality. These participants bear this uplift even though they may have no role in the circumstances that led to the congestion revenue insufficiency. The essential element in considering these uplift "costs" exist only to the extent the CAISO's policy is to fully fund such CRRs. The CAISO proposal is designed to avoid having to assess such uplift charges to load.

---

[11] "As the Commission has previously held, FTRs are not guaranteed to be fully funded, and FTR holders are well positioned to manage and mitigate that risk." *PJM Interconnection, L.L.C.*, 163 FERC ¶ 61,165, at P 30 (2018) *(citing PPL EnergyPlus, LLC v. PJM Interconnection, L.L.C.,* 136 FERC ¶ 61,060, at PP 29, 32 (2011)).

[12] *K N Energy, Inc. v. FERC*, 968 F.2d 1295, 1300 (D.C. Cir. 1992).

Rather than looking at the CAISO proposal as a cost allocation scheme, a more accurate way of understanding the CAISO's proposal is to analogize it to adjustments to transmission service under the Commission's *pro forma* OATT when a transmission line is derated. The CAISO is effectively "derating" CRRs that place prevailing flow on constraints when system conditions in the day-ahead market are different from those assumed during the CRR allocation and auction process, *e.g.*, where more restrictive constraints are enforced in the day-ahead market than were enforced in the CRR auction. Considering the issue of revenue insufficiency in this way aids in identifying the causes of reductions in transmission capacity relative to what was available in the release of CRRs.

Contrary to suggestions in the comments, transmission owners are not the appropriate party to bear the burden of CRR revenue insufficiency. The transmission owners do not dictate how much capacity is released in the CRR processes or the day-ahead market. Numerous factors can contribute to the changes in system conditions that lead to congestion revenue insufficiency in the day-ahead market and de-rating CRRs. Planned transmission outages are only one of those factors. The most obvious additional factors are unplanned outages that are beyond the control of transmission owners that are triggered by uncontrollable events such as wildfires. In addition, the CAISO models unscheduled external flows that can impact the power flow and displace day-ahead scheduled flow, which can further contribute to revenue insufficiency. Finally, there is the reality that transmission topology varies over time and hourly, which simply cannot be accounted with perfect foresight months before the day-

ahead market is conducted. The CAISO's April 11, 2018 tariff amendment approved by the Commission in Docket No. ER18-1344 (April 11 Tariff Amendment) includes new requirements for reporting of planned transmission outages, which are designed to provide the CAISO with better information on planned outages that can affect CRRs, thereby improving the network model used in the CRR allocation and auction process. Because it is difficult to isolate all of the factors that can contribute to congestion revenue insufficiency, there is no cost causation principle that supports requiring any particular entities to fully fund CRRs rather than adjusting payments to CRR holders to reflect available congestion revenues.

3. CRRs Have Never Been a "Perfect Hedge"

WPTF argues that the CAISO's proposal will "remove the perfect hedge" qualities of CRRs. This ignores the fact that under the current design CRRs do not provide a perfect hedge against congestion costs.[13] Today, although CRRs are fully funded, there is no guarantee that through CRRs released in either the allocation or auction processes, a load-serving entity will not be exposed to congestion charges.[14] The full funding paradigm simply pays for the entitlements

---

[13] The Commission has made it clear that long-term CRRs are not a perfect hedge: "Under the CAISO's proposal, long-term CRRs are an optional mechanism that LSEs may choose to request in order to help hedge against the risks associated with congestion pricing under an LMP model. The Commission reiterates that these CRRs are not a perfect hedge and that they are not required to be a perfect hedge under section 217 of the FPA or the Final Rule." *Cal. Indep. Sys. Operator Corp*., 124 FERC ¶ 61,094, at P 67 (2008). This is also true of CRRs for shorter periods.

[14] The only "perfect hedge" provided under the CAISO tariff is to balanced source/sink self-schedules submitted under transmission ownership rights and existing contracts. The CAISO does not release CRRs to these entities. Rather, it reverses the congestion charges on balanced schedules submitted and cleared consistent with their contractual rights. These "perfect hedges" are accounted for and provided based on contractual rights and obligations and are unaltered by the CAISO's proposed changes in the July 11 Tariff Amendment.

that are released in the CRR process and not based on how the grid is actually used in the day-ahead market. Today CRR holders that serve load pay for a portion of any of the shortfalls, and in a sense have a "softer" hedge than CRR holders that do not serve load. There is no reason to believe this is a better approach than the CAISO's proposal in this proceeding.

The Commission recognizes that full funding of CRRs does not constitute a "perfect hedge" because any full funding guarantees must be allocated among market participants in some way given that each ISO or RTO, including the CAISO, is a revenue-neutral entity.[15] Although CRRs are designed to be a hedge against supply delivery risks, there is no justification for requiring load, transmission owners, or any other group of market participants to incur uplift to completely eliminate delivery risk for CRR holders that do not serve load.

4. The CAISO Proposal is Necessary and Appropriate Even with Other Approved and Contemplated CRR Enhancements

WPTF argues that, given that the other measures developed through the CAISO's CRR auction efficiency stakeholder initiative,[16] the CAISO has not demonstrated that the proposal for revenue inadequacy allocation is necessary

---

[15] *Long-Term Firm Transmission Rights in Organized Electricity Markets*, Order No. 681, FERC Stats. & Regs. ¶ 31,226, at P 174 (Order No. 681), *order on reh'g*, Order No. 681-A, 117 FERC ¶ 61,201 (2006) (Order No. 681-A), *order on reh'g and clarification*, Order No. 681-B, 126 FERC ¶ 61,254 (2009).

[16] As explained in the July 17 Tariff Amendment, the CAISO has divided the policy phase of the CRR auction initiative into three tracks. Track 0 focused on CRR auction enhancements that the CAISO could implement within its current tariff authority, including greater transparency on transmission outage reporting performance, CAISO process improvements, and reviewing current modeling criteria. Track 1, divided into Track 1A (the April 11 Tariff Amendment) and Track 1B (this filing) focuses on enhancements the CAISO can implement this year. Track 2 will commence in 2019 and is planned to consider more comprehensive potential changes to the CRR allocation and auction design. Transmittal letter for July 17 Tariff Amendment at 10.

or appropriate at this time.[17] Irrespective of the prior changes proposed and made by the CAISO, it is just and reasonable to allocate revenue insufficiency to CRR holders on a constraint-by-constraint basis.

Calpine similarly argues that the Commission should prohibit the CAISO from revising payments to CRR holders until after the CAISO has experience with the Track 0 and Track 1A enhancements.[18] Calpine also suggests that the CAISO must first satisfy six additional conditions, including an evaluation of various alternatives, before revising the tariff provisions governing payments to CRR holders to be in line with the practices of other ISOs and RTOs.[19]

WPTF and Calpine argue that the CAISO should wait and see how the other rule changes play out before suggesting further changes effectively amount to a claim that the CAISO can only remedy aspects of its market rules that are not just and reasonable. This is wrong. There is no requirement under section 205 of the Federal Power Act (FPA)[20] that the applicant must demonstrate first that the existing rules are not just and reasonable. Under section 205, the CAISO is free to propose changes to the rates, terms, and conditions of its tariff without having to demonstrate that existing market rules are unjust and unreasonable. In order for the Commission to accept such proposals, it need only make the determination that the revised tariff provisions are just and

---

17 WPTF at 22-23.

18 Calpine at 10-11.

19 *Id.* at 11-12.

20 16 U.S.C. § 824d.

reasonable.[21]

Calpine argues that the CAISO should be required to consider allocating some portion of CRR revenue shortfalls to participating transmission owners.[22] As noted by Calpine, the New York Independent System Operator, Inc. (NYISO) differs from the other ISOs and RTOs discussed above in that transmission owners have taken on the obligation to support the full funding of transmission congestion contracts (TCCs), which are the NYISO version of financial transmission rights.[23] The CAISO's participating transmission owners have not undertaken the same obligation. As noted above, the CAISO already has taken steps to obtain improved information from participating transmission owners on planned outages that could affect CRR revenue sufficiency. There is no reason to require participating transmission owners also to assume the costs of guaranteeing full funding of CRRs. Moreover, because the CAISO's proposal to adjust payments to CRR holders is just and reasonable, the Commission need not consider alternatives to that proposal. A public utility like the CAISO has no obligation under section 205 to demonstrate that its proposed tariff change is superior to any alternatives.[24]

---

21 *See, e.g.*, 16 U.S.C. § 824d.

