175 FERC ¶ 61,076
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Richard Glick, Chairman;
Neil Chatterjee, James P. Danly,
Allison Clements, and Mark C. Christie.

California Independent System Operator Corporation Docket No. ER21-1192-000

ORDER ACCEPTING PROPOSED TARIFF REVISIONS

(Issued April 27, 2021)

1. On February 22, 2021, pursuant to section 205 of the Federal Power Act (FPA),[1] California Independent System Operator Corporation (CAISO) submitted proposed revisions to its Open Access Transmission Tariff (Tariff) to implement market enhancements to revise the Tariff provisions on: (1) import and virtual bidding; and (2) scheduling and pricing parameters. The first enhancement provides rules allowing for import bids, export bids, demand bids, and virtual bids above $1,000/MWh. The second enhancement is designed to use current market scheduling and pricing parameters based on a $1,000/MWh soft energy bid cap unless market conditions can support costs and bids above $1,000/MWh. In this order, we accept CAISO's proposed revisions, effective no later than June 15, 2021, as requested, subject to CAISO notifying the Commission of the actual effective date of the Tariff revisions within five business days of their implementation.

I. Background

2. Order No. 831 required each ISO and RTO to make revisions to its Tariff to: (1) cap each resource's incremental energy offer at the higher of $1,000/MWh or that resource's verified cost-based incremental energy offer; (2) cap verified cost-based incremental energy offers at $2,000/MWh when calculating locational marginal prices (LMP); (3) establish a verification process for cost-based incremental offers above $1,000/MWh that ensures that a resource's cost-based incremental energy offer reasonably reflects that resource's actual or expected costs;[2] (4) permit market

[1] 16 U.S.C. § 824e.

[2] *Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 831, 157 FERC ¶ 61,115, at P 1 (2016), *order on reh'g and clarification*, Order No. 831-A, 161 FERC ¶ 61,156 (2017).

participants to submit virtual transactions up to $2,000/MWh;[3] and (5) permit import and export transactions up to $2,000/MWh.[4] With regard to the verification requirement in Order No. 831, the Commission directed that if a resource submits an incremental energy offer above $1,000/MWh, and the costs underlying that offer cannot be verified before the market clearing process begins, that offer may not be used to calculate LMPs. The Commission stated, however, that a resource will be eligible for a make-whole payment if that resource is dispatched and the resource's costs are verified after-the-fact. The Commission further stated that a resource will also be eligible for a make-whole payment if it is dispatched and its verified cost-based incremental energy offer exceeds $2,000/MWh.[5]

3. In Order No. 831, the Commission stated that an RTO/ISO may file, pursuant to FPA section 205, additional modifications to shortage prices or other market elements that require revision in light of the offer cap reforms, but the Commission did not require such modifications to comply with Order No. 831.[6] The Commission also declined to require that virtual transactions and imports and exports above $1,000/MWh be subject to cost verification prior to the market clearing process.[7] However, the Commission stated that ISOs and RTOs could propose, in a separate FPA section 205 filing, measures to address any concerns that arise from permitting virtual transactions up to $2,000/MWh, or measures to address issues regarding the absence of a verification requirement for imports and exports.[8]

4. The Commission accepted CAISO's Tariff revisions to comply with Order No. 831 and related Tariff revisions to implement cost and default energy bid enhancements on September 21, 2020.[9] In compliance with the Commission's directives regarding the offer cap structure requirement of Order No. 831, CAISO implemented a two-tier cap structure: (1) a soft energy bid cap of $1,000/MWh, which applies to all energy bids

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[3] Order No. 831, 157 FERC ¶ 61,115 at P 172.

[4] *Id.* P 192.

[5] *Id.* PP 42, 145-46.

[6] *Id.* P 213.

[7] *Id.* PP 172, 192.

[8] *Id.* PP 176, 197.

