



California ISO

RDRR Bidding Enhancements

Track 1 – Draft Final Proposal

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Table of Contents

- 1. Executive Summary 3
- 2. Background..... 3
- 3. RDRR Bidding Enhancements Draft Final Proposal 4
- 3.1 Aligning RDRR bidding rules with real-time price conditions consistent with FERC Order No. 831 4
- 4. EIM Governing Body Role..... 9
- 5. Stakeholder Engagement Plan..... 9
- 6. Next Steps10

1. Executive Summary

The CAISO has bifurcated the RDRR Bidding Enhancements into two tracks to facilitate board approval and summer 2022 implementation to align RDRR bidding rules with real-time price conditions and leave the rest of the enhancements for a future policy and implementation timeline. The updated tracks include:

- Track 1 will address aligning RDRR bidding rules with real-time price conditions, consistent with FERC Order No. 831, seeking a March 2022 ISO Board of Governors approval and Summer 2022 implementation.
- Track 2 will address adjusting discrete RDRRs operating range to reflect operational capabilities in real time and re-examine the cap on discrete RDRR registration. It is planning for a May 2022 ISO Board of Governors approval and implementation in either fall of 2022 or 2023.

In this Track 1 Draft Final Proposal, the CAISO proposes enhancements to real-time bidding for the Reliability Demand Response Resource (RDRR) model by:

- Aligning RDRR bidding rules with real-time price conditions consistent with FERC Order No. 831 by proposing that RDRRs must bid at least 95% of the hard energy bid cap (\$1,900/MWh) when the conditions are satisfied to raise the soft energy bid cap to \$2,000/MWh.¹ To implement this, the CAISO proposes to automatically adjust the submitted RDRR bids based on the change in energy bid cap by maintaining the percentage of the bid cap originally submitted by the Scheduling Coordinator. This automatic adjustment will occur after the market close and will only apply if no action is taken by the close of each hour's real-time market by the Scheduling Coordinator.

2. Background

On June 24, 2010, in D.10-06-034 the CPUC approved a multi-party settlement in its demand response proceeding (R.07-01-041) that required investor-owned utilities to transition their CPUC-approved retail emergency-triggered demand response programs into a CAISO reliability demand response product.² The settlement specified the minimum operating and technical requirements for retail emergency-triggered demand response resources. The CPUC settlement also required these resources be made available for emergency operating procedures. While previously emergency demand response, like RDRR, were triggered under a "Warning" notice it will now be referred to as an "EEA 2".³

¹ The CAISO will develop cost justification methodology for demand response resources (including RDRRs participating economically in the day-ahead market) and energy storage resources bidding above \$1,000/MWh through a separate stakeholder process.

² Details on the CPUC Reliability-Based Demand Response Settlement are available at <https://docs.cpuc.ca.gov/publishedDocs/published/Graphics/119817.PDF> and https://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/119815.PDF

³ The CAISO's Operating Procedure 4420 outlines when RDRRs are conditionally released for dispatch in the real-time market <http://www.aiso.com/Documents/4420.pdf>

Consistent with the terms of the CPUC settlement, the CAISO developed the RDRR product. On October 26, 2010, the CAISO Board of Governors authorized the RDRR product. The Board of Governors memorandum approving the RDRR product specifically noted that it would enable the CAISO “to dispatch these emergency-triggered programs when and where they are needed and, appropriately, reflect their value in the [CA]ISO market.”⁴

Fast forward ten years, the Final Root Cause Analysis of the August 2020 load shedding events found that RDRRs were manually dispatched out of market by the CAISO system operators versus through the “market” as originally envisioned.⁵ As a result, in its 2021 Summer Readiness initiative, the CAISO modified its tariff to dispatch RDRRs in the real-time pre dispatch (RTPD) market run so that RDRRs could be more optimally dispatched through the market provided they have a longer dispatch horizon. Additionally, the CAISO updated its tariff to allow RDRRs to register as 5-, 15-, or 60-minute dispatchable resources to better elect and reflect an RDRR’s operating parameters. Resources registered as 15-minute dispatchable are allowed to set the marginal energy price in the fifteen-minute market. Resources registered as 5- minute dispatchable are allowed to set the marginal energy price in real-time dispatch (RTD). These changes were accomplished by reflecting discrete RDRRs as discrete in the scheduling run, but treating them as continuous in the pricing run. Continuous RDRR’s bid curve submitted by the scheduling and pricing runs allows RDRR to set the price. RDRRs registered as 60-minute dispatchable that clear in the hour-ahead scheduling process (HASP) will receive a fifteen-minute market schedule and will settle at the corresponding locational marginal price during each fifteen-minute market interval like all other HASP eligible resources.

