

158 FERC ¶ 61,085
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Cheryl A. LaFleur, Acting Chairman;
Norman C. Bay, and Colette D. Honorable.

California Independent System
Operator Corporation

Docket No. ER17-415-000

ORDER ACCEPTING TARIFF REVISIONS

(Issued January 30, 2017)

1. On November 23, 2016 (November 23 Filing), the California Independent System Operator Corporation (CAISO) filed, pursuant to section 205 of the Federal Power Act (FPA),¹ revisions to its tariff to implement a revised administrative pricing policy and clarify those provisions that apply to emergency operations. In this order, we accept the proposed tariff revisions, effective February 1, 2017, as requested.

I. Background

2. CAISO operates both day-ahead and real-time markets for energy and energy-related products and services. As part of the real-time market, CAISO conducts a 15-minute market throughout the operating day and issues five-minute real-time dispatch instructions. CAISO explains that in normal circumstances, the day-ahead market produces hourly schedules and awards, and the real-time market produces 15-minute schedules and awards and five-minute dispatches. According to CAISO, all of these outcomes of CAISO's market produce prices.²

3. CAISO manages system emergencies and other abnormal system conditions affecting its markets pursuant to section 7.7 of its tariff (Management of Abnormal System Conditions). Existing tariff section 7.7.4 sets forth a process under which CAISO may intervene in the operation of any of its markets and apply an administrative price if

¹ 16 U.S.C. § 824d (2012).

² November 23 Filing at 2.

CAISO determines that such intervention is necessary to prevent, contain, or correct a system emergency. The CAISO tariff defines a system emergency as conditions beyond the normal control of CAISO that affect the ability of the CAISO balancing authority area to function normally, including any abnormal system condition that requires immediate or automatic action to prevent loss of load, equipment damage, or tripping of system elements that may result in cascading outages or to restore system operation to meet applicable reliability criteria.³ CAISO's tariff defines the administrative price as the price set by CAISO in place of a locational marginal price when, by reason of a system emergency, CAISO determines that it no longer has the ability to maintain reliable operation of the CAISO-controlled grid relying solely on the economic dispatch of generation.⁴ Existing tariff section 7.7.4 sets the administrative price for each of the markets at the applicable price from the settlement period immediately preceding the settlement period in which the intervention took place.⁵

4. Pursuant to existing tariff section 7.7.15.1(f), CAISO may also use administrative pricing to prevent a market disruption or, if a market disruption occurs, to minimize the extent of a market disruption. The existing tariff defines a market disruption as an action or event that causes a failure of a CAISO market, related to system operation issues or system emergencies referred to in existing tariff sections 7.6 (which concerns normal system operations) or 7.7, respectively.⁶ CAISO explains that market disruptions are generally of short duration, i.e., limited to a few five-minute intervals or, in the case of a planned disruption to take actions such as implementing a software patch or performing software maintenance, an hour or two. CAISO notes that in contrast, full market suspension has occurred only once – during the September 2011 power outage in the southwestern United States.⁷ CAISO explains that market suspensions can occur under

³ CAISO Tariff, Appendix A, existing definition of “System Emergency.”

⁴ CAISO Tariff, Appendix A, existing definition of “Administrative Price.”

⁵ November 23 Filing at 2-3.

⁶ CAISO Tariff, Appendix A, existing definition of “Market Disruption.”

⁷ The September 2011 power outage resulted from the tripping of the Southwest Power Link transmission line. The Southwest Power Link is a 500 kV transmission line that runs from the Palo Verde/Hassayampa Substation in Arizona to the Miguel Substation in San Diego County, California, and is the major source of imported power for the San Diego Gas & Electric Company's (SDG&E) service territory. On September 8, 2011, the Hassayampa-North Gila segment of the Southwest Power Link tripped, which in turn caused a large number of generators to trip. As a result, approximately 2.78 million end-use customers lost service, representing approximately

(continued...)

two scenarios. In the first scenario, the market could fail as a result of a catastrophic software failure. The second scenario occurs when the market results are of such poor quality that system operations cannot rely on them for reliable operation of the grid.⁸

5. Other subsections in existing tariff section 7.7 address matters related to managing system emergencies and other abnormal system conditions, including CAISO's notifications to market participants of system conditions, emergency guidelines, periodic tests of emergency procedures, under-frequency load shedding, use of load curtailment programs, and system emergency reports and sanctions. CAISO explains that these tariff provisions have proven difficult to interpret and apply due to redundancies and unnecessary provisions.⁹

II. CAISO Filing

6. CAISO's proposed tariff revisions implement a new administrative pricing policy that is applicable when market prices are not available for any reason.¹⁰ According to CAISO, the revised provisions provide greater transparency. In addition, CAISO also proposes to reorganize, streamline, and clarify its emergency tariff provisions to improve their readability and logical flow. CAISO indicates that the proposed tariff revisions generally stem from lessons learned following the September 2011 power outage in the southwestern United States.¹¹

A. Enhancements to Administrative Pricing Provisions

7. CAISO proposes to add new tariff section 7.7.9 to set forth how it will determine the administrative prices for the day-ahead market or real-time market to manage an

7,900 MW of load within the service territories of SDG&E and several neighboring balancing authority areas. *See Cal. Indep. Sys. Operator Corp.*, Petition for Waiver of Tariff Provisions, Docket No. ER12-205-000 at 2 (filed Oct. 26, 2011).