[9] *Cal. Indep. Sys. Operator Corp.*, 172 FERC ¶ 61,263, at P 1 (Order No. 831 Compliance Order), *notice of denial of reh'g by operation of law*, 173 FERC ¶ 62,096 (2020).

except for virtual bids and bids for non-resource-specific system resources (i.e., import bids that come from a resource not identified by a specific resource located outside of the CAISO balancing authority area); and (2) a hard energy bid cap of $2,000/MWh, which applies to all energy bids.[10] In compliance with Order No. 831, CAISO or its Department of Market Monitoring (DMM) must verify the actual or expected costs underlying a resource's cost-based incremental energy offer above $1,000/MWh before that offer can be used for purposes of calculating LMPs. However, virtual bids and import energy bids for non-resource-specific system resources are subject to the $2,000/MWh hard energy bid cap but not to cost verification requirements.[11]

II. CAISO Filing

5. CAISO states that its revisions in the instant filing are meant to "tailor the implementation of the higher bid caps under Order No. 831 to the characteristics of the energy market in the Western Interconnection."[12] CAISO proposes revisions to the import bidding process that will allow it to reduce non-resource specific import bids from resource adequacy resources to a Maximum Import Bid Price discussed below. This adjustment is being made to address concerns that import bids that are not registered and tied to a specific resource could exercise system-level market power by bidding at prices above $1,000/MWh but under the $2,000/MWh hard energy bid cap.[13] CAISO is also proposing revisions to scheduling and pricing parameters to enable the market to use shortage pricing and transmission constraint relaxation penalties scaled to the $2,000/MWh bid cap under certain circumstances, as discussed below. As part of these revisions, CAISO proposes to set the pricing parameter for the system energy balance constraint at $2,000/MWh when there is insufficient supply to meet demand. However, CAISO's proposed revisions limit the circumstances under which this provision would apply, in response to concerns that the $2,000/MWh price would be applied in small supply shortfalls that do not indicate actual shortages.[14]

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[10] Pursuant to Order No. 831 requirements, resources with verified costs above $2,000/MWh that are dispatched are eligible for cost recovery.

[11] CAISO, CAISO eTariff, § 30.7.12, Validation of Bids in Excess of Soft Energy Bid Cap, Hard Energy Bid Cap, or Minimum Load Cost Hard Cap (0.0.0), § 30.7.12.5.

[12] CAISO Transmittal at 2.

[13] *Id.* at 11.

[14] *Id.*

A. Import, Export, Demand, and Virtual Bids Greater Than $1,000/MWh

6. CAISO proposes bid validation rules and related Tariff provisions that apply to the following categories of bids priced above the $1,000/MWh soft energy bid cap: (1) bids from non-resource-specific system resources that are resource adequacy resources; and (2) export bids, demand bids, virtual bids, and bids for non-resource-specific system resources that are not resource adequacy resources.[15]

7. CAISO proposes to use a Maximum Import Bid Price as a benchmark for validating non-resource-specific import bids that exceed the soft energy bid cap. CAISO proposes to calculate the Maximum Import Bid Price by taking the greater of the Mid-Columbia or Palo Verde index prices, multiplying the index by an hourly shaping ratio,[16] and multiplying that number by 110%.[17] Regarding non-resource-specific system resources that are resource adequacy resources, CAISO states that it will reduce the bid prices for these resources that exceed the Maximum Import Bid Price to the greater of: (1) the Maximum Import Bid Price; (2) the soft energy bid cap; or (3) the highest priced cost verified resource-specific energy bid that CAISO has accepted for the applicable trading hour.[18]

8. In support of its proposed calculation of the Maximum Import Bid Price, CAISO contends that it is just and reasonable to use the price indices for the Mid-Columbia and Palo Verde locations because they are the primary liquid trading hubs for bilateral transactions in the Western Interconnection and provide representative electric prices for the bilateral market outside CAISO's balancing authority area. CAISO states that using the higher of the two hub prices appropriately incentivizes and compensates imports.[19]

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[15] Demand and exports are included with virtual bids and non-resource adequacy resources as bids that are both not subject to reduction to the Maximum Import Bid Price and not eligible for after the fact recovery.

[16] CAISO proposes to calculate the hourly shaping ratio by dividing the day-ahead market system marginal energy cost for the CAISO balancing authority area by the average day-ahead market system marginal energy cost in all on-peak hours of the same previous representative trading day. CAISO states that applying this ratio will scale the hourly Maximum Import Bid Price up/down relative to the daily hub price in hours where the system marginal energy cost is greater/less than the daily average. *Id.* at 23.

[17] *Id.* at 21.

[18] *Id.* at 20.

[19] *Id.* at 21.

