174 FERC ¶ 61,059
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. ER21-447-000

ORDER ACCEPTING TARIFF REVISIONS

(Issued January 29, 2021)

1. On November 20, 2020, the California Independent System Operator Corporation (CAISO) submitted, pursuant to section 205 of the Federal Power Act,[1] proposed revisions to its Open Access Transmission Tariff (Tariff) permitting a share of a resource to be pseudo-tied to the CAISO balancing authority area. The proposed amendments remove the existing Tariff-based limitation that requires delivery of the entire output of a pseudo-tied resource to the CAISO balancing authority area and provides a framework for a pseudo-tie of a shared resource to participate in CAISO markets. CAISO's filing also includes associated implementing provisions addressing outage allocation, metering and telemetry, bid cost recovery, and oversight and enforcement.[2] As discussed below, we accept CAISO's Tariff amendments for filing, effective January 30, 2021, as requested.

I. Background

2. CAISO states that its energy imbalance market (EIM) has expanded since its inception in 2014 to include numerous balancing authorities in the Western Interconnection, several of which contain jointly owned participating resources. CAISO states that dynamic schedules are currently the only mechanism by which shared resources in other balancing authority areas may participate in the CAISO markets.[3] However, CAISO notes that there

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[1] 16 U.S.C. § 824d.

[2] CAISO November 20, 2020 Filing at 1 (hereinafter Transmittal).

[3] Dynamic schedules and pseudo-ties are both variants of dynamic transfer between two balancing authority areas. While dynamically scheduled resources are accounted for as part of the host balancing authority area's resource portfolio, pseudo-tied resources fall under the attaining balancing authority area's resource

are modeling and pricing issues associated with interactions between dynamic schedules and EIM market transfers, explaining that economic bidding from dynamic schedules can have sub-optimal impacts on real-time interchange accounting that can cause data problems for dispatch and pricing. According to CAISO, these interactions can cause data conflicts in real-time, and could result in some inconsistency between dispatches and bids for the dynamically scheduled resources that cannot be resolved through post hoc accounting adjustments.[4] CAISO states that market dispatches of dynamically scheduled economic bids require manual intervention from the EIM entity to adjust its EIM transfers to match CAISO's dispatch in order to avoid the modeling issues, and avoid affecting settlements.[5]

3. In contrast to dynamic schedules, CAISO explains that similar data conflicts do not occur with economic bids from pseudo-tied resources because the pseudo-tie logically transfers the resource from the originating balancing authority area to the CAISO balancing authority area, therefore excluding the resource in the interchange accounting between the two balancing authorities. CAISO asserts that such a mechanism avoids adverse impacts on resource dispatch and corresponding settlements.[6] Further, CAISO highlights that it anticipates two new EIM entrants in April 2021,[7] both of which host shared resources that are dynamically scheduled into the CAISO balancing authority area, and might risk encountering data conflicts without the option to convert to a pseudo-tie and avoid the issues described above.[8]

II. <u>CAISO's Proposal</u>

4. To facilitate the objective to avoid the concerns noted above, CAISO's proposed Tariff amendment (which primarily revises Appendix N of the CAISO Tariff, " Pseudo-Tie Protocols") creates a framework for a pseudo-tie of a shared resource to

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portfolio.

[4] Transmittal at 3.

[5] *Id.* at 5. CAISO does note that the modeling differences and data issues do not occur with dynamic schedules if they are either self-scheduled or involve variable energy resources. This is because self-schedules can be represented in base schedules and not dispatched through EIM, and variable resources' dispatch uses forecasts based on their telemetered output and can be tracked.

[6] *Id*.

[7] CAISO anticipates Los Angeles Department of Water and Power and Public Service Company of New Mexico will join the EIM in spring 2021.

[8] Transmittal at 2, 3.

participate in the CAISO markets, and proposes to model each share of a pseudo-tied resource as a separate market resource.[9] CAISO explains that the modeling and management of a resource with multiple interests is more complex and raises issues not present when a single owner has responsibility for operational and financial consequences of operating the entire pseudo-tied resource; therefore, CAISO's proposed Tariff amendments also include additional provisions and requirements to implement the shared resource mechanism.

5. Foremost of these additional provisions is CAISO's proposed requirement that for shared pseudo-tie generating units to have an allocation protocol that provides for sharing the resource consistent with relevant implementation details and specifications found in the CAISO Tariff and Business Practice Manuals.[10] CAISO's proposal also requires the designation of a single scheduling coordinator as a "protocol administrator" to represent the resources and act as coordinator and operator of the overall resource consistent with the provisions of Appendix N of CAISO's Tariff.[11]

6. CAISO explains that its current framework is not able to model all physical characteristics involved in shared resource pseudo-ties, which requires technology development and settlement changes in a timeframe longer than the time available for EIM. CAISO states that its market initiatives roadmap includes future consideration of a comprehensive modeling solution. Nevertheless, CAISO states that the incremental steps proposed in this filing, using the allocation protocol and protocol administrators, facilitate pseudo-ties of shared resources, provide market benefits, and meet immediate stakeholder needs.[12] The protocol administrator shall, among other things ensure that the resource output is consistent with CAISO dispatch instruction separately issued to each

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[9] This resource model would consist of a simple generator with a non-negative minimum load, start-up and minimum-load costs, and a single operating range. *Id.* at 5. CAISO notes that other grid operators, such as PJM Interconnection, L.L.C., also support market participation by pseudo-tie resources representing less than the entire output of the generating facility, including resources providing capacity for resource adequacy. *Id.* at 5 n.12.