3. RDRR Bidding Enhancements Draft Final Proposal

3.1 Aligning RDRR bidding rules with real-time price conditions consistent with FERC Order No. 831

In 2016, the Federal Energy Regulatory Commission (FERC) issued FERC Order No. 831, which required Independent System Operators and Regional Transmission Organizations (ISOs/RTOs) to revise their tariffs to raise the energy bid cap from \$1,000/MWh to \$2,000/MWh, and generally required suppliers that submit bids above \$1,000/MWh to base those bids on verifiable costs. The rule changes in Order No. 831 created a structure where internal supply offers above \$1,000/MWh are effectively mitigated to an amount equal to a supplier’s expected or actual costs.

Order No. 831 required that ISOs verify the costs underlying these cost-based offers above \$1,000/MWh before an offer could be used to calculate energy prices. If an ISO could not verify

⁴ The CAISO Memorandum. Decision on the Reliability Demand Response Product. October 26, 2010. <http://www.caiso.com/Documents/101101DecisiononReliabilityDemandResponseProduct-Memo.pdf>

⁵ Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave, January 13, 2021, available at: <http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>

the costs underlying the offer before the market clearing process begins, then that offer may not be used to calculate energy prices.

Building on the CAISO's Order No. 831 Compliance Filing made in September 2019,⁶ the FERC Order No. 831 – Import Bidding and Market Parameters initiative⁷ was the CAISO's formal stakeholder process to propose various tariff revisions and system updates to accommodate bidding flexibility above the \$1,000/MWh soft energy bid cap. On February 22, 2021, the CAISO received FERC approval⁸ for these changes that were activated in June 2021.

Within the Compliance Filing,⁹ the CAISO proposed that RDRRs would maintain their bidding structure in the real-time market by bidding at least 95% of the soft energy bid cap (\$950/MWh). If scheduling coordinators for RDRRs desired to bid above the soft energy cap, they would need to submit reference level change adjustment requests before the market opens. Although FERC accepted this proposal in compliance with Order No. 831, Scheduling Coordinators lack guidance on *how* to justify above-cap bids when RDRRs are supposed to be real-time resources of last resort, dispatched when the CAISO has exhausted economic bids. Moreover, based on the RDRR impacts during the Summer 2020 events, the CAISO became concerned that dispatching RDRRs based on lower bids could lead to real-time price suppression. This initiative seeks to explore solutions to resolve stakeholder concerns, maintain compliance with FERC Order No. 831, and be consistent with the terms of the CPUC settlement.¹⁰

Stakeholder Feedback

Stakeholders generally supported the CAISO's revised straw proposal to require RDRRs to bid at least 95% of the hard energy bid cap (\$1,900/MWh) when the conditions are satisfied to raise the bid cap to \$2,000/MWh. Further, stakeholders supported the CAISO's proposal for SIBR implementation to automatically adjust the submitted RDRR bids based on the change in energy bid cap by maintaining the percentage of the bid cap originally submitted by the Scheduling Coordinator. This automatic adjustment will occur after the market close and will only apply if no bid adjustment actions are taken by the close of each hour's real-time market by the Scheduling Coordinator.¹¹

However, the Department of Market Monitoring (DMM) opposed the proposal. The DMM reiterated their previously submitted comments that when the bid cap is raised to \$2,000/MWh,

⁶ The CAISO's September 2019 FERC Order No. 831 Compliance Filing is available at [Microsoft Word - Tx letter for filing to comply with Order No. 831 \(caiso.com\)](#)

