164 FERC ¶ 61,209
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Kevin J. McIntyre, Chairman;
Cheryl A. LaFleur, Neil Chatterjee,
and Richard Glick.

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

ORDER ON TARIFF AMENDMENTS

(Issued September 20, 2018)

1. On July 17, 2018, the California Independent System Operator Corporation (CAISO) filed, pursuant to section 205 of the Federal Power Act (FPA),[1] proposed tariff amendments to improve the efficiency of its congestion revenue rights (CRR) market rules. Specifically, CAISO proposes to: (1) eliminate full funding of CRRs and instead scale CRR payouts, on a constraint-by-constraint basis, up to the extent that CAISO collects sufficient revenue through the day-ahead market congestion charges and charges to counterflow CRRs (Scaling Proposal); and (2) decrease the percentage of transmission system capacity available in the annual CRR allocation and auction processes from 75 percent to 65 percent (Capacity Release Reduction Proposal). We accept the Capacity Release Reduction Proposal, effective September 24, 2018, as requested. However, as discussed below, we reject the Scaling Proposal as not just and reasonable.

I. **Background**

A. **CRR Process**

2. CAISO states that the primary purpose of CRRs is to facilitate long-term contracting by load-serving entities (LSEs) and suppliers by permitting them to hedge congestion costs incurred in the day-ahead market.[2] CRRs are financial contracts that entitle CRR holders to be paid or require them to pay for congestion on a defined transmission path between two points and for a defined period of time during the term of the contract. CRRs achieve this by giving a CRR holder the right to be paid an amount

---

[1] 16 U.S.C. § 824d (2012).

[2] CAISO Transmittal at 2, 7; *see also Cal. Indep. Sys. Operator Corp.*, 163 FERC ¶ 61,237 (2018) (Track 1A Order) (stating the same).

equal to the difference in the congestion component of the day-ahead locational marginal price (LMP) between a source and a sink, up to the quantity of megawatts (MW) that defines the CRR.[3] A prevailing flow CRR is positively valued, meaning that the stream of revenues to which the holder is entitled is a positive value given the difference between the day-ahead congestion price at the sink point of the CRR and the day-ahead congestion price at the source. A counterflow CRR is negatively valued.

3. CAISO's CRR release process has three time scales: (1) long-term; (2) annual; and (3) monthly. CAISO releases CRRs representing up to 60 percent of its transmission capacity in the long-term time scale, up to 75 percent in the annual time scale, and up to 100 percent in the monthly time scale.[4] CAISO releases its long-term CRRs through allocation to LSEs. For the annual and monthly processes, CAISO allocates CRRs to LSEs and then auctions off non-allocated capacity up to the percentage allowed for that time scale. In all time scales, CAISO allocates CRRs to LSEs based on their nominations and historic load.[5]

4. CAISO determines the quantity of CRRs available in the annual and monthly CRR allocations and auctions using a CRR model (the allocation/auction model) that is based on the most up-to-date direct current full network model.[6] This model is intended to reflect, as closely as possible, transmission constraints and network topology expected in the day-ahead market. The allocated CRR nominations are cleared against a percentage of the transmission system capacity in the full network model. After the allocation process, CRRs corresponding to the remaining transmission capacity are made available in the auction process to all eligible market participants. If, for example, after the annual allocation process, 70 percent of transmission system capacity has been allocated to LSEs, the remaining five percent is made available for the annual auction process. In

---

[3] For example, if in a certain hour the day-ahead LMP at Point A (the sink) was $50/MWh with a congestion component of $20 and the LMP at Point B (the source) was $30/MWh with a congestion component of $0, the difference in congestion would be $20 per MW, and a 1 MW CRR from Point B (the source) to Point A (the sink) would generate $20 of revenue for the CRR holder in that hour. CAISO Transmittal at 7-8.

[4] *Id.* at 9. CAISO releases CRRs representing 100 percent of system transmission capacity minus a pre-determined de-rate factor which generally limits the available system capacity to approximately 82.5 percent. CAISO Filing, Attachment C: CRR Auction Analysis Report, at 21 (Nov. 21, 2017).

[5] *Id.* at 8-9.

[6] CAISO Transmittal at 9.

addition, the allocated CRR holders can make their CRRs available for sale in the auction.[7]

5. CAISO maintains a CRR balancing account in which it collects day-ahead congestion revenues, payments from counterflow CRRs, and CRR auction revenues. This account is used to pay positively-valued CRRs. Any deficit (or surplus) in the CRR balancing account is charged (or paid) to measured demand[8] on a pro rata basis and settled daily.[9] CAISO explains that because CRR holders are guaranteed payment of their CRR's full MW entitlement value, or notional value,[10] measured demand effectively underwrites the risk of deficits in the balancing account.

6. CAISO launched a stakeholder process in 2017 to assess CRR auction efficiency, including the issues of auction revenue shortfall[11] and CRR revenue insufficiency. CAISO has divided the process to improve CRR auction efficiency into four tracks. As CAISO explains, Track 0 focused on CRR auction enhancements that CAISO could implement within its current tariff authority (i.e., that do not require tariff changes),[12]

---

[7] *Id.* at 8-9 (describing the allocation and auction processes and noting that market participants can also trade those CRRs through secondary market transactions).

[8] *Id.* at 9. Measured demand includes metered demand within the CAISO footprint plus exports. *Id.* at 4.

[9] CAISO, Fifth Replacement FERC Electric Tariff, Settlement of Day-Ahead Market Transactions, CRR Settlements, § 11.2.4.4.1.

[10] CAISO defines the notional CRR value as the day-ahead LMP difference between the CRR's source and sink multiplied by the MW quantity of the CRR. CAISO Transmittal at 4; *see also* CAISO Filing, Attachment A, Proposed CAISO Tariff, Appendix A, Master Definition Supplement (proposing a new defined term of "Notional CRR Value").

[11] CAISO states that with an efficient CRR auction, prices of auctioned CRRs are expected to generally reflect market participants' expectations of congestion exposure in the day-ahead market, as adjusted for risk premium, time value of money, and hedge value. However, CAISO notes that this has not been the case in recent years as the discount in auction prices relative to CRR payouts far exceeds any reasonable risk premium and time value of money adjustment.