9. CAISO asserts that the 110% multiplier is just and reasonable because it accounts for the difference between published electric price indices and individual transactions. CAISO states that the electric price indices are based on the weighted average price of all electric transactions and notes that although prices generally converge, bilateral energy transaction prices may be lower than the hourly CAISO market prices.[20]

10. Moreover, CAISO proposes to allow bids for non-resource-specific resources that are not resource adequacy resources, virtual bids, export bids, and demand bids, up to the $2,000/MWh hard bid cap when the Maximum Import Bid Price is greater than the $1,000/MWh soft energy bid cap or there is a cost-verified resource-specific bid greater than $1,000/MWh.[21] CAISO explains that it does not propose to reduce the bids for import bids for non-resource adequacy resources to the Maximum Import Price, the soft energy bid cap, or the highest verified bid, because doing so could potentially discourage imports that can supplement resource adequacy imports during very tight supply conditions. CAISO also states that disallowing virtual bids up to $2,000/MWh while allowing import and export bids up to $2,000/MWh would cause market inefficiencies because virtual bids would not be able to compete with imports and exports.[22]

11. CAISO further proposes to revise the Tariff to clarify that virtual bids, export bids, demand bids, and energy bids for non-resource-specific system resources are ineligible for after-market cost recovery. CAISO states that there are no costs associated with virtual bids. CAISO also states that there is no practical methodology that it could use to determine non-resource specific import costs objectively.[23]

B. Scheduling and Pricing Parameters

12. To reflect the implementation of the $2,000/MWh hard energy bid cap, CAISO proposes Tariff revisions defining the market conditions under which various scheduling and pricing parameters, as well as shortage pricing for various ancillary services, apply. These revisions will apply to the CAISO balancing authority area and, where applicable, to the Energy Imbalance Market (EIM).

13. CAISO states that it is not proposing changes to the pricing parameters that apply when the energy bid cap is $1,000/MWh. CAISO states that when there is no cost-verified bid above $1,000/MWh and when the Maximum Import Bid Price is below

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[20] *Id.* at 23.

[21] *Id.* at 24-25.

[22] *Id.* at 25.

[23] *Id.*

$1,000/MWh, the energy bid cap will remain at $1,000/MWh and the penalty parameters will be based on the $1,000/MWh soft energy bid cap.[24]

14. CAISO proposes to use scheduling and pricing parameters based on the $2,000/MWh hard energy bid cap when CAISO has accepted and validated a bid above $1,000/MWh or the Maximum Energy Bid Price is greater than $1,000/MWh.[25] CAISO clarifies that if either event occurs during the day-ahead market, the scheduling and pricing parameters based on the $2,000/MWh hard energy bid cap will apply for all trading hours of the day-ahead and real-time market. CAISO states that if these conditions only occur in the real-time market, the scheduling and pricing parameters will apply in the trading hour of the real-time market for which either CAISO has accepted and validated a bid above $1,000/MWh or the Maximum Energy Bid Price is greater than $1,000/MWh in at least one interval of the applicable market run.[26]

15. CAISO further states that when the scheduling and pricing parameters related to the hard energy bid cap are in place, those scheduling and pricing parameters will include a pricing parameter that applies when there is insufficient energy supply to meet CAISO's demand forecast in the real-time market. This is known as the pricing parameter for the system energy balance constraint. In the day-ahead market, if there is insufficient supply to meet self-scheduled demand, a $2,000/MWh pricing parameter will apply.

16. In the real-time market, CAISO explains that it will measure the energy shortfall (difference between the balancing authority area load/exports and its generation/imports) against a constraint relaxation threshold. If the shortfall is greater than the constraint relaxation threshold, the pricing parameter for the system energy balance constraint will be set to the $2,000/MWh hard energy bid cap. According to CAISO, if the shortfall is less than the constraint relaxation threshold, then the pricing parameter for the system energy balance constraint will be based on the maximum of the soft energy bid cap and the highest-priced cleared energy bid.[27]

17. CAISO states that it will calculate a constraint relaxation threshold for its own balancing authority area and each EIM balancing authority area.[28] CAISO will calculate

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

[25] *Id.* at 14-15.

[26] *Id.* at 15.

[27] *Id.* at 16.

[28] Proposed CAISO Tariff section 6.5.2.3.7.

the energy shortfall for each EIM balancing authority area and EIM as a whole and set the energy balance constraint pricing parameter for each EIM balancing authority area based on the shortfall in each area relative to the balancing authority area's constraint relaxation threshold.