22 Calpine at 12.

23 NYISO OATT, attachment N, at section 20.2.5.

24 *See, e.g., ISO New England, Inc.*, 162 FERC ¶ 61,206, at P 33 (2018) ("[T]he question before the Commission . . . is whether ISO-NE has demonstrated that its [proposals] are just and reasonable, not whether ISO-NE's proposal is more or less just and reasonable than protesters' proposed alternatives.") (footnote omitted); *Louisville Gas & Elec. Co.*, 114 FERC ¶ 61,282, at P 29, *order on reh'g*, 116 FERC ¶ 61,020 (2006) (finding that "the just and reasonable standard under the FPA is not so rigid as to limit rates to a 'best rate' or 'most efficient rate' standard."); *City of Bethany v. FERC,* 727 F. 2d 1131, 1136 (D.C. Cir. 1984) (when determining whether a proposed rate was "just and reasonable", as required by the FPA, the Commission properly did

B. To the Extent the CAISO Collects a Surplus in the Day-Ahead Market, the Surplus Consists of Congestion Revenues Over Which No Market Participant Obtained an Entitlement in the CRR Allocation or Auction

The CAISO proposes to minimize derates of CRRs, *i.e.*, the scaling of payments to CRR holders, by netting congestion revenue shortfalls in particular hours with any congestion revenue surplus from other hours resulting from the same constraint over the same month. This will decrease the probability that a CRR will receive payment reductions over the course of the month, thereby providing CRR holders a firmer product.

Some parties oppose various aspects of this proposal. Before addressing this opposition, it is important to understand that to the extent the CAISO collects a surplus in the day-ahead market, the surplus consists of congestion revenues over which no market participant obtained an entitlement in the CRR allocation or auction. As such, there are no "owners" of such surpluses. The CAISO and stakeholders merely decided it would be best to offset reduced CRR payments with any surpluses to better assure the funding of CRRs so they would provide better hedge value and better preserve CRRs' value in the auction. Moreover, if there is no implied CRR flow over a particular constraint, there will be no deliveries that require a hedge. In other words, if a market participant holds a CRR between points A and B, and there is no implied flow on a constraint between points A and B, the CRR holder is fully hedged for any congestion on that constraint because the CRR holder would not be charged for congestion on

---

not consider "whether a proposed rate schedule is more or less reasonable than the alternative rate designs").

the constraint in question. In such circumstances, there is no reason why the holder of a CRR between points A and B should expect to receive congestion revenues from other constraints not associated with flow between points A and B. While no CRR holder had an entitlement on those revenues, the CAISO has nonetheless chosen to allow, and stakeholders supported allowing, a certain reasonable amount of surplus distribution (described as netting) to CRRs to "firm up" the CRR product.

WPTF argues that the CAISO's proposal is contrary to cost causation principles and discriminates against CRR holders because the netting or "close out" period is a month rather than a longer period.[25] DC Energy/Vitol make a similar argument.[26] Commenters opposing this aspect of the CAISO's proposal fail to show that the CAISO's selection of a close out period actually accounts for who bears the burden of the revenue insufficiency based on when the sufficiency occurs. As discussed above, the CAISO's proposal is not about allocating costs, but rather about adjusting CRR entitlements to amounts that are feasibly funded by the congestion revenue collected in the day-ahead market on a constraint-by-constraint basis. The close out period establishes the timeframe in which the CAISO will allocate excess congestion revenue collected above and beyond actual CRR entitlements. It has nothing to do with allocating costs to customers who caused those costs to be incurred.

---

[25] WPTF at 13-17.

[26] DC Energy/Vitol at 2, 17-18.

Further, the existence of any close out period in the CAISO proposal is itself an accommodation to the realities of the CRR process, rather than an imperative of market design. The design principle driving the CAISO proposal is that a CRR should only be settled to the extent the market collects congestion revenue on the constraints over which that CRR has an implied flow.

WPTF also objects to the proposal to keep all excess congestion rents on any constraints where there were no CRR settlements in a particular hour.[27] This further highlights that WPTF's concerns are not driven by the need to hedge costs associated with supply delivery transactions. As explained above, when the CAISO incurs such surpluses there are no owners of such surpluses. Nor is any market participant left without a hedge. Therefore, WPTF's request boils down to a meritless argument that the surpluses should be allocated to CRR holders in that hour.

In developing its proposal, the CAISO recognized that netting over a reasonable period is appropriate to offset any payment reductions to allow CRRs to be firm enough to provide a hedge against congestion costs. There are several reasons, however, why a close out period longer than a month is not justified in the context of the CAISO's CRR framework. First, CRRs acquired through the monthly CRR release process are a monthly product. Other CRRs are allocated or auctioned on a seasonal basis. Under the Track 1A tariff revisions approved by the Commission, market participants can sell back seasonal CRRs in monthly increments. As such, seasonal or annual netting is

[27] WPTF at 17-18.

not feasible because the original CRR holder might not hold a CRR for longer than a single month. For example, consider a scenario in which a seasonal CRR is sold as a monthly CRR. There may be a revenue surplus due to a constraint during the period the original CRR holder held the CRR and the purchaser of the CRR may benefit from the surplus when a shortage occurs in a later month, even though the later CRR holder had no claim to the CRR when the surplus occurred.

This disconnect is exacerbated by the fact that transmission system conditions can change dramatically from month to month. For example, congestion revenue may be insufficient in a summer month due to wildfires or other unanticipated changes in system conditions. There is no reason why a holder of a monthly CRR (that originated as a seasonal CRR that was sold on a monthly basis) for that summer month should benefit from very different system conditions in an earlier month when the CRR was associated with surplus congestion revenue.

WPTF acknowledges that CRRs' existence as a monthly product creates a superficial reason for making the close out period no longer than a month, but claims that these concerns are "secondary" to "disadvantaging" CRR holders over load-serving entities.[28] This argument is based on the incorrect assumption that holders of financial transmission rights are reasonable in expecting load to guarantee full funding of CRRs in the future. As discussed above, this position is not consistent with Commission precedent.

[28] WPTF at 17.

WPTF claims that this alleged disadvantage to CRR holders will worsen as the CAISO implements its Track 0, 1A, and other 1B CRR enhancements.[29] WPTF provides no rational explanation why this should be the case. To the contrary, all of these enhancements should allow the model used for the CRR allocation and auction to align more closely with system conditions in the day-ahead market. The CAISO's proposal in this proceeding on how to treat the shortfalls once they occur has nothing to do with whether the shortfalls occur in the first instance. Nothing in the CAISO's proposal in this proceeding affects the CAISO's ability to model constraints or the circumstances that may lead to revenue insufficiency in the first place. Therefore, it is not clear how the CAISO's proposal can cause more insufficiencies to occur.

In the aggregate, these arguments suggest that WPTF's real concern is how the CAISO's proposal will limit the ability of CRR bidders to obtain financial instruments likely to earn payments substantially in excess of the CRR bid price. To the extent longer netting periods shield CRR holders from the impacts of any congestion revenue shortfalls that remain after the various enhancements more closely align the CRR market model with actual physical conditions, those CRR holders will continue to profit from their financial instruments in ways unrelated to the hedging of supply delivery risk.

DC Energy/Vitol also oppose the CAISO's proposed treatment of surpluses. Although DC Energy/Vitol support the constraint-by-constraint

---

[29] *Id.* at 16.

approach, they argue that the CAISO's proposal is overly specific and may allocate shortfalls one way and surpluses another way.[30] DC Energy/Vitol are arguing that the CAISO is offsetting shortfalls by contingency and transmission system element pairs. DC Energy/Vitol are concerned that constraints that share the same derated element will be treated separately in the surplus distribution and therefore, closely related congestion revenue surpluses may not be used to offset revenue shortfalls.