[12] CAISO Transmittal at 10. These included greater transparency on transmission outage reporting performance, CAISO process improvements, and reviewing current modeling criteria. *Id.*

which CAISO has implemented. In the Track 1A tariff changes, which the Commission accepted on June 29, 2018,[13] CAISO made revisions to address the auction revenue shortfall issue by: (1) limiting the paths that are available through the CRR auction to only delivery paths, i.e., paths comprised of source and sink pairs that are associated with supply delivery to load; and (2) updating the reporting requirement for transmission outages to better align that reporting process with the CRR auction timeline. The instant filing concerns the Track 1B tariff changes, which, as explained below, focus on enhancements to address the CRR revenue insufficiency issue.[14]

B. CAISO's Filing

7. CAISO's Track 1B filing focuses on the problem of revenue insufficiency, which occurs when congestion revenue (including congestion charges and payments from counterflow CRRs) is not sufficient to fund payments to CRR holders.[15] CAISO states that the primary cause of revenue insufficiency is differences in transmission modeling between the CRR full network model and the day-ahead market model.[16] If the models were identical, CAISO states, congestion revenue in the day-ahead market should be sufficient to fully fund payments to CRR holders. However, CAISO explains that, if a constraint is tightened in the day-ahead market model relative to the model used in the CRR allocation and auction model, there will not be enough energy scheduled over the constraint in the day-ahead market to provide sufficient congestion revenue to fund the notional value of all CRRs that have implied flows over that constraint.[17]

8. CAISO states that the revenue insufficiency problem is separate from the auction revenue shortfall problem, but argues that the two problems are related, because both are related to differences in transmission modeling between the model used in CRR allocation and auction processes and that used in the day-ahead market.[18] CAISO explains that if the auction model accurately reflected more constrained day-ahead

---

[13] Track 1A Order, 163 FERC ¶ 61,237 at PP 1, 62-76.

[14] Track 2, the fourth and final track, is planned to consider potentially more comprehensive changes to the CRR allocation and auction design. CAISO Transmittal at 10.

[15] *Id.* at 13.

[16] *Id.*

[17] *Id.* at 13-14.

[18] *Id.* at 15.

conditions, CRR auction prices would likely be higher, reflecting higher expected day-ahead market congestion payments.[19] Thus, CAISO states that the changes proposed in the instant filing further address the auction revenue shortfall issue.

9. As stated above, CAISO's Track 1B filing contains two parts: (1) the Scaling Proposal to eliminate the current full funding of CRRs from the CRR balancing account, and instead scale CRR payouts on a constraint-by-constraint basis; and (2) the Capacity Release Reduction Proposal to change the amount of capacity released in the annual CRR allocation and auction processes from 75 percent of transmission system capability to 65 percent.[20]

1. Scaling Proposal

10. Under the filing's Scaling Proposal, CAISO proposes to fund CRR payments solely based on the day-ahead market congestion revenue and revenue from counterflow CRR holders, rather than relying on the CRR balancing account to make up any revenue insufficiency. Under CAISO's proposal, for each hour of the day-ahead market, CAISO will compare the congestion revenue and revenue from counterflow CRR holders for each constraint to the payments due to prevailing flow CRR holders for that constraint. CAISO states that when it does not collect sufficient revenue to pay prevailing flow CRRs the full notional value of their implied flow[21] over a constraint in an hour, CAISO will scale the payment to all CRRs that have implied flow in the direction of congestion on that constraint.[22] Scaling will be in proportion to each CRR's implied MW flow relative to other CRRs' implied MW flow on that constraint.[23]

11. CAISO proposes to scale CRR payments only in the prevailing flow direction in the event of an over-subscribed constraint and not scale payments due from counterflow

---

[19] *Id.*

[20] CAISO states that the proposals are complementary and substantively severable, but notes that the Scaling Proposal without the Capacity Release Reduction Proposal would potentially erode CRR auction revenue. In contrast, CAISO states that the Capacity Release Reduction Proposal is just and reasonable on its own. *Id.* at 6, 16.

[21] Although the day-ahead market does not model CRRs, a CRR can be thought of as having an "implied flow" over constraints for which CAISO settles the CRR. *Id.* at 8.

[22] *Id.* at 17.

[23] *Id.* at 21.

CRR holders resulting from congestion on the same constraint.[24] CAISO states that although there are arguments in favor of scaling counterflow CRRs so that prevailing flow and counterflow CRRs are valued on the same basis in the auction, counterflow CRRs fund prevailing flow CRRs. Thus, CAISO explains, discounting counterflow CRRs may increase revenue insufficiency. CAISO notes that some stakeholders argue that if one CRR has an implied counterflow to another CRR on a constraint, a party holding both CRRs should have a net settlement of $0 because that party does not contribute to revenue insufficiency. CAISO states that this is not the case because payments from a counterflow CRR holder fund all CRRs with implied flows in the direction of congestion, not just one specific CRR. In addition, CAISO argues that netting the flows could result in inequitable treatment of two CRR holders if they have the same prevailing flow CRR on the same constraint but receive different settlements.[25]

12. CAISO states that it will not credit CRRs beyond their notional CRR value. It is therefore possible that there may be a revenue surplus remaining after CAISO has credited all CRRs for their notional value as to that constraint in a given hour. To minimize reductions in CRR payments due to scaling, CAISO proposes to hold these revenue surpluses in constraint-specific congestion revenue funds and use them to provide make-whole payments to CRR holders. CAISO will provide make-whole payments for each day and at the end of each month, and by constraint each time. CAISO proposes for a CRR's daily settlement to be the sum of its revenue-supported CRR values across the hours of that day, plus any daily CRR make-whole payment. CAISO states that daily make-whole payments are important to avoid unnecessarily exposing market participants to the CAISO credit requirements, which trigger daily. However, CAISO explains that each CRR will only have a claim to surplus revenues if it had implied flow on the constraint in the hour that CAISO collected the surplus.[26] Any funds remaining in a daily constraint-specific CRR congestion revenue fund after the daily settlement will roll over to a monthly constraint-specific CRR congestion fund. CRRs for which the sum of daily CRR settlement values on a constraint for the month are

---

[24] *Id.* at 18.