18. CAISO proposes to configure the constraint relaxation threshold in CAISO and each EIM balancing authority area based on the NERC reliability standard for maintaining system frequency in each balancing authority area: Reliability Standard BAL-001-2 Requirement R2 (hereafter referred to as BAL-001-2).[29] This Reliability Standard requires that a balancing authority's Area Control Error not exceed its Balancing Authority Area Control Error Limit (BAAL) for more than 30 consecutive clock minutes..[30] BAAL is calculated as a MW quantity. CAISO states that this amount represents a reasonable proxy for determining when a supply shortfall becomes significant enough to set the pricing parameter at the $2,000/MWh hard energy bid cap. CAISO states that it will calculate this constraint relaxation threshold annually under BAL-001-2. CAISO will not apply the constraint relaxation threshold in the day-ahead market. CAISO states that BAL-001-2 is a real-time operating standard and therefore it does not make sense to apply the threshold value to the integrated forward market.[31]

19. CAISO states that the constraint relaxation threshold reflects the reality that a small amount of system energy balance constraint relaxation represents merely apparent shortfalls due to forecasting and modeling inaccuracies, rather than actual shortfalls. Moreover, CAISO states that in EIM balancing authority areas outside of CAISO, apparent shortfalls may not represent actual shortfalls because of other resources those areas have that are not in the market. CAISO states that, in these instances, it would be inappropriate to set the pricing parameter at the hard energy bid cap, because there is no scarcity condition justifying the price.[32] As an explanation for why CAISO will not apply the constraint relaxation threshold in the day-ahead market and instead apply the $2000/MWh pricing parameter to any shortfall, CAISO states that BAL-001-2 is a real-time operating standard and therefore it does not make sense to apply the constraint relaxation threshold to the day-ahead market.

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[29] CAISO Transmittal at 17.

[30] *See* Reliability Standard BAL-001-2, https://www.nerc.com/pa/Stand/Reliability%20Standards/BAL-001-2.pdf.

[31] CAISO Transmittal at 17.

[32] *Id.*

20. CAISO's proposal does not employ the full formula from BAL-001-2. The proposal excludes a term that modifies the BAAL for each frequency level. CAISO explains that it omitted the term because it is not practical to use threshold limits that change based on frequency for pricing purposes. CAISO instead states that it assumes that the Western Interconnection is balanced and that the scheduled frequency is 60 Hz.[33]

C. Effective Date

21. CAISO requests that the Commission accept the proposed Tariff revisions effective no later than June 15, 2021. CAISO also requests authority to provide at least 14 days' notice of the actual effective date to the Commission and market participants. CAISO explains that because this implementation will directly impact scheduling coordinator practices and the market optimization, once CAISO has received the software code, it must conduct testing and a market simulation stage before moving the Tariff revisions into the final implementation stage. CAISO explains that, after it completes this final phase, it will promote its software enhancement into its production system on or before June 15, 2021.

III. Notice and Responsive Comments

22. Notice of CAISO's filing was published in the *Federal Register*, 86 Fed. Reg. 11,763 (Feb. 26, 2021) with interventions and protests due on or before March 15, 2021. California Public Utilities Commission filed a notice of intervention. Timely motions to intervene were filed by Southern California Edison Company, NRG Power Marketing LLC, Brookfield Renewable Trading and Marketing LP (Brookfield), Balancing Authority of Northern California, California Municipal Utilities Association, Calpine Corporation, Modesto Irrigation District, Powerex Corp., Department of Market Monitoring of the California Independent System Operator Corporation (DMM), the Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California, Northern California Power Agency, Western Power Trading Forum (WPTF), and EIM Entity Parties.[34] Brookfield, DMM, and EIM Entities filed comments, and WPTF filed a protest. CAISO filed an answer on March 30, 2021.

A. Comments

23. DMM supports CAISO's filing, stating that the proposed revisions balance reasonable protection against uncompetitive conditions and market power while allowing

[33] CAISO Transmittal, Attachment D, Revised Final Proposal, at 16-17.