Consistent with the constraint-specific nature of the proposal, the CAISO allows surplus netting on the same constraint over the course of the month. The CAISO defines a constraint for the CRR process in the same way that the day-ahead market economic optimization defines and prices a constraint: as the combination of a contingency element and monitored element. Each combination is a unique constraint in the economic optimization with different factors influencing its pricing. While DC Energy/Vitol focus on contingency conditions that may be very similar in nature,[31] they give no weight to the alternative, contingency conditions that are very different in nature. Consider two very different contingency conditions: flows on a contingency element in southern California placing flows on a transmission line in central California one day versus flows on a contingency element in northern California placing flows on the same transmission line in central California on another day. These are very different contingency conditions that the day-ahead market economic

30 DC Energy/Vitol at 13-16.

31 *Id.* at 15.

optimization would evaluate and price differently from each other because they are caused by different circumstances. As such, it made little sense to dilute the constraint-specific proposal by netting solely for each monitored element.

DC Energy/Vitol argue that the proposal further impedes offsetting shortfalls with surpluses by requiring that an underfunded CRR have an implied flow impact on a constraint in the hour when the CAISO collected the surplus. The CAISO proposal allows CRRs with implied flow on constraints to have their portion of surpluses accrued on each such constraint, because those CRRs are shown to have relied in some way on the revenues associated with the constraint in that hour to hedge their day-ahead congestion charges, and therefore those CRRs are closely associated with that constraint in that hour. Other CRRs with no implied flow on the constraint are in no way associated with the constraint in that hour. Therefore, it did not make sense to dilute the constraint-specific proposal by netting surpluses across CRRs unrelated to the constraint they are intended to hedge.

C. Accounting for Revenue Insufficiency in Terms of CRRs that Place Prevailing Flow on Revenue-Insufficient Constraints Is Just and Reasonable

DC Energy/Vitol agree in concept that allocating day-ahead revenue insufficiency to CRR holders on a constraint-by-constraint basis could be a just and reasonable approach to address insufficient congestion revenues.[32] DC Energy/Vitol claim the CAISO's proposal is not reasonable, however, because when a constraint is underfunded in the day-ahead market, the CAISO proposes

[32] *Id.* at 1-2.

to allocate the amount of underfunding to gross prevailing flow CRR capacity on the constraint, rather than the net prevailing flow.[33] DC Energy/Vitol also claim that this proposal is inconsistent with Commission precedent, citing both a Commission order accepting the CAISO's Market Redesign and Technology Upgrade (MRTU) tariff first implementing nodal pricing in the CAISO and recent Commission orders address FTRs in PJM.[34] As explained below, DC Energy/Vitols' arguments are without merit.

1. The Commission's Orders in the MRTU tariff Proceeding Are Not Applicable When Accounting for Revenue Insufficiency in terms of CRRs that Place Prevailing Flow on Revenue-Insufficient Constraints

When the CAISO first filed its MRTU tariff in 2006, it did not propose full funding and instead proposed to prorate both CRR payments and receivables for any revenue insufficiency. Ultimately, the CAISO modified its proposed methodology and instead adopted full funding of all CRRs.[35] This is the approach that went into effect in 2009 along with the rest of the MRTU tariff that implemented the CAISO's existing nodal market design. The CAISO and its stakeholders now have nearly ten years of experience with the nodal market, generally, and the CRR processes, specifically. Among other things, the knowledge gained from that experience highlights the importance of accounting for revenue insufficiency and targeting the adjustments to CRR payments based

---

33 *Id.* at 2.

34 *Id.* at 3-7.

35 *See Cal. Indep. Sys. Operator Corp.*, 120 FERC ¶ 61,023, at PP 54-55 (2007); *see also* transmittal letter for CAISO filing to comply with Order Nos. 681 and 681-A,, Docket Nos. ER07-475-000 and RM06-8-000, at 11 (Jan. 29, 2007).

on flow that CRRs place on specific transmission constraints. Had the CAISO implemented partial funding as it originally proposed it in 2006, the CAISO would likely to have had to modify its rules subsequently to address the issues the CAISO is trying to prevent now in this proceeding.

The Commission accepted the CAISO's original MRTU proposal in 2006[36] and relied on the CAISO's expert testimony that the proposal was "in line with some logical expected properties of CRRs."[37] However, the Commission's conclusions in the 2006 MRTU order cannot be considered dispositive with regard to the July 17 Tariff Amendment. In 2006, the CAISO expert and the Commission were considering the logical expected properties in a different context. They were not considering whether the symmetrical treatment was just and reasonable when accounting for revenue insufficiency based on the flows CRRs place on a specific constraint. When insufficiency is accounted for based on the flows the CRRs place on a specific constraint, the "logical expected properties" considered in 2006 no longer hold and it has now become clear that there could be adverse consequences to the efficiency of the CRR processes.

It is important also to note that the example provided by the CAISO expert on which the Commission relied in its MRTU order specifically addressed a circumstance involving two CRRs of equal megawatts (MWs) from point A to point B and from point B to point A *held by the same CRR holder*. The example specifically illustrated that the principle should apply in circumstances where a

---

[36] *Cal. Indep. Sys. Operator Corp*., 116 FERC ¶ 61,274, at P 853 (2006).

[37] Attachment I (Direct Testimony of Dr. Farrokh Rahimi) to CAISO filing to implement MRTU, Docket No. ER06-615-000, at 91 (Feb. 9, 2006).

specific "entity having equal amounts of CRR Obligations from A to B and B to A should logically have a net zero charge/payment regardless of hourly net Congestion revenue shortfall, the payment due to one of the CRRs (*e.g.*, A to B) were prorated, but the other (B to A) were changed to the full."[38] The CAISO expert was explaining that this principle should apply when the single participant holds both CRRs in the opposing directions.

This principle does not, however, hold when the CAISO accounts for revenue insufficiency based on the flows CRRs place on specific constraints and then applies the adjustments to payments and receivables on a constraint-by-constraint basis, rather than in the aggregate by market participant. By applying the adjustments on a constraint-by-constraint basis, different market participants could be on either end of the prevailing flow and counter flow because multiple source and sink combinations could have flow over a given constraint. For these different market participants there is no expectation that the payments should net out. In fact, as discussed further below, if the receivables from the counter flow are adjusted under the constraint-by-constraint approach, other CRR holders would have their CRR payables adjusted more than necessary.

DC Energy/Vitol acknowledge that under the Track 1A tariff revisions recently accepted by the Commission, in this circumstance individual CRR holders no longer simultaneously hold a CRR from A to B and from B to A, where A is a generator location and B is a load aggregation or trading hub.[39] Pursuant

---

[38] *Id.* at 91.

[39] DC Energy/Vitol at 4 n.7.

to the Track 1A tariff changes, market participants will be prohibited from bidding in for a load-to-generator CRR in the auction, and if a CRR holder of a CRR from point A to point B wishes to unwind that CRR, the CRR holder now has the right to directly sell back that CRR without having to purchase the counter flow CRR.[40] Nonetheless, DC Energy/Vitol still contend that this basic premise still holds on certain constraints where a market participant could hold some offsetting prevailing flow and counter flow CRRs.

The CAISO agrees that for the most part, the ability for one market participant to hold these direct countervailing CRRs will be limited, but they will still be possible. The CAISO disagrees, however, that it is more just and reasonable to maintain comparable treatment for counter flow CRRs just for the sake of maintaining this principle, in light of the potential cost this could have on the market. The limited nature of such holdings means that few if any market participants will have such paired CRRs for purposes of serving load and must be guaranteed a hedge for that purpose. On the other hand, as discussed below, adjustments to CRRs that place counter flow on constraints can result in shifting of costs from holders of CRRs that place counter flow on a specific constraint to those that hold CRRs that place prevailing flow on that constraint. Moreover, while participants cannot purchase CRRs in the auction that are sourced at a load and sink to a generator, market participants can procure CRRs

[40] DC Energy/Vitol acknowledge that their reliance on the MRTU order on this point is inconsistent with the recently approved tariff provisions, but attempt to argue that similar circumstances could occur, relying on a rehearing request which is inconsistent with the Commission's reasoning in its order accepting the April 11 Tariff Amendment. DC Energy/Vitol at 4 n.7.

in the auction that place counter flows on constraints. This potential is particularly concerning under DC Energy/Vitols' proposal to adjust countervailing CRR receivables because the potential for such "payouts" on CRRs that place counter flow on constraints would be borne by another market participant. This stands in stark contrast to the CAISO's example in the MRTU proceeding where a single market participant is holding both the prevailing and counter flow CRRs, on which DC Energy/Vitol rely to argue against the CAISO's proposal.