[25] *Id.* at 32.

[26] CAISO provides an example where in one hour a single CRR (CRR_1) has a modeled flow over a constraint, and in the next hour two different CRRs (CRR_2 and CRR_3) have a modeled flow over the same constraint. If CAISO collects excess congestion revenue on that constraint in the first hour, then that revenue would be reserved for CRR_1 in that hour to offset any amounts CAISO scales that same CRR in other hours. CRR_2 and CRR_3would not have access to the first hour surplus revenues. *Id.* at 21.

less than the sum of CRR notional value on a constraint over that month are eligible for a monthly offset to the scaled payments. As in the daily settlement, CAISO will credit CRR holders up to the notional value from the whole month, to the extent the constraint-specific fund has sufficient revenue reserved. CAISO states that it will settle any amount remaining in the monthly constraint-specific CRR congestion fund to monthly measured demand.[27]

13. CAISO states that there may be hours where no CRR holder has been awarded an entitlement to the transmission capacity over a certain constraint. CAISO explains that the congestion revenues generated from that constraint during these hours will go to the CRR balancing account to be settled daily to measured demand.[28]

14. CAISO states that it chose to use a constraint-specific flow, rather than allocating the cost of CRR revenue insufficiency more broadly, for several reasons.[29] First, according to CAISO, stakeholders argued that, in valuing CRRs, they could better estimate the risk of transmission outages resulting from constraint-specific scaling than they could estimate their potential share of the overall pool of CRR revenue insufficiency under a broader allocation approach. Second, CAISO states that the constraint-specific approach is expected to reduce incentives to target CRRs that receive payments based on congestion prices that were not reflected in the auction due to modeling differences between the auction and the day-ahead market. According to CAISO, these CRRs contribute to both revenue insufficiency and the auction revenue shortfall. Third, CAISO asserts that allocating revenue insufficiency in proportion to overall CRR payments, rather than using a constraint-specific approach, could inequitably affect CRRs purchased in the auction at a higher price relative to their payout compared to CRRs purchased at a lower price. CRRs purchased at a lower price could still have a profit after being allocated the share of revenue insufficiency while CRRs purchased at a higher price relative to their payout would be less able to absorb the revenue insufficiency charge. Fourth, CAISO argues, a constraint-specific approach more equitably allocates revenue inadequacies among allocated CRR holders because it does not burden a CRR holder that has been allocated a CRR involved in one portion of the CAISO system with day-ahead market CRR revenue inadequacies incurred in an area of the system in which they are not involved.

15. CAISO explains that it is proposing monthly netting instead of seasonal netting because seasonal netting would not be feasible with recently approved provisions

[27] *Id.* at 22-23.

[28] *Id.* at 22.

[29] *Id.* at 17-18.

allowing market participants to sell seasonal CRRs in monthly increments. CAISO states that the original CRR holder might not hold a seasonal CRR for its entire term.[30]

16. CAISO argues that its proposal more equitably allocates the CRR revenue insufficiency compared to its current CRR market rules. CAISO explains that, currently, LSEs bear full responsibility for revenue insufficiency because measured demand is the guarantor of fully funding CRRs. CAISO states that under the proposal, LSEs will only be responsible for the revenue insufficiency in proportion to the CRRs they hold. Accordingly, CAISO states that LSEs would bear responsibility for 60 percent of the revenue insufficiency under the proposal.[31] CAISO also argues that its proposal more equitably allocates the revenue insufficiency among LSEs because under the proposal, if a binding constraint generates less congestion revenue than is required to pay CRR holders, only those LSEs who hold CRRs with implied flow on that constraint would bear the CRR revenue inadequacies.[32]

17. CAISO states that its proposal will bring its methodology for allocating revenue insufficiency more closely in line with other regional transmission organizations (RTOs) or independent system operators (ISOs). Specifically, CAISO notes that PJM Interconnection, L.L.C. (PJM), ISO New England Inc. (ISO-NE), Midcontinent Independent System Operator, Inc. (MISO), and Southwest Power Pool, Inc. (SPP) each compare congestion revenues with the amounts due to financial transmission rights (FTR) holders,[33] albeit on an aggregated basis, and allocate any revenue inadequacies or surpluses pro rata to FTR holders, up to the levels of their target FTR values. CAISO notes that the New York Independent System Operator, Inc. (NYISO) allocates congestion revenue inadequacies in its day-ahead market on a constraint-by-constraint basis. CAISO notes that NYISO differs from other RTOs in that it allocates net congestion revenue inadequacies on a monthly basis to transmission owners.[34]

2. <u>Capacity Release Reduction Proposal</u>

18. Under the filing's Capacity Release Reduction Proposal, CAISO proposes to reduce transmission capacity available in the annual CRR auction and allocation processes from 75 percent of transmission system capability to 65 percent. This change

---

[30] *Id.* at 31.

[31] *Id.* at 18.

[32] *Id.* at 19.

[33] FTRs are the equivalent financial product to CRRs in other RTOs/ISOs.

[34] *Id.* at 25.

will reduce the amount of CRRs made available in the annual allocation and auction, but increase the amount of CRRs available through the monthly allocation and auction.

19. CAISO states that the capacity release reduction will decrease the amount of CRRs that are likely to be infeasible in the day-ahead market because there is inherently more risk that the annual CRRs will be revenue insufficient than the monthly CRRs. CAISO explains that system conditions are likely to change more substantially between the time CRRs are released in the annual processes and when they take effect versus when CRRs are released in the monthly processes. CAISO therefore anticipates being better able to predict transmission availability in the monthly processes. CAISO states that this is supported by its analysis, which shows that a 10 percent decrease in available annual capacity reduces transmission infeasibilities that cause revenue insufficiency by 57 percent.[35]

20. CAISO states that the Capacity Release Reduction Proposal complements the Scaling Proposal, but the two proposals are severable from each other.[36] According to CAISO, the Capacity Release Reduction Proposal is intended to increase the likelihood that CRRs are revenue sufficient and that CRR holders will be compensated up to the full notional value of their CRRs. Thus, CAISO argues, the capacity release reduction will make it more likely that CRRs retain their hedging value and that CRR scaling does not discourage participation in the auction.[37] For these reasons, CAISO states that the Scaling Proposal should only be accepted if the Capacity Release Reduction Proposal is accepted.[38]

21. CAISO requests an effective date of September 24, 2018 for the provisions related to the Capacity Release Reduction Proposal, and an effective date of January 1, 2019 for the provisions related to the Scaling Proposal. The September 24 effective date will allow CAISO to decrease the system capacity released in the 2019 annual processes.[39]

---

[35] CAISO analyzed season four 2017 CRR market data. *Id.* at 27.