[34] EIM Entity Parties include Nevada Power Company, Sierra Pacific Power Company, Arizona Public Service Company, Idaho Power Company, Portland General Electric, PacifiCorp, and Puget Sound Energy.

resources to bid above the soft offer cap during extreme market conditions where short run marginal costs are likely to be high.[35]

24. Brookfield generally supports CAISO's import bidding proposal and the constraint relaxation threshold element of the scheduling and pricing parameters proposal. However, Brookfield recommends that, once the constraint relaxation threshold is reached, the system energy balance constraint relaxation pricing parameter be set at $2,000/MWh for all market intervals in order to encourage additional supply.[36] Brookfield encourages CAISO to develop a full suite of scarcity pricing measures that can assist it in managing stressed system conditions. Brookfield recommends that the Commission condition approval of CAISO's proposal on undertaking a stakeholder process on this issue within the year.[37]

25. EIM Entity Parties support CAISO's proposal to use market scheduling and pricing parameters based on a $1,000/MWh soft energy bid cap, unless market conditions can support costs and bids above $1,000/MWh related to CAISO's implementation of Order No. 831. EIM Entity Parties argue that nothing in Order No. 831 states that the $2,000/MWh level was intended to be utilized as a pricing parameter (or an indication of scarcity) for all 8,760 hours per year.[38] EIM Entity Parties believe that a $2,000/MWh power balance constraint pricing parameter for all hours under all conditions would be unjust and unreasonable. Further, EIM Entity Parties argue CAISO's proposal appropriately recognizes that small infeasibilities should not automatically trigger a $2,000/MWh power balance constraint parameter pricing parameter. EIM Entity Parties also support the proposal to calculate the threshold value each year for each balancing authority area participating in the CAISO market using a formula based on the BAL-001-2.[39] EIM Entity Parties further state that limited infeasibilities related to the supply balance will produce unjust and unreasonable prices for that interval if the power balance constraint parameter penalty is set at a price that is not appropriate, but for a cost-based justification reflective of extreme conditions.[40]

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[35] DMM Comments at 2-3.

[36] Brookfield Comments at 6.

[37] *Id.* at 6-7.

[38] EIM Entity Parties Comment at 7 (citing Order No. 831, 157 FERC ¶ 61,115 at P 90).

[39] *Id.* at 9.

[40] *Id.* at 10.

26. WPTF opposes CAISO's filing and argues that because the Commission has already found CAISO's Order No. 831 compliance filing to be just and reasonable, CAISO has the burden to prove that its proposed provisions in the instant filing do not undo or degrade the Commission's prior finding.[41] WPTF contends that CAISO has not met that burden, arguing that CAISO's proposal is not adequately supported and, in practice, amounts to a collateral attack on Order No. 831. WPTF claims that CAISO's filing implements conditions that would limit the application of Order No. 831 by using the $2,000/MWh offer cap as the pricing parameter for supply deficiencies only under very infrequent and limited circumstances.[42]

27. WPTF avers that the constraint relaxation threshold introduces unjust and unreasonable pricing outcomes using inconsistent rationale between the day-ahead and real-time markets. WPTF argues that, while CAISO proposes to not apply the threshold in the day-ahead market because "the relaxation penalty prices for ancillary services in that market are less than the system energy-balance constraint penalty price,"[43] the same holds true in CAISO's real-time market that procures incremental ancillary services. WPTF, therefore, concludes that even in the real-time market if the market is procuring incremental ancillary services, the market will first forego reserves and trigger scarcity pricing before reaching the threshold. WPTF argues that CAISO cannot selectively use this justification to not apply the threshold in one market and ignore that justification for another market where the same conditions exist. WPTF further argues that, as a result of this inconsistency, CAISO's proposal will introduce different price signals between the two markets under identical energy shortage market conditions. WPTF maintains that this will incentivize resources, load, and hedging markets to change their behavior as the risk profile between the two markets during scarcity would be fundamentally different.[44]

28. WPTF further objects to CAISO's proposed application of the constraint relaxation threshold. WPTF argues that CAISO does not use the full formula set forth in BAL-001-2 to derive its constraint relaxation threshold. WPTF argues that CAISO omits a scaling term from its formula that modifies the allowable lower and upper balancing authority area control error (ACE) limits based on how actual frequency compares to scheduled frequency. According to WPTF, if actual frequency were to fall below

[41] WPTF Protest at 4.

[42] *Id.* at 4-5.

[43] *Id.* at 8 (citing Transmittal at 17).