⁷ More information on the CAISO's stakeholder initiative on FERC Order No. 831 is available at [California ISO - FERC Order 831 - Import bidding and market parameters \(caiso.com\)](#)

⁸ The FERC Letter accepting the CAISO's FERC Order No. 831 policy is available at [Feb22-2021-LetterOrderAccepting-FERCOrderNo831-ER21-1164.pdf \(caiso.com\)](#)

⁹ Proposed tariff changes to sections 30.6.2.1.2.1 and 30.6.2.1.2.2 are available on page 37 of [Microsoft Word - Tx letter for filing to comply with Order No. 831 \(caiso.com\)](#)

¹⁰ See footnote 2.

¹¹ The automatic adjustment of RDRR bids will occur immediately after the close of the real-time markets at 75 minutes before the start of each applicable hour when the conditions are satisfied to raise the bid cap to \$2,000/MWh and there is no action taken by the Scheduling Coordinator to resubmit their bid at least at 95% of the hard energy bid cap.

RDRRs should be allowed to bid between 95% of the soft energy bid cap and the hard bid cap (\$950/MWh - \$2,000/MWh). They noted this approach would promote efficient market outcomes as RDRRs would not be required to bid above their marginal costs.

California Large Energy Consumers Association (CLECA), PG&E, and Shell Energy expressed support for the proposal with specific requests for clarification. CLECA requested the CAISO to clarify, 1) when the bid cap is revised downward from \$2,000/MWh to \$1,000/MWh, RDRR bids are not dispatched prior to non-RDRR bids, and 2) RDRR bids are dispatched after economic PDRs. Both PG&E and Shell Energy requested the CAISO confirm the proposal including SIBR implementation is fully compliant with FERC requirements and existing CAISO tariff related to FERC Order No. 831.

Finally, the Western Power Trading Forum (WPTF) supported the proposal. However, they raised concern that the proposal is characterized in a manner that may introduce FERC risk as it does not include a methodology to cost verify RDRR bids. WPTF noted that FERC Order No. 831 is specific to allowing energy offers greater than \$1,000/MWh to be used in the market and set prices when those offers are cost verified. Since the CAISO's proposal does not contain a proposal to cost verify RDRR bids, they suggested characterizing the proposal instead as, "administratively increasing energy offers of RDRRs under a \$2,000/MWh bid cap to ensure continued alignment with the bidding requirements of RDRRs."

Response to Stakeholder Feedback

Based on consideration of all of these comments, the CAISO proposes to maintain its approach to require RDRRs to bid at least 95% of the hard energy bid cap (\$1,900/MWh) when the conditions are satisfied to raise the bid cap to \$2,000/MWh. Additionally, the CAISO proposes to retain its proposal for SIBR implementation to automatically adjust the submitted RDRR bids based on the change in energy bid cap by maintaining the percentage of the bid cap originally submitted by the Scheduling Coordinator. The CAISO acknowledges the DMM's concern that this approach may inaccurately reflect the marginal costs of RDRRs. However, this proposal maintains the design of RDRRs in the market as intended, consistent with the terms of the CPUC settlement and compliant with FERC Order No. 831. Further, this proposal reflects the need to uniquely position RDRRs in the market in response to the energy bid increase to \$2,000/MWh in order to provide appropriate scarcity pricing signals to the market when they are conditionally released for dispatch.

Specific to the requests by CLECA, PG&E, and Shell Energy for clarification, the CAISO notes that in the rare instances the bid cap is lowered in the real-time market, any non-RDRR bids submitted above \$1,000/MWh will be invalidated and will need to be resubmitted at or below \$1,000/MWh.¹² The CAISO believes this proposal supports the intent for real-time market RDRRs to be dispatched after non-RDRR energy bids when an EEA 2 notice is issued, indicating system emergency conditions. There may be scenarios when RDRRs may be dispatched prior to other resources, including PDRs. However, this would only occur if the

¹² The BPM for Market Instruments Attachment P.3 Example 4 outlines this specific scenario <https://bpmcm.aiso.com/Pages/BPMDetails.aspx?BPM=Market%20Instruments>

CAISO Operators exceptionally dispatch an RDRR, likely in the event of a contingency or local reliability issue.