[36] *Id.* at 1, 6, 16. CAISO further explains that while the Capacity Release Reduction Proposal can be evaluated independently of the Scaling Proposal, the Scaling Proposal should not be accepted without the Capacity Release Reduction Proposal.

[37] *Id.* at 28-29.

[38] CAISO states that, conversely, approving the Capacity Release Reduction Proposal on its own would still be just and reasonable. *Id.* at 16.

[39] *Id*. at 33.

II. Notice and Responsive Pleadings

22. Notice of CAISO's filing was published in the Federal Register, 83 Fed. Reg. 34,999 (2018), with interventions and protests due on or before August 7, 2018. The California Public Utilities Commission filed a notice of intervention. Timely motions to intervene were filed by Modesto Irrigation District, NRG Power Marketing LLC and GenOn Energy Management, LLC, and the California Department of Water Resources State Water Project. Timely motions to intervene and comments or protests were filed by Alliance for Retail Energy Markets (AREM), American Public Power Association (APPA), Calpine Corporation (Calpine), DC Energy, LLC (DC Energy), CAISO's Department of Market Monitoring (DMM), California Municipal Utilities Association (CMUA), Northern California Power Agency (NCPA), Pacific Gas and Electric Company (PG&E), Powerex Corp. (Powerex), the City of Santa Clara, California (Santa Clara), the Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (Six Cities), Southern California Edison Company (SoCal Edison), Western Power Trading Forum (WPTF), and Vitol Inc. (Vitol). On August 21, 2018, PG&E filed an answer to DC Energy and Vitol's protest. On August 22, 2018, Powerex, DMM, and Six Cities filed answers. On August 23, 2018, CAISO filed an answer to the comments and protests. On September 5, 2018, DC Energy and Vitol filed a response to CAISO's answer. On September 7, 2018, WPTF filed a response to CAISO's answer. On September 10, 2018, CAISO filed a reply to DC Energy and Vitol's response.

A. Comments and Protests

23. All commenters either support or do not oppose the Capacity Release Reduction Proposal.[40] Many commenters support or do not oppose the Scaling Proposal as well.[41] Powerex does not oppose CAISO's filing, on an interim basis, so that CAISO can pursue more comprehensive reforms in Track 2 of the CRR auction efficiency initiative.[42] SoCal Edison does not oppose CAISO's filing either, but expresses concern that CAISO has not

[40] AREM Protest at 4; APPA Comments at 4-5; Calpine Protest at 5-7; DC Energy and Vitol Protest at 1-2; DMM Comments at 2; CMUA Comments at 3; NCPA Comments at 4; PG&E Comments at 5; Santa Clara Comments at 5, 8; Six Cities Comments at 2, 4-7; WPTF Protest at 7. While no party opposes the Capacity Release Reduction Proposal, some commenters request that CAISO be required to evaluate and report on whether the change achieves the desired result. *See, e.g.*, AREM Protest at 4.

[41] APPA Comments at 4-5; DMM Comments at 2; CMUA Comments at 3; NCPA Comments at 3-4; PG&E Comments at 3-5; Santa Clara Comments at 5, 8; Six Cities Comments at 2, 4-7.

[42] Powerex Comments at 5-6.

arrived at a holistic solution to address fundamental flaws in the CRR market design.[43] As summarized below, AREM,[44] Calpine, WPTF, and DC Energy and Vitol protest the Scaling Proposal.

24. Calpine and WPTF argue that the Scaling Proposal is unfair because infeasibilities are not the fault of CRR holders, and CAISO has not provided a sufficient cost causation argument. WPTF notes that CAISO's CRR Auction Analysis Report indicates that transmission owners have been the most significant contributor to the revenue inadequacy, yet the Scaling Proposal fails to allocate any of the shortfall to them. Calpine recommends that CAISO consider alternative proposals including allocating some portion of the revenue shortfalls to transmission owners.

25. WPTF argues that the Scaling Proposal will over-collect from CRR holders in two ways. First, WPTF asserts that the proposal to not scale payments due from counterflow CRR holders violates an important symmetry principle. WPTF argues that in all cases thus far in the history of CAISO's CRR policy process, a CRR from A to B creates an equal and opposite payment result to a CRR from B to A.[45] WPTF also argues that CAISO's proposed asymmetrical treatment will disproportionately disadvantage CRR holders with diverse portfolios. WPTF explains that, under CAISO's proposal, in the event of a revenue shortfall, if a CRR holder had a prevailing flow CRR from A to B with a $90 payout and a counterflow CRR from B to A with a $100 charge, that holder would be charged $10 on net even though the CRR holdings had no imputed flows on the system. WPTF notes that the Commission opposed the asymmetric scaling of CRRs in its order approving CAISO's Market Redesign and Technology Upgrade (MRTU).[46] Second, WPTF argues that if excess congestion rents are not allowed to be credited

---

[43] SoCal Edison Comments at 2-3. SoCal Edison explains that it continues to view a market as a fixture that consists of willing buyers and willing sellers transacting, the latter of which is lacking in CAISO's CRR market design. *Id.* DMM shares this view and recommends that CAISO consider markets based on willing buyers and sellers during Track 2. DMM Comments at 2.

[44] AREM filed its own brief protest in this filing, but states that it has reviewed and fully supports the more detailed protest filed by WPTF. AREM Protest at 4.

[45] WPTF Protest at 11-12 (citing *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 853 (2006) (MRTU Order)).

