

128 FERC ¶ 61,131
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Sudeen G. Kelly, Marc Spitzer,
and Philip D. Moeller.

California Independent System Operator
Corporation

Docket No. ER09-1281-000

ORDER ON TARIFF REVISIONS

(Issued August 4, 2009)

1. On June 5, 2009, the California Independent System Operator Corporation (CAISO) filed revisions to its tariff to modify certain language in Appendix C that describes the calculation of locational marginal prices.¹ Specifically, the CAISO's tariff revisions specify that the CAISO has the flexibility to use a distributed generation reference bus in calculating the marginal cost of energy as a backstop measure in cases where the integrated forward market cannot clear using a distributed load reference bus. As discussed below, the Commission conditionally accepts the tariff revisions, effective June 6, 2009.

I. The CAISO's Filing

2. The CAISO's Market Redesign and Technology Upgrade (MRTU) tariff is based on locational marginal prices as the method of financial settlement in the CAISO electric markets. Locational marginal prices consist of three components: the marginal cost of energy; the marginal cost of congestion; and the marginal cost of losses.² The combination of these three components represents the market-clearing locational marginal price for each node on the CAISO's system. The tariff revisions submitted in this docket address the calculation of the marginal cost of energy component under the MRTU tariff.

¹ Subsequently, on June 9, 2009, the CAISO submitted an executed signature page to accompany the declaration of Mark Rothleder that had been omitted at the time of the original filing.

² CAISO transmittal letter at 2.

3. The CAISO states that because transmission losses are not known before determining the least cost solution for its market, the marginal cost of energy component is developed by using a reference bus to absorb any positive or negative power mismatches.³ The reference bus can be either a single node or a set of nodes on the CAISO system. Where a set of nodes is utilized, it is referred to as a distributed reference bus. According to the CAISO, the marginal loss and congestion components are zero at the reference bus and the locational marginal price at the designated reference bus becomes the marginal energy cost for the whole system.⁴ Marginal loss and congestion components are then determined relative to the reference bus in calculating locational marginal prices for those other nodes.

4. The CAISO states that there are two ways to implement the distributed reference bus methodology in calculating the marginal cost of energy component of locational marginal prices. One way is by utilizing a distributed load reference bus and the other is by using a distributed generation reference bus. In using a distributed load reference bus method, the reference bus is a set of load nodes on the CAISO's system. In using a distributed generation reference bus, the reference bus is a set of generation nodes on the system.⁵ Whether a distributed load reference bus or a distributed generation reference bus is employed, the purpose of the reference bus is the same, to establish the marginal cost of energy for all nodes of the CAISO's system.⁶

5. The CAISO states that the current MRTU tariff provides that the CAISO use a distributed load reference bus in calculating the marginal energy cost component of locational marginal prices.⁷ The CAISO further states that during factory testing of MRTU software, it became aware that under certain circumstances, the software was unable to successfully clear the integrated forward market using a distributed load reference bus. The CAISO states that the reasons for the failure were not immediately apparent.⁸ As a result, the CAISO states that it adjusted the MRTU software to utilize a distributed generation reference bus, pending a solution to the problem associated with the distributed load reference bus. The CAISO also modified section 3.2.1 of its business

³ *Id.*

⁴ *Id.*

⁵ *Id.*

⁶ *Id.*

⁷ *Id.* at 3, citing MRTU tariff, Appendix C, Part B.

⁸ *Id.*

practice manual for market operations to include language indicating that the CAISO has the flexibility to use a distributed generation reference bus in the integrated forward market. The CAISO states that it did not seek to modify the tariff provision specifying that the CAISO will only use a distributed load reference bus.⁹

6. The CAISO asserts that on May 22, 2009 it implemented software enhancements that mitigate the software problem resulting in an occasional inability to reach a market solution in the integrated forward market using a distributed load reference bus.¹⁰ Further, the CAISO contends that it is reasonably confident that, due to the May 22, 2009 software enhancement, it will be able to clear the integrated forward market using a distributed load reference bus. Nevertheless, the CAISO states it believes that it is prudent to revise the CAISO's tariff to provide that it may use a distributed generation reference bus as a backstop measure if necessary.

II. Notice of Filings and Responsive Pleadings

7. Notice of the June 5, 2009 filing was published in the *Federal Register*, 74 Fed. Reg. 28685, with interventions or protests due on or before June 26, 2009. Notice of the June 9, 2009 filing was published in the *Federal Register*, 74 Fed. Reg. 29201, with interventions or protests due on or before June 30, 2009.