Finally, based on comments received specific to the characterization of the proposal, the CAISO agrees with WPTF that the CAISO's characterization of this issue has been imprecise to date. The intent of this proposal is not to comply with Order No. 831, which the CAISO already has. The CAISO proposes to re-characterize the proposal as "Aligning RDRR bidding rules with real-time price conditions consistent with FERC Order No. 831."

Proposal

To address concerns that RDRRs are restricted from bidding greater than \$1,000/MWh when the energy bid cap is raised to \$2,000/MWh, the CAISO proposes that RDRRs must bid at least 95% of the hard energy bid cap (\$1,900/MWh) when the conditions are satisfied to raise the bid cap to \$2,000/MWh.¹³ The CAISO believes this proposal is consistent with the intent of the RDRR settlement and the CAISO's RDRR design, which dispatches RDRRs under emergency conditions when economic bids are approaching or already exhausted. Without enabling RDRRs to bid close to the hard energy bid cap, RDRRs may suppress real-time prices during scarcity events, thereby interfering with the economic signal the CAISO would otherwise send to supply.

As illustrated in the Business Practice Manual (BPM) for Market Instruments, the CAISO communicates to Scheduling Coordinators in the bidding platform SIBR, when the energy bid cap has been raised from \$1,000/MWh to \$2,000/MWh for each hour. Likewise, Scheduling Coordinators are notified through SIBR in the rare situations when the energy bid cap is revised down from \$2,000/MWh to \$1,000/MWh.¹⁴ To alleviate stakeholder concerns that there is not enough time for Scheduling Coordinators to revise their bids to reflect the change in energy bid cap, the CAISO proposes to automatically adjust the submitted RDRR bids based on the change in energy bid cap by maintaining the percentage of the bid cap originally submitted by the Scheduling Coordinator. This automatic adjustment will occur after the market close and will only apply if no action is taken by the close of each hour's real-time market by the Scheduling Coordinator.¹⁵ The CAISO believes this proposal supports the intent for real-time market RDRR energy bids to be dispatched after non-RDRR bids during system emergency conditions. Further, this proposal recognizes the need to uniquely position RDRRs in the market in response to the energy bid cap increasing to \$2,000/MWh, in order to provide appropriate scarcity pricing signals to the market when they are dispatched.

The following examples illustrate the CAISO's proposal for SIBR implementation:

¹³ The conditions to raise the energy bid cap from \$1,000/MWh to \$2,000/MWh are outlined on pages 14 and 15 [FinalProposal-FERCOrder831-ImportBidding-MarketParameters.pdf \(caiso.com\)](#). When the conditions are satisfied to raise the bid cap to \$2,000/MWh, this bid cap applies only to a subset of resources (e.g. non-resource specific import resources).

¹⁴ BPM for Market Instruments Attachment P

<https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Market%20Instruments>

¹⁵ See footnote 11.

- Example 1:
A real-time market RDRR bid has been submitted at 95% of the soft energy bid cap (\$950/MWh). If the conditions are satisfied to raise the bid cap to \$2,000/MWh and the Scheduling Coordinator who submitted the \$950/MWh RDRR bid takes no action to resubmit their bid, SIBR will automatically increase their bid to 95% of the hard energy bid cap (\$1,900/MWh) after market close.
- Example 2:
In the day-ahead market for a specific trade date, the bid cap is set to \$1,000/MWh because the conditions have not be satisfied to raise the bid cap to \$2,000/MWh. However, in the real-time market for the same trade date, there was one cost verified energy bid submitted from a resource-specific resource greater than \$1,000/MWh. This condition satisfies raising the bid cap in the real-time market to \$2,000/MWh.