2. The Commission Did Not Find that Symmetric Adjustments to Counter flow CRRs Are *per se* Just and Reasonable as Suggested by DC Energy/Vitol

DC Energy/Vitol cite a proceeding in which the Commission rejected a PJM proposal to eliminate netting of negatively valued FTRs against positively valued FTRs within an FTR holder's portfolio. The Commission's orders in that proceeding do not support DC Energy/Vitols' position. First, because the changes in the PJM case required changes to both the PJM OATT and the PJM Operating Agreement, the changes to PJM's Operating Agreement were subject to the standards under section 206 of the FPA.[41] As such, the Commission's conclusions in that case relied on its finding that PJM had not demonstrated that its existing FTR portfolio netting rules were unjust and unreasonable.[42] Indeed, because the section 206 burden had not been satisfied, the Commission

---

[41] *PJM Interconnection, L.L.C.*, 153 FERC ¶ 61,344, at P 1 n.3 (2015). Section 206 of the FPA is contained in 16 U.S.C. § 824e.

[42] *PJM Interconnection, L.L.C.*, 156 FERC ¶ 61,180, at PP 65, 68 (2016), *order on reh'g*, *PJM Interconnection, L.L.C.*, 158 FERC ¶ 61,093, at P 50 (2017) ("In a complaint under FPA section 206, the burden is to first show that the current tariff is unjust and unreasonable. As the September 15 Order found that PJM did not meet that burden, the Commission, therefore, cannot modify PJM's tariff under FPA section 206.").

expressly stated that it did not consider the issue of whether "eliminating netting offers a more equitable approach to sharing the risks attributable to prevailing flow and counterflow FTRs."[43]

This procedural distinction is very important in the instant case, because DC Energy/Vitol are asking the Commission to apply the findings it made in the PJM case erroneously to the merits of the CAISO's proposal. The Commission's finding in the PJM case amounted to a conclusion that PJM had not established that its existing methodology was unjust and unreasonable, which it must find under Section 206 of the FPA, and therefore the Commission could not accept any proposed changes. DC Energy/Vitol try to persuade the Commission that its findings in the PJM case are findings on the merits of the CAISO's proposal.

In this proceeding, the CAISO is proposing changes to its tariff under section 205 of the FPA. The CAISO is not required to show that its existing tariff requirements are unjust and unreasonable in order to modify its tariff. The Commission need only address the just and reasonableness of the CAISO's proposed changes. For the reasons explained below, the CAISO's proposal easily meets this standard. The Commission should reject DC Energy/Vitols' attempt to twist the findings in the PJM case into a precedent applicable to the CAISO's proposal in this proceeding. Equally egregious is DC Energy/Vitols' attempt to conflate the proposals in question in the PJM case with those in this case, in order to establish that the Commission's discussion of the justness and reasonableness of PJM's existing netting rules are applicable in this CAISO

[43] *PJM Interconnection, L.L.C.*, 156 FERC ¶ 61,180, at P 72.

case. Both the existing PJM provisions and the section 206 proposal in the PJM case are very different from the CAISO tariff provisions before the Commission in this proceeding. When FTRs were underfunded, PJM was required, under its existing rules, to allocate the pro-rata reduction in FTRs in a way that allowed an FTR holder to net the value of *its* negatively valued FTRs against the value of *its* positively valued FTRs on a portfolio-wide basis. This is a very broad approach to allocating revenue insufficiency, considering that FTRs are paid or charged differently on each of the component constraints on which they flow, while PJM only evaluates the aggregate payment or charge for each FTR against one another in a participant's portfolio. PJM proposed to eliminate this portfolio netting of positive and negative aggregate payments for FTRs.

DC Energy/Vitol recognize that the Commission's preliminary findings that the existing netting rules were just and reasonable was based on the portfolio approach used by PJM and then point to the Commission's discussion on the appropriateness of the netting rules where multiple market participants hold the CRRs.[44] DC Energy/Vitol attempt to establish that the Commission's finding in that order is a *per se* conclusion that netting positive and negative valued FTR rules hold with multiple participants as well. The Commission was careful to state there, however, that the provision by PJM's market monitor of examples regarding multiple market participants simply "does not show that the current portfolio netting rules result in unjust, unreasonable, and unduly treatment of prevailing flow FTRs; instead, it demonstrates that the elimination of portfolio

[44] DC Energy at 5, citing *PJM Interconnection, L.L.C.*, 158 FERC ¶ 61,093, at P 48.

netting would only reallocate FTR revenue among various market participants without actually addressing the purported rationale for PJM's proposal, FTR revenue inadequacy."[45] The Commission was clearly pointing out that PJM's proposal to change the netting rules in a multiple market participant scenario was going to reallocate costs among market participants, without even addressing the revenue inadequacy issue PJM stated it sought to address. This further reinforced the Commission's findings as to why, under section 206 of the FPA, it could not accept PJM's proposed changes to its Operating Agreement. The Commission did not, however, speak to the merits of why in an example with multiple market participants one market participant should have greater responsibility to bear the burden of revenue inadequacy. The CAISO has put forth legitimate reasons why this shifting of revenues would be unjust and unreasonable in the CAISO's markets. The Commission is unencumbered by its prior findings in the PJM case to find that the CAISO's proposal here is just and reasonable.

An important distinction between the CAISO's approach to adjusting payments to CRRs versus the PJM methodology is that the CAISO's proposal involves a much more precise approach to account for underfunding of financial transmission rights than did PJM's. The CAISO proposes to allocate congestion revenue insufficiency to CRR holders based on the implied flows that CRRs place on specific revenue-insufficient constraints. In other words, the CAISO finds the precise portion of each CRR that is entitled to revenues associated with

[45] *PJM Interconnection, L.L.C.*, 158 FERC ¶ 61,093, at P 48 (internal citation omitted).

each specific constraint. PJM does not do such accounting of flows. PJM allocates pro-rata reductions in transmission congestion credits in the aggregate based on the defined FTRs, not taking into consideration the implied flow impact of specific FTRs to a specific constraint.

PG&E discusses the difference between the CAISO proposed approach and PJM's approach in first determining the impact of the revenue insufficiency.[46] PG&E correctly describes that for each hour of the day-ahead market, the CAISO would determine the capacity on each binding transmission constraint that is allocated to each CRR using the transmission model employed for each hour of the day-ahead market. This is what the CAISO has also referred to as the implied flow of the notional CRR. Further, PG&E appropriately states that the CAISO will not collect sufficient congestion revenue to fully fund the target payments of CRRs when more capacity is released in the CRR process than is available on a binding constraint. The CAISO is proposing to then reduce the payment to the CRRs that use capacity in the binding direction. PG&E correctly notes that these are the CRRs that rely on more transmission capacity than is physically available in the day-ahead market. This approach is more equitable because a specific CRR will receive the payment based on its notional value or target payment, unless the CRR has implied flow on a specific transmission constraint on which more capacity is allocated to CRRs than is available in the day-ahead market.

[46] PG&E Answer at 9-12.

In contrast, as PG&E explains, PJM calculates the total congestion revenue collected in an hour of the day-ahead market and compares that to the total of the target payments to all FTRs. PJM will reduce the total target payment if the total congestion revenue collected is less than the total target payment. The CAISO chose not to pursue this aggregated approach because it avoids having to reduce payments to a CRR below its notional value or target payment even if the CRR only had implied flow or utilizes capacity on constraints that are not over-allocated. As a foundational matter, the PJM method and CAISO's proposal approach allocation of congestion revenues from two very different starting points. The attempt by DC Energy/Vitol to argue that the merits of netting under the PJM approach are equivalent under the CAISO's approach is an apples-to-oranges comparison.

DC Energy/Vitol either misunderstand or intentionally misconstrue the CAISO's proposal as one that prorates CRRs based on whether they have an overall positive or negative CRR value. The CAISO's proposed enhancements would evaluate whether a CRR places a positive or negative implied flow on specific constraints. One CRR may place negative flows on one constraint and positive flows on another constraint. The CAISO does not propose a portfolio-wide consideration because it instead proposes to evaluate the flows the CRR actually places on the revenue insufficient constraint. Therefore, there is no portfolio to consider. This further highlights why the Commission should not simply accept DC Energy/Vitols' arguments that the Commission has already established in the PJM orders that symmetric adjustments to counter flow CRRs

are the only just and reasonable approach.