8. Modesto Irrigation District, the Metropolitan Water District of Southern California, Pacific Gas and Electric Company (PG&E) and the City of Santa Clara, California, the California Department of Water Resources, State Water Project, the Northern California Power Agency and the M-S-R Public Power Agency filed timely motions to intervene. Southern California Edison Company (SoCal Edison), the United States Department of Energy (DOE), and the Sacramento Municipal Utility District (SMUD) filed timely motions to intervene and comments. The Western Area Power Administration (Western) filed a timely motion to intervene and protest. The California Public Utilities Commission (CPUC) filed a motion to intervene out of time on July 1, 2009. The CAISO filed a motion for leave to answer and answer to comments and protests.

⁹ *Id.*

¹⁰ *Id.*

III. Discussion

A. Procedural Matters

9. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2009), the timely, unopposed motions to intervene serve to make the parties that filed them parties to this proceeding. Given its interest in this proceeding, the early stage of the proceeding and the absence of any undue prejudice or delay, we will grant the late-filed intervention of the CPUC. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 213(a)(2) (2009), prohibits an answer to a protest or another answer unless otherwise ordered by the decisional authority. We will accept the answer filed by the CAISO because it provided information that assisted us in our decision-making process.

B. Substantive Matters

1. Protest and Comments

10. In its protest, Western¹¹ states that the CAISO has failed to provide sufficient evidence to demonstrate that the CAISO's proposed tariff revisions are just and reasonable. Western notes that the CAISO states that the impacts from using a distributed generation reference bus will be expected to have a *de minimis* impact on market outcomes when compared to the volume of sales and purchases occurring on the CAISO's markets on a daily basis. Western does not directly challenge the CAISO's position, but states that substituting a distributed generation reference bus in place of a distributed load reference bus will have an impact on the constituent components of locational marginal prices, i.e., congestion and marginal losses.¹²

11. Western states that while there may be a *de minimis* impact on the overall locational marginal prices at the load aggregation points, the CAISO has not provided any data by which the Commission or market participants can evaluate the frequency and magnitude of impacts on individual market participants, potentially caused by the impacts on constituent components of locational marginal prices.¹³ Western points out that because marginal losses and congestion at each node are calculated relative to the reference bus, changes to the reference bus will necessarily result in changes to calculated

¹¹ In its comments, SMUD states that it supports Western's protest and requests that the Commission adopt the recommendations made by Western.

¹² Western protest at 3.

¹³ *Id.* at 3-4.

marginal losses and congestion at other nodes.¹⁴ Similarly, in its comments, the DOE states that the CAISO's filing lacks sufficient information for the DOE to assess the potential impact of the proposed changes, and therefore the DOE is unable to conclude that the proposed tariff revisions are reasonable and in the public interest.

12. Western states that the only substantive data provided by the CAISO is the data for the load aggregation points of PG&E, SoCal Edison and San Diego Gas and Electric Company. Western states that, at a minimum, the Commission should require the CAISO to provide data of corresponding parallel side-by-side runs that show the differences in locational marginal prices (and their constituent components) between a distributed generation reference bus and a distributed load reference bus, as well as the financial impacts resulting from those differences.¹⁵

13. Western also states that the CAISO's statement that the integrated forward market will normally clear using the distributed load reference bus is not supported by any data. Thus, Western states that parties have no way of knowing how frequently the CAISO will be forced to rely on a distributed generation reference bus.¹⁶ Western states that the Commission should require the CAISO to provide more information and thoroughly analyze the potential frequency before approving the CAISO's proposed tariff revisions.

14. Western states that the CAISO has acknowledged that it violated its tariff when it started MRTU.¹⁷ Western states that the CAISO indicated in its filing that the CAISO determined that it would use a distributed generation reference bus in the integrated forward market when it first began operating the MRTU markets, even though the CAISO's tariff required the use of a distributed load reference bus.¹⁸ According to Western, the CAISO has admitted violating its tariff in this regard for the first 16 days of MRTU operation and on four occasions since April 17, 2009. Western states that the Commission should institute an investigation to determine whether the CAISO's unapproved actions harmed market participants.

15. SoCal Edison states that it is generally supportive of the CAISO's proposed tariff revisions. SoCal Edison also acknowledges that it is appreciative of the CAISO's tariff language clarifying the load distribution factors that the CAISO will use, as well as the

¹⁴ *Id.* at 4.

¹⁵ *Id.* at 5.

¹⁶ *Id.* at 6.