[46] MRTU Order, 116 FERC ¶ 61,274 at P 853 ("In the event the CRR balancing account is short, we believe that prorating all obligation CRRs, regardless of whether market outcomes result in a positive or negative value of the CRR, is important in maintaining the logical and expected properties underlying obligation CRRs.").

against revenue inadequacies in other months, LSEs benefit by virtue of CRR holders funding revenue inadequacies in excess of net revenue inadequacies. WPTF also argues that sending excess congestion rents for hours in which no CRR has been awarded directly to the balancing account will further harm CRR holders. WPTF recommends netting over a year, as in other RTOs, because the longer the time horizon, the less distortion there is in overall cost causation.[47]

26. Calpine and WPTF are concerned that the Scaling Proposal will increase the CRR auction revenue shortfall, and that CAISO's proposed mitigation measures (the Capacity Release Reduction Proposal and monthly balancing) will not be sufficient to alleviate adverse impacts.[48] Calpine contends that CAISO has failed to provide an analysis of market impacts and therefore has not proven that the potential adverse consequences of the proposal (e.g., CRR devaluation) will be outweighed by decreases in revenue insufficiency. Calpine and WPTF state that the Capacity Release Reduction Proposal and CAISO's Track 0 and 1A revisions are likely to substantially reduce the incidence of revenue inadequacies, and that the Scaling Proposal is therefore premature. Both Calpine and WPTF note that in July 2018, the CRR market was revenue adequate by over $17 million, indicating that the Track 0 changes may have had an effect.[49]

27. DC Energy and Vitol state that, while they agree in concept with allocating day-ahead revenue insufficiency to CRR holders on a constraint-by-constraint basis, CAISO's proposal to allocate CRR underfunding to gross prevailing flow CRR positions (i.e., to scale CRR payments only in the prevailing flow direction) is unjust and reasonable.[50] They contend that CAISO's argument that counterflow CRRs are a source of funding for prevailing flow CRRs is equivalent to an argument that the Commission previously rejected, including in a recent PJM proceeding. According to DC Energy and Vitol, in that proceeding, parties argued that allowing negatively valued FTRs to be netted against positively valued FTRs within an FTR holder's portfolio (i.e., portfolio netting) is a subsidy for counterflow and against prevailing flow FTRs, and therefore should not be allowed. DC Energy and Vitol assert that the Commission rejected this view, finding that portfolio netting guarantees that both positive and negative target allocations are treated

---

[47] WPTF Protest at 13-18.

[48] *Id.* at 20-22; Calpine Protest at 8-10.

[49] WPTF Protest at 22-23; Calpine Protest at 10-11.

[50] The issue of CRR underfunding is used synonymously with the issue of CRR revenue sufficiency.

in the same manner.[51] DC Energy and Vitol also argue that this aspect of CAISO's proposal would result in inequitable cost shifting between equivalent CRR portfolios and unfairly penalize counterflow CRRs.[52] They state that counterflow CRRs do not contribute to CRR underfunding, explaining that counterflow CRRs currently pay out the full notional value even when the corresponding prevailing flow settlement does not receive this full payment due to a constraint deration. They also state that the proposal will result in a strong disincentive to provide counterflow because the counterflow provider would receive a lower auction price and be subject to an additional cost shift. They contend that a lower volume of parties willing to take on counterflow obligations will ultimately harm the CRR market.[53]

28. DC Energy and Vitol protest CAISO's proposed allocation of congestion revenue shortfalls and surpluses, arguing that it is overly specific. According to DC Energy and Vitol, allocation in each by hour by contingency and transmission system element pairs means constraints that share the same derated element will be treated separately in the allocation methodology; yet, the constraints could be related to the same congestion management. DC Energy and Vitol explain that a common transmission element could be revenue sufficient, but the congestion revenue to a particular CRR related to that transmission element could be underfunded if one contingency case caused a congestion revenue shortfall and another contingency caused a surplus. They also argue that CAISO's proposed requirement that an underfunded CRR must have implied flow on a constraint during hours that experience a surplus in order to be eligible for the surplus makes it more challenging for congestion revenue to offset shortfalls. In addition, they request that the Commission direct CAISO to provide CRR holders with the data necessary to understand and audit any shortfalls allocated to them on a constraint-by-constraint basis. Finally, DC Energy and Vitol argue that closing out congestion revenue shortfalls on a monthly basis will lead to larger congestion revenue shortfall allocations to CRR holders than would otherwise occur if CAISO waited to close out after a longer period. They state that the proposal is contrary to the practice in PJM and SPP, where the CRR balancing account equivalents are closed at the end of a 12-month planning period.[54]

---

[51] DC Energy and Vitol Protest at 6-7 (citing *PJM Interconnection, L.L.C.*, 156 FERC ¶ 61,180, at P 69 (2016) (2016 PJM FTR Order)); *see also* MRTU Order, 116 FERC ¶ 61,274.

[52] DC Energy and Vitol Protest at 7-8.

[53] *Id.* at 11-13.

[54] *Id.* at 13-18.

B. Answers

29. In its answer, CAISO states that scaling payments to CRR holders is a Commission-approved approach used by the majority of the RTOs/ISOs. CAISO notes that the Scaling Proposal does not require entities to pay costs that they did not cause CAISO to incur, so any concerns about cost causation are inapposite. CAISO contends that because it is difficult to isolate all of the factors that contribute to congestion revenue insufficiency, there is no cost causation principle that supports requiring any particular entities, such as transmission owners, to fully fund CRRs rather than adjusting payments to CRR holders. CAISO also notes that it has already taken steps in Track 1A to obtain improved planned outage information from transmission owners.[55] In response to WPTF's and Calpine's assertions that the Scaling Proposal is premature, CAISO states that there is no requirement under FPA section 205 that the applicant must first demonstrate that the existing rules are not just and reasonable.[56]

30. In response to arguments that the netting period should be longer than a month, CAISO contends that a longer period would not work in the context of its CRR framework. CAISO explains that under the Track 1A revisions, market participants can sell back seasonal CRRs in monthly increments and therefore the original CRR holder might not hold a CRR for longer than one month.[57] In response to DC Energy and Vitol's argument that the Scaling Proposal is overly specific, CAISO explains that a constraint is defined in the CRR process in the same way that the day-ahead market economic optimization defines and prices a constraint.[58]

31. CAISO states that the principle of CRR symmetry does not hold under a constraint-by-constraint approach. Under this approach, CAISO explains, different market participants could be on either end of the prevailing flow and counter flow because multiple source and sink combinations could have flowed over a given constraint. CAISO contends that for these market participants, there is no expectation that the payments should net out. CAISO also notes that the Track 1A tariff revisions limited the ability for one market participant to hold these direct counterflow CRRs.[59]

---

[55] CAISO Answer at 6-10.