3. Applying Symmetric Adjustments to Counter Flow CRRs in the Constraint-by-Constraint Approach Proposed by the CAISO Would Lead to Unjust and Unreasonable Outcomes

As to the merits of adjusting the counter flow CRRs symmetrically, the CAISO carefully examined this option in the stakeholder process and initially even considered a "symmetric" approach comparable to that proposed by DC Energy/Vitol.[47] DC Energy/Vitol describe "symmetry" as scaling the MW value of both prevailing flows and counter flows on a constraint by the ratio of those flows to the net prevailing flow. DC Energy/Vitols' simplistic example does not fully convey the pitfalls of its approach. Specifically, applying the symmetry requested by DC Energy/Vitol would result in: (1) under-paying CRRs with prevailing flow on constraints; and (2) paying some CRRs an amount greater than is needed to hedge the actual day-ahead congestion between two points.

To understand what DC Energy/Vitol are proposing, consider the implied flows of three CRRs on one constraint where one CRR places 1 MW of counter flow on the constraint, the second CRR places 1 MW of prevailing flow on the constraint, and the third CRR places 2 MW of prevailing flow on the constraint. DC Energy/Vitol essentially argue that symmetric treatment should entitle a party owning the first and second CRR to not be attributed any portion of the shortfall because their two CRRs should perfectly net each other out. This would be

---

[47] *See* Congestion Revenue Rights Auction Efficiency – Track 1B Draft Final Proposal, at 7, 12, 33 (May 11, 2018). This CAISO issuance is available on its website page regarding the Track 1B CRR proposal, http://www.caiso.com/informed/Pages/StakeholderProcesses/CongestionRevenueRightsAuctionEfficiency.aspx.

accomplished by finding each CRR's portion of the net prevailing flow on the constraint and then scaling their flows to the derated transmission capacity using that ratio. If the constraint is derated from 2 MW of capacity to 1 MW of capacity, the first CRR would place 0.5 MW of counter flow on the derated constraint (*i.e.*, 1 MW counter flow divided by 2 MW of net prevailing flow multiplied by the derated constraint capacity of 1 MW), the second CRR would place 0.5 MW of prevailing flow on the derated constraint, and the third CRR would place 1 MW of prevailing flow on the derated constraint. While the ratios would change under different scenarios, this example shows that the settlement would allow the 1 MW of counter flow to net out the 1 MW of prevailing flow. DC Energy/Vitol use a different example to convey this same concept, but the purpose of the example is to illustrate DC Energy/Vitol's contention that 1 MW of counter flow should net out 1 MW of prevailing flow to maintain symmetric treatment. The CAISO disagrees, as further explained below.

The CAISO does not propose the symmetric approach because it determined that, under a constraint-specific allocation of congestion revenue insufficiency, an approach applying symmetry to prevailing flow and counter flow CRR capacity on specific revenue insufficient constraints would lead to inefficient outcomes. More specifically, the CAISO concluded that a symmetric approach would lead to anomalous overall CRR valuations that do not reflect the true day-ahead hedging value between two locations on the system. Given the auction inefficiencies the CAISO sought out to solve in the series of stakeholder processes on CRR market rules, the CAISO did not believe such an approach

was desirable. An important goal is to ensure the CRR auction prices reflect the congestion costs in the day-ahead market to ensure market participants can obtain reasonable hedges for supply delivery.

Since the purpose of the proposal effectively is to derate CRRs when there is insufficient revenue to fund them, the CAISO concluded that it would be most appropriate to do so in a way that does not create additional revenue inadequacy and does not create auction valuations based on expectations of CRR payouts instead of expected exposure to congestion in the day-ahead market. In other words, the CAISO's objective is to distribute available congestion revenues to CRR holders as efficiently as possible.

Symmetric treatment of implied prevailing and counter flows on specific constraints would have significant detrimental impacts to the CAISO's markets. The CAISO provides an example in Attachment A to this answer that shows that symmetric treatment of implied prevailing flows and counter flows on specific constraints would lead to the CAISO further under-paying CRRs with prevailing flow on constraints, as well as to the CAISO paying some CRRs an amount greater than is needed to hedge the actual day-ahead congestion between two points. Both results would be inappropriate and inefficient. Therefore, the CAISO has no reasonable basis to apply symmetric treatment of implied flows on specific constraints.

The example in Attachment A first shows that, under DC Energy/Vitols' purported symmetric treatment, the CAISO would underpay CRRs with prevailing flow on constraints to reduce charges to CRRs that place counter flow on the

constraint. This is because prevailing flow CRRs have two sources of funding: (1) congestion revenue a constraint generates in the market, and (2) payments received from counter flow CRRs. Reducing payments received from counter flow CRRs just because congestion revenue generated by the market is reduced exacerbates revenue insufficiency.

The example in Attachment A shows how the CAISO would credit $500 to a CRR that places counter flow on a constraint and charge $1,500 to a CRR that places prevailing flow on the same constraint, when the initial revenue insufficiency on the constraint was only $1,000. This transfer of funds from the CRR that places prevailing flow on the constraint to the CRR that places counter flow on the constraint makes little sense in terms of transmission capacity. The example illustrates how the CAISO charges the CRR that places prevailing flow on the constraint for 75 MW of lost transmission when it only derates the transmission line by 50 MW in the day-ahead market. The CAISO would then transfer 25 MW of transmission charge above and beyond the transmission line derate to the CRR that places counter flow on the constraint for the sake of maintaining symmetry.

The example in Attachment A also shows that symmetric treatment of implied prevailing flows and counter flows on specific constraints would lead to the CAISO paying CRRs with counter flow on constraints an amount greater than is needed to hedge the actual day-ahead congestion between two locations. The example shows that the CAISO would pay a CRR $3,000 when the actual congestion between its source and sink in the day-ahead market is $2,500. If the

CAISO were to pay CRRs amounts greater than is needed to hedge actual day-ahead market congestion between various nodes on the system, auction participants would likely incorporate this anomalous outcome into their bids for CRRs between that source and sink in the CRR auction, which would cause the auction price to deviate further from the expected value of congestion in the day-ahead market.

Auction participants would value the hedge in the CRR auction at $3,000, which is greater than is necessary to actually hedge supply delivery between the source and sink in the day-ahead market – clearly an inefficient outcome. A market participant that appropriately prices its bids, such as a generator or marketer seeking a supply delivery hedge, will be willing to pay around $2,500 based on actual day-ahead market outcomes, *i.e.*, the amount actually required to hedge supply delivery between the source and sink. But other market participants will be willing to pay around $3,000, which is a value derived from a symmetric revenue sufficiency allocation scheme that does not represent the actual cost of congestion between the source and sink. Put another way, the participant that truly wishes to hedge a forward contract for energy between two locations must now be willing to pay more than the actual cost of congestion between the two locations to purchase that hedge.

The CAISO recognizes that in such cases, the auction is “efficiently” pricing the value of the CRR as a financial product accounting for final settlement values. However, this price moves the overall CRR auction pricing further away from the intended purpose of distributing supply delivery hedges for the expected

cost of congestion between two locations on the system. In other words, the resulting auction prices would be even further away from the expected cost of congestion than they are today, which is contrary to the CAISO's goal of creating an efficient CRR product with an efficient auction that appropriately prices the cost of delivering power on its system.

The CAISO's approach to accounting for revenue insufficiency based on the prevailing flow a CRR places on specific constraints is further supported by considering what would occur in the CRR auction if it were to be rerun with a lower amount of transmission capacity on a particular constraint. To achieve a feasible amount of CRRs on the constraint with less transmission capacity, the auction's simultaneous feasibility test would not cut the counter flows, it would only cut the prevailing flows on the constraint. This is because the counter flows enable more prevailing flow. It only worsens the situation if counter flows are reduced when the transmission capacity is reduced. The simultaneous feasibility test would find the counter flows feasible to flow on the reduced transmission because they do not contribute to the overage. In fact, the simultaneous feasibility test may clear more counter flow, which is exactly the opposite of what DC Energy/Vitol propose – *i.e.*, to maintain symmetry, the CAISO would have to reduce counter flows.