¹⁷ *Id.*

¹⁸ *Id.*, citing CAISO transmittal letter at 1 and Exhibit No. ISO-1 at 7, 9-10.

clarification that the CAISO will only use a distributed generation reference bus as a backstop in the integrated forward market.

16. However, SoCal Edison states that it requests additional transparency. SoCal Edison requests that the Commission require the CAISO to publish the load distribution factors that were used to solve each of the integrated forward market, the residual unit commitment market, the hour-ahead scheduling process and the real-time market. SoCal Edison asserts that without the release of the load distribution factors, market participants are unable to either verify the calculation of the reference bus or validate and verify the CAISO's published prices. SoCal Edison states that it views the release of the load distribution factors as being critical for market participant evaluation and validation of CAISO market results.¹⁹

17. SoCal Edison requests that the Commission require the CAISO to release the load distribution factors used in the integrated forward market prior to running the market for a given day. SoCal Edison also requests that the Commission require the CAISO to release the load distribution factors used for the residual unit commitment, hour-ahead scheduling process and real-time markets one day after the operating day.

2. The CAISO's Answer

18. In response to Western's protest, the CAISO states that Western's argument regarding a lack of sufficient data to demonstrate the justness and reasonableness of the tariff revision is flawed for several reasons.²⁰ First, the CAISO asserts that one of its primary responsibilities is to avoid serious disruptions to the markets and threats to the reliable operation of the grid, which would result in overall higher market costs. Thus, the CAISO argues that it is imperative that the CAISO retain operational flexibility to clear the market using a distributed generation reference bus in those situations where the integrated forward market will not clear using a distributed load reference bus.

19. Second, the CAISO states that, in providing data that clearly show the price impacts of using a distributed generation reference bus versus a distributed load reference bus at the load aggregation point level, it has sufficiently demonstrated that the price impacts would be minimal.²¹ Moreover, the CAISO contends that the granular, node-specific data that Western requests would be of limited value because the financial outcomes of an entity scheduling at a specific node or set of nodes would fluctuate

¹⁹ SoCal Edison comments at 2-3.

²⁰ CAISO answer at 3.

²¹ *Id.* at 4.

depending on different system circumstances. Specifically, the CAISO points out that the same entity may experience positive or negative financial results under different system conditions, and therefore the data would be of little analytical value.²²

20. Third, the CAISO states that conducting a more granular analysis as Western requests would be very burdensome.

21. Finally, the CAISO contends that with the recent software improvements, the CAISO has no reason to think the distributed load reference bus approach will fail to clear the integrated forward market, and states that the ability to use a distributed generation reference bus would merely be a prudent backstop measure to ensure that the CAISO has the authority to clear the integrated forward market if system circumstances require it.²³ Therefore, the CAISO states that, based on the above arguments, Western's request is unnecessary to demonstrate the justness and reasonableness of the proposed tariff revisions.

22. In response to Western's argument that, because the CAISO knowingly violated its tariff and utilized a distributed generation reference bus for the first 16 days of operation and on four occasions since, the Commission should initiate an investigation into whether market participants were harmed, the CAISO states that Western's request is beyond the scope of this filing.²⁴ The CAISO asserts that this proceeding concerns only the prospective authority of the CAISO to use a distributed generation reference bus as a backstop mechanism, and that it ultimately is a decision of the Commission's enforcement staff whether to execute a further investigation.

23. Similarly, in response to SoCal Edison's request that the Commission direct the CAISO to publish the load distribution factors that the CAISO uses to determine the distributed load reference bus, the CAISO avers that this request is outside the scope of this proceeding and would be more appropriately raised in another forum.²⁵ In addition to the preceding argument, the CAISO contends that posting actual load distribution factors could harm market participants due to the market-sensitive nature of the information. Specifically, the CAISO states that the publishing of this data could reveal individual participants' loading levels on an hourly basis.²⁶ Further, the CAISO

²² *Id.*

²³ *Id.* at 5.

²⁴ *Id.*

²⁵ *Id.* at 6-7.

²⁶ *Id.* at 7.

maintains that even if this concern could be mitigated, there are practical challenges involved in such a request, in that it would require the CAISO to modify its open access same-time information system to publish what is a large volume of data on an hourly and daily basis for use in real-time. Thus, the CAISO objects to SoCal Edison's request and states that it would be inappropriate for the Commission to order the CAISO to release the load distribution factor data in connection with the instant proceeding.