[56] *Id.* at 12-13.

[57] *Id.* at 16-17.

[58] *Id.* at 19-20.

[59] *Id.* at 23-24.

32. CAISO argues that the Commission's decision in the 2016 PJM FTR Order should not be applied to the Scaling Proposal. According to CAISO, the Commission's finding amounted to a conclusion that PJM had not established that its existing methodology was unjust and unreasonable, which it must under section 206 of the FPA, and therefore the Commission could not accept any proposed changes. Here, CAISO states, it is proposing changes under section 205 of the FPA and is not required to show that its existing tariff requirements are unjust and unreasonable. CAISO further argues that PJM and CAISO approach allocation of congestion revenues from very different starting points and therefore, the two approaches are not easily compared. CAISO states that it did not propose portfolio-wide consideration because under the constraint-by-constraint approach there is no portfolio to consider.[60]

33. CAISO states that it considered a symmetric approach similar to one advocated by DC Energy and Vitol, but argues that such an approach would lead to inefficient outcomes under the constraint-by-constraint approach proposed by CAISO. CAISO states that symmetric treatment of prevailing flow and counterflow CRRs on specific constraints would lead to further underpayment of prevailing flow CRRs. CAISO explains that 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 counterflow CRRs. CAISO states that reducing the revenue received from counterflow CRRs because of inadequate congestion revenue would exacerbate the revenue inadequacy.[61]

34. In response to DC Energy and Vitol's request for CAISO to publish shortfall information, CAISO states that it already makes the necessary information available for market participants to do their own evaluations.[62] CAISO also contends that there is no justification for the Commission to impose additional reporting requirements on CAISO. CAISO points out it has already committed to submit regular, public reports on the

---

[60] *Id.* at 28-30.

[61] *Id.* at 32-34. CAISO presents an example in an attachment to its filing of symmetric treatment of prevailing and counterflow CRRs. CAISO explains that, for a $1,000 revenue insufficiency across a constraint, CAISO would have to underpay a prevailing flow CRR by $1,500 because it is also receiving $500 less from the counterflow CRR as a result of symmetric scaling. This example also shows a prevailing flow CRR being paid an amount greater than its capacity multiplied by the marginal cost of congestion because it acts as a counterflow CRR across a specific constraint. *See Id.* at Attachment A.

[62] *Id.* at 39.

performance of the Scaling Proposal to its Board of Governors and, CAISO argues, there is no benefit to requiring these reports be filed with the Commission.[63]

35. In its answer to DC Energy and Vitol's protest, PG&E argues that their proposal to symmetrically scale prevailing flow and counterflow CRRs would lead to undesirable outcomes.[64] PG&E demonstrates through an example how DC Energy and Vitol's approach would cause certain prevailing flow CRRs to be overcompensated during underfunding conditions because a portion of the CRR path acts as counterflow across an underfunded constraint.[65] PG&E argues that CAISO's approach is more appropriate. PG&E states that under CAISO's approach payments to CRRs for a congested line would only be adjusted for the CRRs that utilize capacity on the congested line in the congested direction.[66] PG&E states that if the CRR utilizes capacity on the congested line opposite to the congested direction, the CRR does not contribute to revenue insufficiency on the line and so its payment is not adjusted.

36. PG&E also argues that it is not appropriate to impose PJM's methodology for netting CRRs as a guide when allocating shortages in congestion rents to CRRs because CAISO and PJM use fundamentally different approaches to determine the impact of the shortages.[67] PG&E states that CAISO targets the reduction in payments to the CRRs that rely on more transmission capacity than is physically available in the day-ahead market. PG&E argues that PJM's approach is fundamentally different in that the congestion rents are pooled and if the pool of congestion rents is not adequate to fund the target payments, all CRR payments may be reduced.[68]

37. PG&E states that developing a new netting approach would require the design phase of the stakeholder process to be reopened. PG&E states that, in that case, CAISO would not be able to implement any new approach for the 2019 CRR process.[69]

---

[63] *Id.* at 41-42.

[64] PG&E Answer at 6-7.

[65] *Id.* at 7-8.

[66] *Id.* at 8-9.

[67] *Id.* at 9.

[68] *Id.* at 12.

[69] *Id.* at 12.

38. Despite the protests, Powerex continues to argue that CAISO's proposal represents an important step forward to ensuring a more equitable allocation of CRR revenue insufficiency by ensuring that the costs of the revenue insufficiency are allocated to CRR holders.[70] Powerex also notes that each of the alternative proposals offered by protestors has the potential to have significant financial impacts on various market participants.[71] For example, Powerex states that insulating CRR holders from the consequences of CRR revenue inadequacy, or reducing those consequences by netting over longer time periods, would clearly benefit CRR holders, but these gains would necessarily be at the expense of load customers. Similarly, Powerex states that reducing charges to holders of counter-flow CRRs would benefit the entities that hold them, but at the expense of increasing revenue insufficiency and thereby also requiring greater reductions in payments to holders of prevailing-flow CRRs. Although Powerex believes that issues remain to be resolved, it states that this fact simply underscores the need for CAISO to work towards further improvements and a more durable framework for allocating CRR underfunding through Track 2 of CAISO's CRR auction efficiency stakeholder process.[72]

39. DMM seeks to clarify Calpine's protest, which stated: "CAISO's latest data suggests that Track 0 implementation may have had an effect. For the month of July, the CRR market was revenue adequate by over 17 million dollars. Adding the 7 million dollars in auction revenues to this total yields a net benefit to ratepayers of 24 million dollars."[73] DMM states that the $24 million figure that Calpine cites is the July 2018 value for the CRR balancing account, which represents the net of: (1) revenues from the CRRs auctioned by CAISO; (2) payouts to all CRR holders; plus (3) all congestion rents collected from the day ahead market.[74] DMM explains that any surpluses from this account are refunded to the LSEs of transmission ratepayers—who pay for transmission through the Transmission Access Charge and also for congestion charges included in the day-ahead market prices charged to load. DMM states that the CRR balancing account is a settlement account which is distinct from the actual auction revenue shortfalls. DMM

[70] Powerex Answer at 3.