DC Energy/Vitols' claim that the proposal treats equivalent CRR combinations inequitably assumes that constraint-specific symmetry must be maintained.[48] As described above and in the attached example, in order to

[48] DC Energy/Vitol at 7-11.

achieve what DC Energy/Vitol describe as “equitable” treatment of combinations of individual CRRs, one must first be willing to pay an individual CRR more than its individual day-ahead value as a congestion hedge. There is no justification for paying a CRR more than its day-ahead value due only to a revenue insufficiency allocation scheme. Such an approach would lead to inefficient bidding and therefore inefficient valuations in the CRR auction, the result of which would not represent the actual expected congestion cost associated with supply delivery in the day-ahead market. Indeed, this approach would seem to allow for speculative behavior that could undercut the use of CRRs as a hedge for supply delivery transactions.

DC Energy/Vitol further attempt to cast doubt on the fact that counter flow revenues on specific constraints are a source of funding for prevailing flow CRRs on those same constraints.[49] This fact is self-evident. If the revenues from counter flow CRRs on a constraint plus the day-ahead market congestion revenues on the constraint equaled the amount needed to pay CRRs placing prevailing flow on the constraint, the CAISO, and market participants, would happily accept that those CRRs are indeed revenue adequate. The revenues from counter flow CRRs on the constraint are a source of funding for the CRRs that place prevailing flow on the constraint.

Through the stakeholder process, the CAISO has created a proposal that is precise, just and reasonable, and provides an equitable allocation of available congestion revenues to CRRs that are consistent with the underlying available

[49] *Id.* at 11.

transmission. Further, the CAISO has adopted features that ensure the "product" bid in the CRR auction reflects the expected cost of congestion for supply delivery. The Commission has recognized that, in other ISOs and RTOs, bidders on financial transmission rights are best positioned to value the financial transmission right product under any revenue insufficiency allocation scheme.[50]

4. The Assertion by DC Energy/Vitol that the CAISO May Operate the Day-Ahead Market to the Benefit or Detriment of Specific CRRs is Unfounded and Uncalled for

DC Energy/Vitol claim that, given the CAISO's discretion in operating its system, the CAISO would be able to direct shortfalls toward certain CRRs and direct surpluses in other hours to other CRRs without the knowledge of the Commission or stakeholders, resulting in shortfalls not being trued up.[51] This suggestion is outrageous. DC Energy/Vitol are claiming that the CAISO would ignore its obligation to administer the day-ahead market to support the reliable operation of the CAISO controlled grid and instead discriminate in favor of certain market participants. That would violate the core tenets of what the CAISO does both as a system operator and as an independent administrator of wholesale markets. Even assuming the CAISO were inclined to the sort of corruption involved in distorting its physical operation of the grid to advantage a hypothetically preferred market participant and the CAISO attempted to do so, the volume of market data the CAISO publishes would make such a scheme

---

[50] "As the Commission has previously held, FTRs are not guaranteed to be fully funded, and FTR holders are well positioned to manage and mitigate that risk." *PJM Interconnection, L.L.C.*, 163 FERC ¶ 61,165, at P 30, *citing PPL EnergyPlus, LLC v. PJM Interconnection, L.L.C.,* 136 FERC ¶ 61,060, at PP 29, 32.

[51] DC Energy/Vitol at 15 n.31.

entirely transparent to stakeholders. The CAISO publicly discloses a wide range of data including what constraints are enforced in the day-ahead market, the applicable shift factors, and shadow costs, all of which provide full visibility and would allow interested parties to identify any such behavior. These are serious and unfounded allegations that should have no place in the Commission's consideration of whether the CAISO proposal is just and reasonable.

DC Energy/Vitol ask the Commission to direct the CAISO to publish the capacity limits used to clear the day-ahead market on each constraint for each hour and provide information regarding each shortfall and surplus determination and allocation.[52] There is no need for such a directive. The CAISO already makes the necessary information available, including the constraints enforced, limits that apply to transmission constraints, and shift factors. This information, together with information available regarding the CRRs, allows market participants to do their own evaluations. Furthermore, for several years the CAISO has the breakdown of CRR surpluses and shortfalls by transmission constraint on a daily granular and a monthly aggregated basis as part of its monthly market performance reports.

[52] *Id.* at 17.

D. The Commission Should Accept the CAISO's Proposal to Decrease the Percentage of System Capacity Available in the Annual CRR Allocation and Auction Processes

All commenters support the CAISO's proposal to decrease the percentage of system capacity available in the annual CRR allocation and auction processes from 75 percent to 65 percent. The support is conditional in a couple instances.

Calpine supports the proposal without condition.[53] WPTF fully supports the proposal to adjust annual release quantities, but also encourages the Commission to encourage the CAISO to consider other mechanisms to maximize the amount of grid capability released in the CRR process by releasing increasing levels of grid capacity as the operating month nears.[54] Specifically, WPTF suggests that an approach similar to a mechanism in place in the Electric Reliability Council of Texas (ERCOT) could be considered during the CAISO's Track 2 stakeholder process.

Track 2 of the CRR auction efficiency stakeholder initiative is planned to consider potential more comprehensive changes to the CRR allocation and auction design. The CAISO believes it is reasonable to assess the impact of enhancements developed over the past year on auction performance prior to pursuing further potential design changes. To allow time for this assessment, the CAISO intends to initiate the policy development process with stakeholders beginning in mid-2019, targeting implementation of any further CRR allocation and auction enhancements in time for the 2022 allocation and auction process,

---

53 Calpine at 5-6

54 WPTF at 7-8.

which begins in September 2021.

WPTF's request goes beyond the scope of this proceeding. The CAISO's July 17 Tariff Amendment is just and reasonable standing alone. There is no justification for linking approval of this proposal to the consideration of any particular options in the Track 2 process. WPTF is free to suggest any alternatives when Track 2 commences.

DC Energy/Vitol state that, if full CRR funding is no longer guaranteed, implementing the proposed reduction in released capacity would be prudent.[55] For the reasons explained above, DC Energy/Vitols' opposition to the modified funding of CRRs under the July 17 Tariff Amendment are without merit.

E. There Is No Justification for Imposing Additional Reporting Requirements on the CAISO

Some commenters suggest that the Commission should condition its approval of the July 17 Tariff Amendment on the CAISO's submitting certain reports to the Commission. SCE asks that the Commission require the CAISO to report regularly on the efficacy of both the April 11 Tariff Amendment approved in Docket No. ER18-1344 and the tariff revisions proposed in this proceeding.[56] AReM requests that the Commission require the CAISO to evaluate and report on the extent to which implementing the decreased release of system capacity in the annual CRR allocation and auction process results in more feasible CRRs and a decreased need to allocate revenue shortfalls to CRR holders.[57]

---

55 DC Energy/Vitol at 2.

56 SCE at 3.

57 AReM at 4.

These requests are not justified. In response to comments directed to the CAISO Board of Governors, the CAISO has committed to regular reporting on the performance of the proposed mechanism to allocate underfunding, in order to allow all interested parties to assess the impacts of enhancements developed by the CAISO to address the efficiency of its CRR auctions and improve the CRR products.[58] There is no benefit to requiring that these reports by submitted to the Commission. In comparable circumstances, the Commission has not required that stakeholder reports be submitted to the Commission.[59] These reports will be public and any party can choose to submit these reports to the Commission in any future proceeding addressing the CAISO's CRR processes. Additionally, the CAISO expects to discuss the performance of the new proposal in its standard Market Performance Forum meetings.

F. The Commission Should Not Condition Approval of the July 17 Tariff Amendment on the Results of Other CRR Enhancements or the Results of Future Stakeholder Initiatives

Powerex supports the July 17 Tariff Amendment but contends that these tariff revisions should be considered only an interim measure and states that the CAISO should works with stakeholders to develop and implement a "more durable solution" in Track 2 of the CRR auction efficiency stakeholder process.[60]

---

58 *See* CMUA at 3-4.

59 "Consistent with CAISO's routine practice of sharing market performance information in its monthly reports, we expect CAISO to share with its stakeholders the information necessary to evaluate the performance of the flexible ramping product and to evaluate the potential for further refinements to the flexible ramping product. We find that providing this information through the already established forums will provide stakeholders with sufficient data and transparency. Thus, we will not require CAISO to file reports containing this information with the Commission, as requested by PG&E." *Cal. Indep. Sys. Operator Corp*., 156 FERC ¶ 61,226, at P 37 (2016).