[10] *Id.* at 7. CAISO states that during the pseudo-tie implementation process it will review the allocation protocol to confirm compliance with specific requirements. *See id.*, attach. D, proposed Appendix N § 3.2.2.

[11] *Id*. at 7.

[12] *Id.* at 6 & n.13 (noting that a comprehensive joint ownership modeling policy stakeholder initiative is currently intended in 2022, for implementation in 2023).

pseudo-tie share of the resource, and ensure each pseudo-tie share assumes the financial obligations and operational responsibility for its participation in the market.[13]

7. In addition to the shared allocation protocol, CAISO proposes various provisions addressing outage management, metering and telemetry, bid cost recovery, and monitoring and enforcement. CAISO states that outages associated with a pseudo-tie of shared resources must follow the allocation protocol and must adhere to the CAISO Tariff's outage reporting requirements. CAISO explains that the default outage allocation methodology anticipates outages and derates will be shared proportionally between proposed shared resources whenever possible.[14]

8. With respect to metering and telemetry, CAISO's proposal requires the protocol administrator to provide separate telemetry data for the entire resources and for each share of the resource, plus any other telemetry data that may be required for CAISO market participation. Among other requirements, CAISO explains that the protocol administrator will establish a logical metering plan (including an expectation for partial resources to reflect and follow dispatch instruction to the extent feasible and to explain how deviations will be handled). The metering plan is subject to CAISO's approval.[15]

9. CAISO states that bid cost recovery will apply separately to each pseudo-tied share as a separate resource, based upon each share's resource characteristics and costs, commitment, and bid-in costs, and that start-up and minimum load costs will be equitably allocated among the owners based on their proportion of costs.[16] CAISO explains that the sum of the shares' costs must not exceed the total costs that would be represented if the shared resource were participating as a single resource, and the shared allocation

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[13] *Id.* at 6. The protocol administrator will specifically be responsible for ensuring that that sum of the resource shares' maximum capability does not exceed the physical plant capability, and that the sum of ramp rates an any other operational characteristic of each shared resource is not beyond the plant capability. *See id.*, attach. D, proposed Appendix N § 3.2.1–3.2.3.

[14] Transmittal at 8; *id.*, attach. D, proposed Appendix N §§ 3.3 (Telemetry), 3.4 (metering), 3.5 (Outages), 3.6 (Start-up Costs and Minimum Load Costs).

[15] Transmittal at 8. CAISO explains that the metering plan will confirm that uninstructed deviations assigned to shares delivered to CAISO will not exceed pro-rata allocation proportional to instructed energy in each settlement interval, consistent with CAISO market rules and processes. *See id.*, attach. D, proposed Appendix N § 3.4.1.

[16] The proportions for minimum load and start-up costs must be documented in the protocol. Transmittal at 9.

protocol must identify how compliance will be monitored and verified in comparison to the resource's overall costs.[17]

10. In developing monitoring and enforcement provisions, CAISO states that it recognized concerns that allocation of start-up and minimum load costs and bid cost recovery could be implemented in a way that improperly benefits participants. However, CAISO also explains that the proposed framework necessitates a level of flexibility as cost responsibility among owners of shared resources can vary considerably, and CAISO does not want to impede market participation by constraining commercial agreements among market participations.[18] Nevertheless, CAISO explains that it can require the protocol administrator to submit documentation demonstrating compliance with allocation protocol and that the allocation protocol may also provide for an auditable self-monitoring compliance mechanism.[19]

11. Additionally, CAISO states that its current proposal includes provisions for monitoring and enforcement to address potential risks associated with bid cost recovery. Specifically, CAISO states that it requires that the Pseudo-Tie Participating Generator Agreement to identify key attributes of each shared resource in the allocation protocol, which provides transparency without compromising potentially sensitive commercial information. To address potential circumstances where a scheduling coordinator does not follow the allocation protocol, or if the protocol results in an inequitable allocation of bid cost recovery revenue, CAISO has proposed detailed and specific suspension and termination procedures in the proposed amendments to Appendix N. CAISO's proposed Tariff provisions specifically allow for suspension of pseudo-tie operations in the event CAISO detects any distortions, and outlines investigation and termination procedures within a specified timeframe.[20]

12. Finally, CAISO clarifies that the proposed Tariff amendment does not restrict the current ability of market participants to dynamically schedule all or a portion of their resources from EIM entity balancing authority areas to the CAISO balancing authority area, stating that although the dispatch and pricing impacts of dynamic scheduling are real, they are not unmanageable.[21] Further, CAISO clarifies that the requirements it proposes in this filing apply to pseudo-ties of shared resources and do not apply to

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[17] *Id*. at 9; *id.*, attach. D, proposed Appendix N § 3.6.1.