[71] *Id.* at 2.

[72] *Id.* at 3.

[73] DMM Answer at 1 (quoting Calpine Protest at 11).

[74] *Id.* at 2.

notes that CAISO described the CRR revenue shortfall as "the difference between CRR auction revenues and day-ahead market payouts to holders of auctioned CRRs."[75]

40. DMM reiterates that significant and persistent auction revenue shortfalls have been the motivating factor behind CAISO's efforts to reform the CRR auction. DMM estimates that for the month of July 2018, transmission ratepayers received about $7.3 million in auction revenues but paid out about $26.9 million to auctioned CRRs.[76] In other words, auction revenue shortfalls in July were actually about $19.6 million. Conversely, Calpine highlighted in its comments that CRRs were revenue adequate in July 2018, i.e., total congestion rents collected from the day-ahead market exceeded payouts to all CRR holders by over $17 million. DMM claims that this makes July 2018 a good example of a month in which CAISO had a large CRR revenue adequacy surplus ($17 million), while transmission ratepayers still lost over $19 million from auctioned CRRs.[77] Had CAISO not auctioned CRRs for July 2018, DMM states that the CRR balancing account surplus refunded to transmission ratepayers would have been about $19 million larger.

41. Lastly, Six Cities responds to protestors' arguments that CAISO's Scaling Proposal is unreasonable and inconsistent with the cost causation principle.[78] With regard to the cost causation principle, Six Cities argues that, because many factors contribute to differences between the network model used in the CRR allocation and auction processes and the models used for day-ahead scheduling, there is no way to accurately attribute causal responsibility to any particular group of market participants. Moreover, Six Cities states that because CAISO's proposed distribution method is reasonably related to the source of the revenue shortfalls and the beneficiaries of the CRRs affected by constraints that give rise to the shortfalls, it reasonably accommodates the cost causation principle to the extent possible.[79] According to Six Cities, the clear beneficiaries of CRRs are CRR holders in general, but Six Cities asserts that the non-LSE CRR holders have benefited the most because they have been guaranteed full funding for their CRRs while being insulated from any share of responsibility for the uplift costs

---

[75] *Id.* (quoting CAISO Transmittal at 3).

[76] *Id.*

[77] *Id.* at 3.

[78] Six Cities Answer at 1-2.

[79] *Id.* at 4.

necessary to make full funding possible.[80] Thus, Six Cities argues that CAISO's filing is plainly more equitable and more consistent with the cost causation principle than the status quo.

42. Six Cities then argues that Commission precedent does not require symmetrical treatment of prevailing flow and counterflow CRRs in the context of a constraint-by-constraint adjustment of CRR payments. Six Cities distinguishes the 2016 PJM FTR Order,[81] and argues that the PJM proceeding had at least two important features that make it inapplicable to the current Track 1B proposal. First, Six Cities states that, because PJM submitted its proposal to discontinue netting of positively valued and negatively valued FTRs in assessing overall portfolio status under FPA section 206,[82] PJM had the burden in that proceeding to demonstrate that the netting methodology then in effect was unjust and unreasonable in order to support a change.[83] Six Cities asserts that unlike the PJM proceeding, CAISO's proposal here was filed pursuant to FPA section 205 and only requires a finding that the proposal is just and reasonable. Second, Six Cities notes that the FTR netting in PJM is done on an aggregated portfolio-wide basis, not the more granular constraint-by-constraint approach proposed by CAISO.[84]

43. In its response to CAISO's answer, DC Energy and Vitol argue that CAISO's examples do not respond to their arguments because they did not advocate for the symmetrical scaling approach CAISO demonstrated in its answer.[85] DC Energy and Vitol state that they advocate for an approach where a market participant is able to net its counterflow positions on a constraint against prevailing flow positions on the same constraint.[86]

---

[80] *Id.* at 6.

[81] Six Cities also distinguishes the MRTU Order on similar grounds, i.e., the issue arose in the context of an aggregate, portfolio approach to addressing shortfalls in funds available to pay CRRs then under consideration. *Id.* at 9-10.

[82] 16 U.S.C. § 824e (2012).

[83] Six Cities Answer at 8.

[84] *Id.* at 8-9.

[85] DC Energy and Vitol Response at 2.

[86] *Id.* at 3.

44. DC Energy and Vitol also argue that Commission precedent in the 2016 PJM FTR Order and subsequent orders is applicable here. DC Energy and Vitol state that whether Commission precedent comes from a section 206 proceeding or a section 205 proceeding, the general principles, findings, and analysis still provide relevant guidance for the Commission in later cases.[87] DC Energy and Vitol argue that the Commission recognized the need to preserve the logical properties of CRRs in those orders.[88]

45. In WPTF's response to CAISO's answer, it argues that CAISO ignores the issue of cost causation it raised in its protest.[89]WPTF states that when costs are caused by CAISO's implementation of good utility practice, is not consistent with cost causation to allocate the shortfalls to CRR hedge holders.[90]

46. In CAISO's reply to DC Energy and Vitol's response, CAISO states that it understands DC Energy and Vitol's proposal and states that it was discussed in the stakeholder process.[91] CAISO argues that the "key fact" of DC Energy and Vitol's proposal is that, in order to effectuate the proposal, CAISO would be required to scale the counterflow CRR entitlement so that counterflow entitlement would be charged less than it would have been based on its original CRR entitlement.[92] CAISO reiterates that to cover the cost of this adjustment it would have to further scale payments to prevailing flow CRRs.[93]

III. Discussion

A. Procedural Matters

47. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2018), the notice of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

---

[87] *Id.* at 11.

[88] *Id.* at 12.

[89] WPTF Response at 5.

[90] *Id.* at 6.