60 Powerex at 4-6.

There is no basis for approving the tariff revisions only an interim basis. The CAISO's proposal, which is comparable to Commission-approved market rules at other ISOs and RTOs and which is otherwise reasonable for the reasons explained above and in the July 17 Tariff Amendment, is just and reasonable on its own terms. As with any market rules approved by the Commission, the CAISO will continue to assess the impacts of the revised CRR provisions. To the extent the CAISO concludes that further enhancements are warranted in the future, the CAISO will consider stakeholder input on such enhancements and present them to the Commission in a separate proceeding.

Powerex suggests that reducing payouts to CRR holders after the close of the day-ahead market has the potential to erode the value of CRRs as a hedge and that the CAISO should develop an approach to "derate" CRRs in advance of the day-ahead market.[61] The CAISO considered such an approach but implementing it would require significant enhancements not achievable in the near future.

APPA supports the July 17 Tariff Amendment.[62] APPA notes that other proposals to modify the CAISO's CRR market rules, and specifically the proposal to replace the CRR auction with a structure based on voluntary bilateral transactions, are outside the scope of this proceeding. APPA requests that the Commission not rule on the merits of this "willing seller/buyer" proposal in this

---

61 *Id.* at 6.

62 APPA at 3-5.

proceeding.[63] The CAISO agrees that these issues are beyond the scope of this proceeding. Although the CAISO has concerns about the "willing seller/buyer" proposal, including concerns as to whether such a proposal would be consistent with the Commission's open access principles, the CAISO is not pre-judging any proposals that may be considered in Track 2 of the CRR auction efficiency stakeholder initiative.

III. Conclusion

For the foregoing reasons, the Commission should accept the tariff revisions contained in the July 17 Tariff Amendment without condition or modification.

Respectfully submitted,

Roger E. Collanton
General Counsel
Anna A. McKenna
Assistant General Counsel
David S. Zlotlow
Senior Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
amckenna@caiso.com
dzlotlow@caiso.com

Michael Kunselman
Bradley R. Miliauskas
Alston & Bird LLP
The Atlantic Building
950 F Street, NW
Washington, DC 20004
Tel: (202) 239-3300
Fax: (202) 654-4875
michael.kunselman@alston.com
bradley.miliauskas@alston.com

Counsel for the California Independent System Operator Corporation

Dated: August 23, 2018

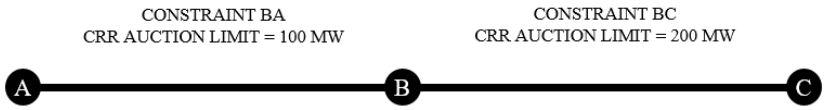
[63] *Id.* at 5; *see also* DMM at 2-3 (recommending that the CAISO consider markets based on willing buyers and sellers during Track 2).

Attachment A

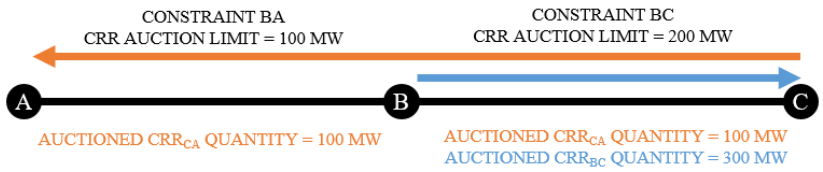
Attachment A

The example discussed below demonstrates that "symmetric" treatment of implied prevailing flows and counter flows on specific constraints would lead to: (1) the CAISO further under-paying congestion revenue rights (CRRs) with prevailing flow on constraints to reduce charges to counter flow CRRs; and (2) the CAISO paying some CRRs an amount greater than is needed to hedge the actual day-ahead congestion between two points. Both results are inappropriate and inefficient and therefore the CAISO can find no reasonable basis to apply "symmetric" treatment of implied flows on specific constraints.

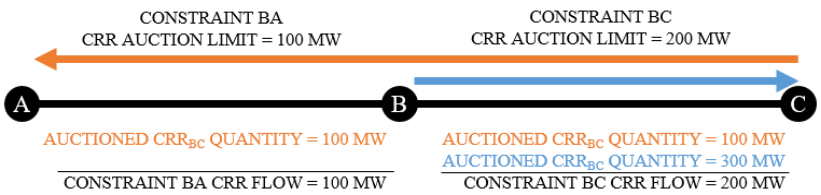
Consider a three-node system with two constraints. The transmission line between point A and point B is rated at 100 megawatts (MW), meaning it can carry 100 MW in the A to B direction or 100 MW in the B to A direction. The transmission line between point B and point C is rated at 200 MW, meaning it can carry 200 MW in the B to C direction or 200 MW in the C to B direction.



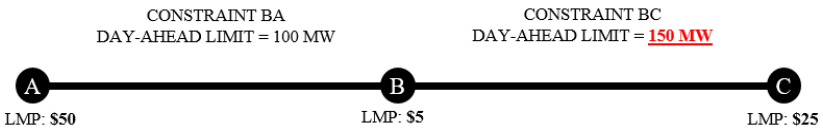
The CAISO sold one CRR from C to A that places 100 MW of flow on both constraints and one CRR from B to C that places 300 MW of flow on constraint BC.



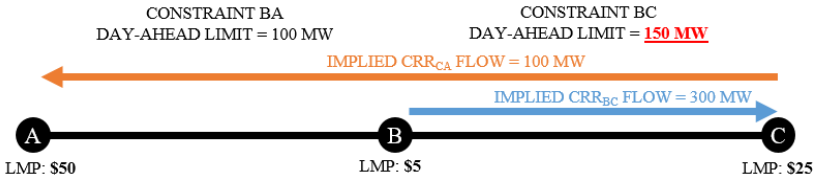
These awards are simultaneously feasible on this system because 100 MW of flow is placed on constraint BA (which is less than or equal to the auction limit of 100 MW) and a net 200 MW of flow is placed on constraint BC (*i.e.*, 300 MW of CRR_{BC} flow minus 100 MW of CRR_{CA} flow equals 200 MW of flow on constraint BC, which is less than or equal to the auction limit of 200 MW).



Now consider if the CAISO must derate constraint BC by 50 MW from 200 MW to 150 MW in the day-ahead market. Also consider if the day-ahead market locational marginal price at A is $50, the locational marginal price at B is $5, and the locational marginal price at C is $25.



The CRRs place the same flows on these constraints as they did in the auction. CRR$_{CA}$ has 100 MW of implied flow on both constraints and CRR$_{BC}$ has 300 MW of implied flow on constraint BC.



Currently, under a full funding methodology, the CAISO settles the full notional value of both CRRs. The difference in the marginal congestion components of the locational marginal prices between C and A is $25, so the CAISO pays CRR$_{CA}$ $2,500 ($25 multiplied by 100 MW). The difference in the marginal congestion components of the locational marginal prices between B and C is $20, so the CAISO pays CRR$_{BC}$ $6,000 ($20 multiplied by 300 MW).

Notional settlement value			
CRR Index	CRR Quantity	MCC difference source to sink	Notional CRR Payment
CRR$_{CA}$	100 MW	$25	$2,500
CRR$_{BC}$	300 MW	$20	$6,000

However, constraint BC is revenue-insufficient because the day-ahead market can only collect congestion revenues associated with the 150 MW of available transmission plus 100 MW of additional transmission made available to the day-ahead market by the counter-flow CRR, while the CRRs place flows greater than the available transmission in the day-ahead market. The CAISO proposes to settle only the portion of each CRR that is revenue-sufficient. CRR_{BC} does not receive full notional value because it is only paid up to its congestion-supported implied flow on the constraint in the day-ahead market. Constraint BC does not limit the implied flow of CRR_{CA} in any way because it is not binding for flows in that direction.