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

scheduled frequency, the omitted term could reduce the allowable balancing authority ACE limit below the thresholds proposed by CAISO.[45]

29. WPTF also contends that CAISO's proposal introduces unreasonable price formation during tight supply conditions in the real-time market. WPTF argues that relaxing the ancillary service minimum requirements when incremental capacity is needed will occur before the market optimization relaxes the power balance constraint. Therefore, if the market is short ancillary services but not energy, WPTF contends that the market clearing energy price could be greater than $2,000/MWh under CAISO's proposal. Conversely, WPTF claims that when the market is short energy and the power balance constraint is relaxed, the market clearing price will be based on the last cleared economic offer, which cannot be greater than $2,000/MWh.[46]

30. WPTF argues that if modeling and forecasting inaccuracies are the cause of supply and demand imbalances, then CAISO should take actions to mitigate those inaccuracies, rather than suppressing prices below Order No. 831-approved levels.[47] WPTF argues that the Commission should reject CAISO's proposal and allow CAISO's Order No. 831 compliance revisions to take effect unaltered.[48]

B. CAISO Answer

31. CAISO states that WPTF's allegation that its Tariff revisions constitute a collateral attack on the directives of Order No. 831 are "entirely spurious."[49] CAISO notes that the Commission has found that it has fully complied with the offer cap modifications required in Order No. 831 and that the market parameter revisions that CAISO proposes do not alter those offer cap revisions.

32. CAISO asserts that Order No. 831 focused solely on revisions to RTO/ISO incremental energy offer caps, and Order No. 831 contained no directives that required CAISO to revise any Tariff provisions relating to penalty or scarcity pricing.[50] CAISO notes that in response to comments regarding shortage pricing or other market elements

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[45] *Id.* at 6-8.

[46] *Id.* at 10.

[47] *Id.* at 11.

[48] *Id.* at 12.

[49] CAISO Answer at 5.

[50] *Id.* at 6.

that require revisions in light of Order No. 831, the Commission declined to require such modifications. CAISO also notes that in the Order No. 831 Compliance Order, the Commission emphasized the limited scope of Order No. 831. Specifically, in response to requests by protestors that CAISO revise certain penalty parameters as part of the compliance proceeding, the Commission stated that such revisions were not required by Order No. 831 and that the requests were beyond the scope of the Order No. 831 proceeding.[51]

33. In response to WPTF's contention that the formula used to calculate the constraint relaxation threshold does not reflect BAL-001-2 in its entirety, CAISO states that while it does not use the full formula, the predefined objective threshold value represents the amount of supply that can be less than load while still maintaining system frequency within reliability criteria.[52] CAISO explains that the omitted part of the BAL-001-2 formula modifies the frequency limits based on actual frequency in real time, and thus it would be not possible to incorporate that part of the NERC formula for pricing purposes.[53]

34. In response to WPTF's contention that when CAISO relaxes the system energy balance constraint, it is unlikely that the system will be operating at 60Hz, CAISO asserts that the threshold reflects the reality that a small portion of system energy balance constraint relaxation may represent apparent, rather than actual, shortfalls. CAISO states that if there is no actual shortfall, then system frequency will not be impacted. However, according to CAISO, if there is an actual shortfall, then system frequency will also not be impacted due to load shedding and other actions CAISO takes to maintain system frequency.[54]

35. In response to WPTF's arguments regarding CAISO's proposal to not apply the threshold in the day-ahead market, CAISO explains that in the day-ahead market, the threshold would apply after the market has already foregone reserves and triggered scarcity pricing.[55] CAISO contends that applying it at that point would not make sense because it represents a real shortfall. CAISO further states that that BAL-001-2 is a real-

[51] *Id.* at 7 (citing Order No. 831 Compliance Order, 172 FERC ¶ 61,263 at P 56).

[52] *Id.* at 9.

[53] *Id.*

[54] *Id.* at 10.

[55] *Id.* at 10-11.

time operating standard, and that, in the real-time market, the system energy balance constraint is relaxed prior to relaxing the ancillary services constraint.[56]

36. CAISO further argues that the day-ahead market is inherently different from the real-time market with regard to the relaxation of the system energy balance constraint. CAISO notes that, in the day-ahead market, supply clears against bid-in demand or self-schedules. However, in the real-time market supply clears against a fixed value of forecasted load. CAISO asserts that the constraint relaxation threshold is only meaningful for conditions in which the system energy balance constraint is relaxed, which only occurs in the real-time market. In the day-ahead market, CAISO states that economic bids or self-schedules for demand are reduced as needed during shortfalls.