3. Commission Determination

24. The Commission finds the use of a distributed generation reference bus in the limited manner proposed by the CAISO to be reasonable. We reject Western's argument that, without more granular data by which market participants can determine the effect of using a distributed generation reference bus on individual market participants, the CAISO has failed to meet its burden of proof to demonstrate that its proposed tariff revisions are just and reasonable. First, the simple lack of granular data does not inherently render the CAISO's proposal unjust and unreasonable. While infrequently using a distributed generation reference bus as an alternative may have different financial impacts on market participants, the record before us indicates that the overall market effects are likely to be minimal, when taken in the context of the volume of sales and purchases conducted in the CAISO markets on a daily basis.

25. Second, there are extensive benefits to all market participants from allowing the CAISO to employ a distributed generation reference bus to clear the integrated forward market in the critical situation when the distributed load reference bus fails to clear the integrated forward market. If and when the distributed load reference bus fails to clear the integrated forward market, the CAISO will not have a market solution for that day and will not be able to establish energy prices without an alternative market mechanism such as the distributed generation reference bus method. In such case, the CAISO states that it would be required to take other measures such as falling back to the prior day's market results or conducting a number of exceptional dispatches and commitments to meet its day-ahead requirements.²⁷ These alternative non-market measures would be undesirable options for market participants, both financially and otherwise. Additionally, no party has explicitly objected to this alternative or suggested another remedy. Accordingly, we accept the CAISO's proposed backstop mechanism as a viable market solution to correct for an unacceptable situation.

26. Third, the CAISO maintains that it does not anticipate having to rely on using a distributed generation reference bus in the future, based on system software improvements. The CAISO's proposed tariff revisions limit the authority to use a distributed generation reference bus on a going forward basis to only those rare

²⁷ CAISO filing, Exhibit No. ISO-1 at 12.

circumstances in which the CAISO is unable to clear the integrated forward market under the distributed load reference bus. Thus, the low probability that the CAISO's integrated forward market will not clear with the addition of the May 22, 2009 software upgrade mitigates the concerns raised by Western and DOE.

27. However, while we find the CAISO's proposal to be acceptable, we will require one modification to its proposed tariff sheets. The CAISO states that, in the event that it employs a distributed generation reference bus, it will notify market participants of which integrated forward market runs required the use of this backstop mechanism. We agree that notifying market participants is a prudent approach. However, the CAISO has failed to include this provision in the instant tariff filing. Therefore, we direct the CAISO to include this provision in its tariff in a compliance filing, to be filed no later than 30 days after the date of this order. In addition, we direct the CAISO to post on its website an informational report detailing the nodal pricing ramifications resulting from the use of a distributed generation reference bus in clearing the integrated forward market after every use of the backstop provision. Such report should provide information similar to the summary information illustrating the effects of using the backstop provision on a nodal basis provided with the CAISO's filing in this proceeding.²⁸

28. In regard to the protest by Western that the CAISO violated its tariff and thus the Commission should initiate an investigation to determine whether the unauthorized actions by the CAISO harmed market participants, the primary purpose of this proceeding is to determine whether the CAISO's proposed tariff revisions are just and reasonable. The Commission has determined that the CAISO's tariff revisions are just and reasonable because of the benefits that accrue to all market participants from allowing the CAISO to employ a distributed generation reference bus in the instances in which it is unable to clear the integrated forward market using a distributed load reference bus, along with the minimal overall market effects. Based on these findings, we conclude that the current proceeding is not the appropriate forum in which to decide whether the Commission should initiate an investigation of the potential harm from the CAISO's past use of a distributed generation reference bus. Whether it is appropriate to take any further action will be considered separately. Nevertheless, we remind the CAISO that the Federal Power Act (FPA) specifically requires that all of its rates and charges, as well as classifications, practices and regulations affecting rates and charges be filed with the Commission and that any proposed change to those rates, charges, classifications, practices and regulations only be made effective after filing with the Commission and upon sixty days' notice unless otherwise ordered by the Commission.²⁹

²⁸ See Exhibit ISO-1 at 13-14.

²⁹ FPA section § 205(c) and (d), 16 U.S.C. § 824d(c) and (d) (2006).

29. Finally, we agree with the CAISO that SoCal Edison's request that the Commission require the CAISO to publish the load distribution factors that the CAISO uses to determine the distributed load reference bus is outside the scope of the instant proceeding. As noted by the CAISO, it does not propose to modify any aspect of how it will use load distribution factors to calculate the reference bus, and therefore we find that this issue would be more appropriately handled in another forum. Therefore, we deny SoCal Edison's request.

The Commission orders:

(A) The CAISO's tariff revisions are hereby accepted, effective June 6, 2009.

(B) The CAISO is hereby directed to submit a compliance filing, within 30 days of the date of this order, as discussed in the body of the order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.