[91] CAISO Reply at 2.

[92] *Id.* at 3.

[93] *Id.* at 5.

48. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2018), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We accept the answers filed by CAISO, PG&E, Powerex, DMM, and Six Cities because they have provided information that assisted us in our decision-making process.

B. Substantive Matters

49. We accept CAISO's Capacity Release Reduction Proposal as just and reasonable and not unduly discriminatory or preferential. However, as discussed below, we find that CAISO has not demonstrated that its Scaling Proposal is just and reasonable and, therefore, reject it.[94]

50. We find that CAISO's proposal to reduce system capacity available in the annual auction and allocation processes from 75 percent of transmission system capability to 65 percent (i.e., the Capacity Release Reduction Proposal) is just and reasonable. CAISO's proposal shifts the release of CRR capacity from the annual auction to the monthly auction, where CAISO has more information concerning the topology of the transmission system. CAISO's analysis shows that a 10 percent decrease in available annual capacity would decrease the amount of CRRs that are likely to be infeasible in the day-ahead market and reduce CRR revenue insufficiencies. We also note this proposal is unopposed. We therefore accept the Capacity Release Reduction Proposal to be effective September 24, 2018, as requested.

51. We reject CAISO's Scaling Proposal. As protestors note, the Commission has long held that counterflow and prevailing flow CRRs should be netted against one another such that the expected net value of two obligation CRRs of equal MWs from A to B and B to A will be equal to zero.[95] CAISO argues that Commission precedent does not require the use of symmetric scaling, and that, in the 2016 PJM FTR Order, the Commission merely found that PJM had not demonstrated that its current tariff was unjust and unreasonable. While it is true that the Commission concluded that PJM had

---

[94] The United States Court of Appeals for the District of Columbia Circuit has held that, in certain circumstances, the Commission has "authority to propose modifications to a utility's [FPA section 205] proposal *if the utility consents to the modifications*." *NRG Power Mktg., LLC v. FERC*, 862 F.3d 108, 114-15 (D.C. Cir. 2017).

[95] *See, e.g.*, MRTU Order, 116 FERC ¶ 61,274 at P 853 ("the expected net value of two obligation CRRs of equal MWs from A to B and B to A will be equal to zero."); 2016 PJM FTR Order, 156 FERC ¶ 61,180 at PP 68-69 (declining to find that PJM's existing treatment of prevailing flow and counterflow FTRs, which were netted on a portfolio basis, was unjust and unreasonable).

not made such a demonstration, the case also turned on the notion that prevailing and counterflow FTRs should have symmetric properties. Specifically, in the 2016 PJM FTR Order the Commission stated that in a well-functioning FTR market, an FTR from A to B should be the mathematical inverse of an FTR from B to A.[96] Similarly, in the MRTU Order, the Commission found that prorating all obligation CRRs, regardless of whether market outcomes result in a positive or negative value of the CRR, is a desirable attribute for CRR and FTR markets because it is important in maintaining the logical and expected properties of CRRs and FTRs.[97] CAISO's proposal, on the other hand, treats prevailing and counterflow CRRs differently such that the holder of a prevailing flow CRR from A to B cannot offset that obligation by holding a CRR from B to A. Consistent with the Commission's findings in the MRTU and 2016 PJM FTR Orders, we continue to believe that a symmetric approach is just and reasonable, while an asymmetric approach has not been shown to be just and reasonable.

52. CAISO and PG&E argue in their answers that imposing a symmetric scaling approach on a constraint-by-constraint basis would produce inefficient and undesirable outcomes. However, CAISO has not demonstrated that the differences between a portfolio approach and a constraint-by-constraint approach justify a departure from symmetric scaling. For example, CAISO argues that performing symmetrical scaling on a constraint-by-constraint basis worsens the revenue insufficiency, causes prevailing flow CRRs to be discounted at a greater rate than they would be under asymmetrical scaling, and could cause certain prevailing flow CRRs to receive more than their notional value under certain circumstances. While symmetrical scaling would further reduce the amount of funds available to compensate prevailing flow constraints, this is not significantly different than the effect of allowing portfolio netting in PJM and other ISOs and RTOs. In those circumstances too, the scaling of payments toward accounts with a positive balance are higher than they would be if netting was not allowed.

53. Moreover, CAISO's assertions that symmetric scaling may pose certain drawbacks does not demonstrate that CAISO's proposal is itself just and reasonable. CAISO's proposal has several undesirable effects and has not been shown to be just and reasonable. Specifically, CAISO's proposal makes the product less transparent. Market participants could face difficulties valuing a counterflow hedge relative to a prevailing flow hedge, since one would be discounted while the other would not. This lack of transparency could discourage market participants from bidding for counterflow CRRs, which could reduce liquidity and could, in turn, exacerbate the CAISO CRR market's current market efficiency problems, such as the auction revenue shortfall issue described above. Accordingly, for the reasons discussed herein, we conclude that CAISO has not demonstrated that its scaling proposal is just and reasonable. We therefore reject

---

[96] *Id.* P 69 n.62.

[97] MRTU Order, 116 FERC ¶ 61,274 at P 853.

CAISO's Scaling Proposal without prejudice to CAISO refiling a proposal that allows CRR holders to consistently net prevailing and counterflow CRRs against each other as in other ISO and RTO markets.

54. Lastly, we deny requests to impose reporting requirements on CAISO. We find that such requirements are unnecessary, particularly because CAISO has committed to regular reporting of the performance of the CRR auctions. These reports will be available to the public.[98] Accordingly, we find that requiring CAISO to make an informational filing with the Commission does not meaningfully improve transparency to the Commission or CAISO's stakeholders such that it is necessary.[99] We therefore deny requests for a reporting requirement.

The Commission orders:

(A) CAISO's Capacity Release Reduction Proposal is hereby accepted, effective September 24, 2018, as discussed in the body of this order.

(B) CAISO's Scaling Proposal is hereby rejected, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

---

[98] CAISO Answer at 42.

[99] *See Cal. Indep. Sys. Operator Corp.*, 156 FERC ¶ 61,226, at P 37 (2016) (denying a request to require reports where CAISO was already sharing market performance information with market participants).