37. CAISO asserts that WPTF's argument that the proposal creates an unreasonable pricing outcome under which energy prices in the real-time market will be greater when the market is short ancillary services than when the market is short on energy has no merit.[57] CAISO states that it does not always procure incremental ancillary services in the real-time market and that it prices energy separately from ancillary services. According to CAISO, ancillary services prices can be higher when there is an incremental need for ancillary services than when there is an incremental need for energy. CAISO anticipates this incremental need will not usually be large enough to trigger the constraint relaxation threshold. CAISO states that after the constraint relaxation threshold is implemented, when energy and ancillary services compete and incremental procurement occurs, energy prices will be based on opportunity cost in the top tier of the bid stack so that prices will be consistent. Alternatively, CAISO explains, the incremental ancillary services procurement target will be relaxed and the constraint relaxation threshold will trigger, which will set energy prices as expected and result in consistent pricing.[58]

38. In response to WPTF's arguments regarding its modeling, CAISO asserts that it is not possible to set prices based on shortages that are not measured. CAISO also states that it is addressing shortfalls in modeling and forecasting but that it is not possible to address them in all cases.[59]

39. CAISO states that it does not understand Brookfield's alternative proposal that once the constraint relaxation threshold is reached, the system energy balance constraint relaxation price should be set at $2,000/MWh for all market intervals in order to

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[56] *Id.* at 11.

[57] *Id.* at 12.

[58] *Id.*

[59] *Id.* at 13.

encourage additional supply. However, CAISO argues that the matter before the Commission is to determine whether CAISO's proposal is just and reasonable and that the Commission's review should not extend to whether an alternative proposal is more reasonable.[60] CAISO further contends that the Commission should not condition acceptance of this proposal on a comprehensive review of scarcity pricing measures. CAISO states that the primary purpose of the Tariff amendment is to complement the implementation of Order No. 831 and is not intended to address all potential scarcity pricing issues.[61]

IV. Discussion

A. Procedural Matters

40. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2020), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

41. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2020), prohibits an answer to a protest and/or answer unless otherwise ordered by the decisional authority. We will accept CAISO's answer because it has provided information that assisted us in our decision-making process.

B. Substantive Matters

42. We find that CAISO's proposed Tariff revisions are just and reasonable and therefore accept them, effective no later than June 15, 2021, as requested, subject to CAISO notifying the Commission of the actual effective date of the Tariff revisions within five business days of their implementation.

43. Regarding CAISO's import bidding provisions, we agree that CAISO's proposal appropriately adjusts the bid caps under Order No. 831 to reflect the characteristics of the energy market in the Western Interconnection. In particular, we find that CAISO's approach to validating import bids represents a balanced approach between allowing high prices during times when prices in the Western Interconnection are high and ensuring bids by resource adequacy resources reflect prevailing market conditions. Moreover, we find that CAISO's proposal to treat non-resource-specific resources that are not resource adequacy resources differently from non-resource-specific resource adequacy resources with respect to bid validation is not unduly discriminatory or preferential because the two types of resources are not similarly situated. Resource adequacy resources have a must-

[60] *Id.* at 14-15.

[61] *Id.* at 16.

offer obligation and are relied on by load serving entities in CAISO to meet expected resource adequacy needs. Non-resource adequacy resources, by contrast, have no such contract or obligation.

44. Resource adequacy imports are under contract to meet resource adequacy needs in CAISO's balancing authority area and can build any risk in having their bids reduced into the resource adequacy contract. We agree with CAISO that reducing bid values for import bids for non-resource adequacy resources to the Maximum Import Bid Price, the soft energy bid cap, or the highest verified bid could potentially discourage imports that can supplement energy imports during very tight supply conditions and may make it less likely that those resources recover their costs.

45. We also find CAISO's scheduling and pricing parameter proposal to be just and reasonable. CAISO's proposal will allow scheduling and pricing parameters and ancillary service shortage pricing to be adjusted upward to reflect a $2,000/MWh when there are cost-verified bids above the $1,000/MWh offer cap or when the Maximum Import Bid Price is above $1,000/MWh. This complements CAISO's implementation of Order No. 831, because it ensures that administratively set pricing parameters are adjusted upward appropriately to supply offers in the market.