Constraint	Constraint Shadow Price (A)	Day-ahead limit plus counter-flow CRR transmission (B)	Day-ahead congestion revenue (C) =A×B	CRR	CRR Quantity (D)	Shift factor to constraint (E)	Implied CRR flow on constraint (F) =D×E	Constraint-specific notional value (G) =A×F	Percent of implied prevailing CRR flow (H)	Constraint-specific settlement value (I) =min(C×H,G)
BC	$20	250 MW[1]	$5,000	CRR_{CA}	100 MW	-1.00	-100 MW	($2,000)	0%	($2,000)
				CRR_{BC}	300 MW	1.00	300 MW	$6,000	100%	$5,000

The CAISO settles the $5,000 it collected in the day-ahead market on constraint BC among those CRRs with implied prevailing flow on constraint BC by scaling all 300 MW of implied prevailing flow on the constraint to fit the 250 MW of available transmission in the day-ahead market.

There is no scaling associated with constraint BA because it is revenue sufficient. The day-ahead market collects 100 MW in congestion revenues associated with the energy schedules on constraint BA. The CAISO settles $4,500 for CRR_{CA} on constraint BA (the $45 shadow price of constraint BA multiplied by 100 MW of CRR_{CA} implied flow on constraint BA).

- **CRR_{CA} is paid $2,500.** The CAISO settles CRR_{CA} for $4,500 on constraint BA and ($2,000) on constraint BC. CRR_{CA} is paid $2,500 which is the same value as the difference in the marginal congestion components of the locational marginal prices between C and A multiplied by the 100 MW CRR position ($25 congestion between C and A multiplied by 100 MW). CRR_{CA} is not derated because its implied flow is not limited by constraint BA nor constraint BC. CRR_{CA} is compensated for its full day-ahead market hedging value.

- **CRR_{BC} is paid $5,000.** The CAISO settles CRR_{BC} for $0 on constraint BA and $5,000 on constraint BC. CRR_{BC} is paid $5,000 which is $1,000 less than its

[1] Value includes the additional transmission made available to the day-ahead market by the counter flow CRR.

notional value of $6,000. CRR_{BC} is derated because its implied flow is limited by constraint BC.

As discussed in the body of the CAISO's answer, DC Energy/Vitol argue that both the implied prevailing flow and implied counter flow on constraint BC must be treated "symmetrically" in order to be treated equitably. The following symmetric settlement illustrates that there is nothing equitable about maintaining symmetry, as CRR_{CA} will be paid a sum greater than its actual day-ahead market value as a hedge between C and A.

Constraint BC is revenue-insufficient because the day-ahead market can only collect congestion revenues associated with the 150 MW of available transmission plus 100 MW of additional transmission made available to the day-ahead market by the counter flow CRR, while the CRRs place flows greater than the available transmission in the day-ahead market.

"Symmetric" treatment would scale both the implied prevailing flow and the implied counter flow on constraint BC back to 150 MW of transmission. This would be accomplished by determining the percentage of implied net flow each CRR places on the constraint. A CRR's percentage of implied net flow equals a CRR's implied flow on the constraint divided by the net CRR implied flow on the constraint.

"Symmetric" treatment of the implied flows on constraint BC would yield the following CRR derates to mitigate for the 50 MW derate on constraint BC (the 50 MW derate can also be represented as a revenue insufficiency of $1,000, or 50 MW multiplied by the $20 constraint shadow price).

							Transmission capacity allocation			Revenue shortfall allocation		
Constraint shadow price	CRR	CRR Quantity	Shift factor to constraint BC	Implied CRR flow on constraint	Constraint-specific notional value	Percent of implied net flow	Derated line capacity	Scaled implied flows	Trans. capacity derate B to C	Revenue shortfall[2]	Portion of shortfall	Constraint-specific settlement value
(A)		(B)	(C)	(D) = B×C	(E) = A×D	(F) = D / ∑(D)	(G)	(H) = F×G	(I) = H-D	(J) = (G×A)-∑(E)	(K) = F×J	(L) = E+K
$20	CRR_{CA}	100 MW	-1.00	-100 MW	($2,000)	-50%[3]	150 MW	-75 MW	+25 MW	($1,000)	$500	($1,500)
	CRR_{BC}	300 MW	1.00	300 MW	$6,000	150%[4]		225 MW	-75 MW		($1,500)	$4,500

[2] This value is the total revenue insufficiency that the CAISO must allocate to CRR holders.

[3] CRR_{CA}'s percent of implied net flow is its -100 MW of implied flow divided by the 200 MW of net flow on constraint BC. -100 divided by 200 equals -50%.

[4] CRR_{BC}'s percent of implied net flow is its 300 MW of implied flow divided by the 200 MW of net flow on constraint BC. 300 divided by 200 equals 150%.

There are two issues with this settlement result that indicate it would be a poor product definition.

First, the CAISO must under-pay CRRs by an amount greater than the initial revenue insufficiency itself. There is $1,000 of revenue insufficiency, yet under the "symmetric" treatment, the CAISO must under-pay CRR_{BC} by $1,500 (see column K). The "symmetric" treatment scheme leads to the CAISO under-paying certain CRRs by an amount greater than the initial insufficiency it set out to allocate in the first place. It is shown that the $500 in additional revenue inadequacy, produced only as a result of the "symmetric" treatment scheme, is directly transferred to the CRR that places counter flow on the constraint.

The transfer makes little sense in terms of transmission capacity. The CAISO charges CRR_{BC} for 75 MW of lost transmission when it only derated the transmission line by 50 MW in the day-ahead market (the -75 MW figure shown in column I). The CAISO must then transfer 25 MW of those payments to CRR_{CA} for the sake of "symmetry" (the +25 MW figure shown in column I). This dynamic goes beyond simply derating infeasible CRRs, because the CAISO would also derate otherwise feasible implied counter flows. It is shown that for every MW of implied counter flow reduced on the constraint, the CAISO must reduce another MW of implied prevailing flow above and beyond the initial infeasible transmission capacity.

Second, this settlement result is inappropriate because it results in a payment to CRR_{CA} in excess of its actual day-ahead value as a hedge. Accounting for the revenue transfers, the full settlement value of each CRR follows:

- **CRR_{CA} is paid $3,000.** The CAISO settles CRR_{CA} for $4,500 on constraint BA and ($1,500) on constraint BC. CRR_{CA} is paid a total of $3,000 which is greater than the $2,500 difference in the marginal congestion components of the locational marginal prices between C and A multiplied by the 100 MW CRR position ($25 congestion between C and A multiplied by 100 MW). CRR_{CA} is compensated at a value that is greater than its full day-ahead market hedging value.

- **CRR_{BC} is paid $4,500.** The CAISO settles CRR_{BC} for $0 on constraint BA and $4,500 on constraint BC. CRR_{BC} is paid $4,500 which is $1,500 less than its notional value of $6,000. CRR_{BC} is derated by an amount greater than the initial insufficiency the CAISO set out to allocate in the first place.

The CAISO pays CRR_{CA} an amount greater than is needed to hedge the congestion from C to A due solely to a revenue sufficiency allocation scheme, which under "symmetric" treatment, would be divorced from the actual purpose of the product. A market participant that desires to hedge 100 MW supply delivery from C to A must only hedge $2,500 in congestion.

Auction participants would likely incorporate this outcome into their bids for C to A CRRs, which would cause the auction price to deviate further from the expected value of congestion in the day-ahead market. Auction participants would value a hedge from C to A in the CRR market at $3,000, which is greater than is necessary to actually hedge supply delivery from C to A in the day-ahead market. A market participant that appropriately prices its bids, such as a generator or marketer seeking a supply delivery hedge from C to A, based on actual day-ahead market outcomes, will be willing to pay around $2,500, or the amount actually required to hedge supply delivery from C to A. Other market participants, however, will be willing to pay around $3,000, which is a value derived from a "symmetric" revenue sufficiency allocation scheme that does not represent the actual cost of congestion between C and A.

Put another way, the participant that truly wishes to hedge a forward contract for energy between two locations must now be willing to pay more than the actual cost of congestion between the two locations to purchase that hedge. This is an inappropriate and inefficient outcome. One might argue that $3,000 is the "efficient price" for the financial product accounting for final settlement values. However, this price moves the overall CRR auction pricing further away from the intended purpose of distributing supply delivery hedges for the expected cost of congestion between two locations on the system. In other words, the resulting auction prices would be even further away from the expected cost of congestion than they are today.

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon all of the parties listed on the official service list for the above-referenced proceeding, pursuant to the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California, this 23rd day of August, 2018.

Grace Clark
Grace Clark