A real-time market RDRR bid has been submitted based on this information at 98% of the hard energy bid cap (\$1,960/MWh). In the rare instance, the resource-specific resource with the cost-verified energy bid greater than \$1,000/MWh has decided to withdraw their bid and the conditions are no longer satisfied to maintain the \$2,000/MWh energy bid cap, the energy bid cap is lowered to \$1,000/MWh at a later time prior to market close. At this point the Scheduling Coordinator for the RDRR bid takes no action or is unable to take action and SIBR will automatically decrease the Scheduling Coordinator's RDRR bid to 98% of the soft energy bid cap (\$980/MWh) after market close.

Consistent with the Business Practice Manual for Market Instruments Attachment P, in this scenario all real-time market non-RDRR bids above \$1,000/MWh will be invalidated and will need to be resubmitted at or below \$1,000/MWh. Scheduling Coordinators will be notified through SIBR regarding this change to the energy bid cap and it will be reflected in SIBR as soon as practicable.

This proposal aligns RDRR bidding rules with real-time price conditions, consistent with FERC Order No. 831 and maintains that in the real-time market, RDRRs are treated as emergency response resources with limited availability and are only released for dispatch when an EEA 2 notice is issued.¹⁶ This underscores the intent of the proposal to value RDRRs when the conditions are satisfied to raise the soft energy bid cap to \$2,000/MWh without requiring additional cost-justification support to substantiate their bids.¹⁷ Additionally, this proposal maintains the positioning of RDRRs in the market consistent with the terms of the CPUC settlement. Further, the CAISO proposes to preserve the existing bidding structure for RDRRs when the \$1,000/MWh soft energy bid cap is in place.

¹⁶ See footnote 3.

¹⁷ To clarify, any RDRR bid submitted greater than \$1,000/MWh would not be considered as a cost-verified bid for purposes of raising the bid cap for resource-specific resources.

4. EIM Governing Body Role

This initiative proposes changes for bidding RDRRs in the real-time market. The CAISO staff believes that the EIM Governing Body has joint authority with the Board of Governors over these proposed changes.

The role of the EIM Governing Body with respect to policy initiatives changed on September 23, 2021, when the Board of Governors adopted revisions to the corporate bylaws and the Charter for EIM Governance to implement the Governance Review Committee’s Part Two Proposal. Under the new rules, the Board and the EIM Governing Body have joint authority over any proposal to change or establish any CAISO tariff rule(s) applicable to the EIM Entity balancing authority areas, EIM Entities, or other market participants within the EIM Entity balancing authority areas, in their capacity as participants in EIM. This scope excludes from joint authority, without limitation, any proposals to change or establish tariff rule(s) applicable only to the CAISO balancing authority area or to the CAISO-controlled grid. Charter for EIM Governance § 2.2.1.

The tariff changes to implement this initiative would be “applicable to EIM Entity balancing authority areas, EIM Entities, or other market participants within EIM Entity balancing authority areas, in their capacity as participants in EIM.” EIM balancing authority areas may use the RDRR model assuming they have approval from their local regulatory authority and meet the requirements of RDRR participation. Accordingly, the proposed changes to the RDRR model fall within the scope of joint authority.

This proposed classification reflects the current state of the initiative and could change as the stakeholder process moves ahead. The CAISO did receive comments from PG&E regarding this misalignment with the current BPM language. The CAISO plans to update the RDRR BPM to align with this EIM governing body role during the implementation phase.

5. Stakeholder Engagement Plan

Date	Milestone
1/26/2022	Publish draft final proposal
2/2/2022	Stakeholder conference call on draft final proposal
2/16/2021	Stakeholder comments due on draft final proposal
2/22/2022	Publish final proposal and draft tariff language
3/1/2022	Stakeholder conference call on draft tariff language
3/9/2022	Stakeholder comments due on final proposal and draft tariff language
3/15/2022	EIM Governing Body

3/17/2022	Board of Governors Meeting
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6. Next Steps

In this draft final proposal, the CAISO has tried to capture and describe the open issues stakeholders want resolved and the enhancements stakeholders would like to see made to the CAISO RDRR model. The CAISO will hold a stakeholder call on February 2, 2022 to review the draft final proposal and seek clarity on the issues or enhancements that stakeholders believe were not fully addressed or captured. The CAISO encourages all stakeholders to submit comments on the draft final proposal by February 16, 2022.