46. Regarding CAISO's proposal on pricing when the system energy balance constraint is relaxed, we agree with CAISO that its proposed provision to use the constraint relaxation threshold to delineate between shortfalls that potentially result from an over-forecast of demand and more significant shortfalls is reasonable. CAISO's proposal addresses the concern that less serious shortfalls could result in very high prices where scarcity concerns do not warrant those prices. Further, the proposal ensures that prices during periods where there is insufficient supply to meet the forecast of demand are at least $1,000/MWh in all cases and are allowed to rise above $1,000/MWh when there is a cost verified bid above $1,000/MWh, no matter the size of the shortfall.

47. We disagree with WPTF that such an approach constitutes a collateral attack on Order No. 831. As CAISO notes, Order No. 831 did not dictate specific requirements for shortage prices or other market parameters or penalties.[62] Therefore, we confirm that CAISO's proposal to set the penalty parameter at the highest cleared economic offer during less significant shortages is not inconsistent with the requirements of Order No. 831.

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[62] *See* Order No. 831, 157 FERC ¶ 61,115 at P 213 (explaining that RTOs/ISOs can make section 205 filings to propose modifications to market elements that require revision in light of Order No. 831, and finding "that it is not appropriate to determine in this Final Rule the changes that individual RTOs/ISOs should make to market elements that are not the subject of these reforms").

48. We find CAISO's proposed constraint relaxation threshold to be just and reasonable. While we agree with WPTF that the proposed threshold does not reflect the full BAL-001-2 standard, CAISO is, critically, not proposing to alter its operational practices based on the constraint relaxation threshold. Rather, CAISO is proposing to use the threshold to delineate between less and more significant shortages and to price those shortages differently. Pricing more significant shortages at a higher level than less significant shortages is a reasonable approach and CAISO's threshold represents a reasonable way to separate the more significant shortfalls from the less significant shortfalls. CAISO's threshold is based on the amount of supply shortfall a balancing authority can incur before significantly impacting system frequency under normal operating conditions and is thus scaled by the size of each balancing authority area. While WPTF is correct that during abnormal operating conditions the ACE limit calculated by BAL-001-2 could be lower, reflecting an increased need to limit ACE as frequency drops, we find this does not detrimentally impact the constraint relaxation threshold's ability to function as a threshold for pricing purposes. Moreover, as CAISO notes, under such abnormal circumstances, CAISO would perform actions, such as load shedding, to bring system frequency back to normal operating levels.

49. We also find that it is just and reasonable to apply the constraint relaxation threshold in the real-time market and not in the day-ahead market. As CAISO notes, the constraint relaxation threshold is only relevant to the real-time market, where there is a concern that CAISO's forecast may over-estimate actual demand and where there is a system energy balance constraint to be relaxed. CAISO explains that constraint relaxation threshold is only meaningful when the system energy balance constraint is relaxed, which only occurs in the real-time market. Accordingly, we find CAISO's proposal regarding the constraint relaxation threshold is appropriate given the existing differences between CAISO's day-ahead and real-time markets.

50. We do not agree with WPTF's concern regarding ancillary service prices and find this concern to be speculative. WPTF posits that there may be circumstances in which shortage pricing based on ancillary service shortages will be higher than shortage pricing based on the relaxation of the system energy balance constraint in other circumstances. We do not agree that this would render CAISO's proposal unjust and unreasonable. As CAISO notes, energy and ancillary services are priced separately and, in cases where both are incrementally procured, the co-optimization of energy and ancillary services will result in consistent prices.

51. Finally, we agree with CAISO that Brookfield's request to condition acceptance of CAISO's filing on a review of scarcity pricing in CAISO is beyond the scope of this proceeding. To the extent Brookfield seeks to modify CAISO's proposal on scheduling and pricing parameters, we agree with CAISO that our review here is to assess whether

CAISO's proposal is just and reasonable. Because we find that it is, we need not consider whether other proposals are more reasonable.[63]

The Commission orders:

(A) CAISO's proposed Tariff revisions are hereby accepted for filing, to be effective no later than June 15, 2021, as requested, as discussed in the body of this order.

(B) CAISO is hereby directed to notify the Commission of the actual effective date of the Tariff revisions within five business days of their implementation, in an eTariff submittal using Type of Filing Code 150 – Report.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.

[63] *See, e.g.*, *City of Bethany v. FERC*, 727 F.2d 1131, 1136 (7th Cir. 1984) (when determining whether a proposed rate was just and reasonable, the Commission properly did not consider "whether a proposed rate schedule is more or less reasonable than alternative rate designs").