[18] *Id.*, attach. C at 5–6.

[19] Transmittal at 9.

[20] *Id.* at 9; *id.*, attach. D, proposed Appendix N §§ 3.2.4–3.2.5.

[21] Transmittal at 5 nn.10–11.

dynamically scheduled resources.[22] CAISO also notes that the proposed framework for pseudo-ties of shared resources is similar to the framework set forth in the agreement between CAISO and Calpine Sutter Energy Center that the Commission approved, differing mostly in the suspension and termination enforcement mechanisms.[23]

13. CAISO requests an effective date of January 30, 2021, explaining that it would ensure requisite measures are in place to support pseudo-ties of shared resources, in preparation for onboarding the two new EIM entities by April 2021.[24]

III. Notice of Filing and Responsive Pleadings

14. Notice of CAISO's filing was published in the *Federal Register*, 85 Fed. Reg. 76,070 (Nov. 27, 2020), with interventions and protests due on or before December 11, 2020. Timely motions to intervene were filed by Modesto Irrigation District; City of Santa Clara; Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside; Pacific Gas and Electric Company; Calpine Corporation; and Northern California Power Agency. Department of Market Monitoring of the California Independent System Operator Corporation (DMM) filed a timely motion to intervene and comments in support of CAISO's filing.

Comments

15. DMM supports CAISO's filing, noting that during the stakeholder process, it expressed concerns and recommendations related to the potential for a resource owner to inflate their bid cost recovery payments or to create inequitable allocation of bid cost recovery between balancing authority areas. However, DMM clarifies that the final proposal submitted herein effectively addresses these concerns. Specifically, DMM states that CAISO's addition of the suspension and/or revocation of a shared pseudo-tie arrangement (if there is evidence of exploitation) creates a reasonable mechanism for remedying problematic sharing protocols while providing flexibility that CAISO and market participants may need to model complex modeling arrangements.[25]

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[22] *Id.* at 11.

[23] *Id.* at 6 (citing *Cal. Indep. Sys. Operator Corp.*, 171 FERC ¶ 61,262 (2020)).

[24] *Id.* at 11–12.

[25] DMM December 11 Comments at 3–4.

IV. Discussion

A. Procedural Matters

16. 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.

B. Commission Determination

17. We accept CAISO's proposed Tariff amendments to permit shared resources to pseudo-tie into the CAISO balancing authority area as just and reasonable and not unduly discriminatory or preferential. We find that CAISO's proposed framework—to allow shared resources to pseudo-tie partial unit outputs into the CAISO balancing authority area—provides greater operational flexibility, and reduces potential data and modeling issues that arise from an existing limitation in the Tariff of only permitting dynamic scheduling of shared resources. CAISO has demonstrated that there is an increasing need for such a framework due to the expansion of its EIM, which contains several shared EIM resources that may otherwise encounter issues when economically bidding in real-time using dynamic schedules.[26]

18. We find CAISO's proposal to utilize a designated protocol administrator to represent and manage shared pseudo-tie resources to be an acceptable mechanism to manage this novel framework. Using a governing allocation protocol is reasonable given the need to define and quantify shared resource characteristics prior to enabling a shared resource to pseudo-tie into the CAISO balancing authority area. We also find CAISO's proposed implementation details addressing outage management, telemetry, monitoring and enforcement, and bid cost recovery considerations address these complexities. We find these provisions strike an appropriate balance between the need for resource owner flexibility, and the need to manage potential technical challenges and compliance with the sharing protocol.

19. We find that CAISO's proposal contains sufficient mechanisms to address potential bid cost recovery-related inflation and deviations from established protocol. Specifically, the shared allocation protocol establishes the basis by which shared pseudo-tie resources are to operate. Moreover, the metering and telemetry provisions, along with the duties of the protocol administrator, additionally help ensure compliance with these

[26] As CAISO explains, both Los Angeles Department of Water and Power and Public Service Company of New Mexico, which are slated to commence participation in the EIM this spring, host shared resources that are dynamically scheduled into the CAISO balancing authority area and thus, absent the ability to convert to a pseudo-tie, may be subject to the problems that CAISO identified in this filing.

established protocols. Finally, the proposed enforcement mechanisms allowing for suspension, investigation, and termination, will help safeguard against potential resource owners inflating their bid cost recovery payments.

20. Though we note that CAISO's proposal is an incremental step towards a more sophisticated and comprehensive model for shared resources, we nonetheless agree with CAISO that the provisions that it proposes here are an improvement over the status quo, address immediate stakeholder needs, and provide a sufficient basis upon which to refine the framework. Altogether, we find that these provisions reasonably manage potential technical and transactional issues, allow for some operational flexibility on the side of the participating resource owners, and enable a reasonable framework to incorporate shared resources under a pseudo-tie arrangement.

The Commission orders:

CAISO's proposed tariff revisions are accepted effective January 30, 2021, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.