⁸ November 23 Filing, Attachment D at 17.

⁹ *Id.* at 3-4.

¹⁰ CAISO explains that an example where this may be necessary is if a software issue results in a complete failure to clear the market and post results for the day. *Id.*, Attachment D at 12.

¹¹ *Id.* at 1-2.

imminent or actual system emergency or to prevent, manage, or minimize the extent of a market disruption.¹²

1. Day-Ahead Market

8. In the case of a suspension of the day-ahead market, CAISO proposes to use the market results from the previous day's day-ahead market to the extent it determines that such market results will provide a reasonable profile of schedules to meet the needs of the real-time market. If, however, CAISO determines – at its discretion – that using the previous day's day-ahead market results will not reasonably meet the needs of the real-time market,¹³ it may rely on real-time market results and on manual actions such as exceptional dispatches, as applicable, for pricing and settlement purposes.¹⁴

9. CAISO indicates that its preference is to use the previous day's market results from the day-ahead market in the event of suspension. CAISO explains that there are several reasons for this preference. First, using the previous day's market results mitigates against the worst-case scenario in which the real-time market might also need to be suspended. Second, using the previous day's market results provides CAISO with a starting point for dispatch and settlement, while the real-time market can provide the incremental or decremental differences between the day-ahead and the real-time, thereby minimizing the need for CAISO to issue manual dispatch instructions. Third, using the previous day's market results allows market participants to know in advance their market results for the applicable trading day, which CAISO states minimizes uncertainty and allows market participants to secure fuel and prepare their resources for unit commitment.¹⁵

¹² CAISO experiences minor market disruptions in the real-time market due to software maintenance issues or unexpected software issues, which occur under normal and non-emergency situations. *Id.*, Attachment D at 11.

¹³ CAISO notes that, for example, if the day-ahead market was suspended on a Monday, using the load profile from Sunday may not properly reflect the needs of the real-time market on Monday. *Id.*, Attachment D at 12.

¹⁴ *Id.* at 6-8.

¹⁵ *Id.* at 9.

2. Real-Time Market

10. With respect to the real-time market, CAISO proposes to modify the existing tariff rule that states that CAISO will apply an administrative price for imbalance energy and ancillary services at the applicable price in the settlement period immediately preceding the settlement period in which CAISO's market intervention took place. According to CAISO, always applying the administrative price based on the immediately preceding settlement period may not provide the correct price signal when system conditions change from hour to hour. As discussed below, CAISO proposes what it describes as a more accurate and nuanced approach to apply the administrative price based on whether or not the real-time market has been suspended.¹⁶

a. Tariff Rules that Apply When the Real-Time Market Has Not Been Suspended

11. If a market disruption of the real-time market occurs when the real-time market has not been suspended, CAISO proposes to use three pairs of tariff rules, described below, to apply the administrative price according to the number of consecutive intervals during which market results are unavailable. CAISO asserts that this approach strikes a just and reasonable balance among the following considerations: preserving price signals; providing price certainty; and practicality. In addition, CAISO notes that this approach is comparable to the existing approaches used by the Midcontinent Independent System Operator, Inc. and PJM Interconnection, L.L.C.¹⁷

12. The first pair of tariff rules concerns relatively brief events not involving a market suspension while the second and third pairs of tariff rules concern more prolonged events not involving a market suspension. The first pair of market rules will be applied in instances where market results are unavailable for fewer than four consecutive 15-minute intervals in the 15-minute market, CAISO proposes to use the 15-minute market results, as applicable, for the 15-minute interval immediately preceding the 15-minute market interval(s) for which 15-minute market results are unavailable. To the extent prices are unavailable for fewer than 12 consecutive five-minute dispatch intervals, CAISO proposes to use the real-time dispatch market results, as applicable, for the dispatch interval immediately preceding the dispatch interval(s) for which market results are unavailable. CAISO claims that these two tariff rules provide a clear and straightforward means for it to preserve the price signals from the immediately preceding intervals and

¹⁶ *Id.* at 10.

¹⁷ *Id.*

provide price certainty for the market.¹⁸

13. The second pair of rules apply when market results are unavailable for intervals in the 15-minute market but are available for the real-time dispatch, or when the converse is true. Specifically, if market results are unavailable for at least four consecutive 15-minute intervals in the 15-minute market, but market results are available for the real-time dispatch during those 15-minute market intervals, CAISO proposes to use the average of real-time dispatch market results, as applicable, during each such 15-minute market interval and use the market results as applicable from the prior intervals for which market results are unavailable as needed. If market results are unavailable for at least 12 consecutive five-minute dispatch intervals, but market results are available for the 15-minute market during those dispatch intervals, CAISO proposes to use the 15-minute market results, from the applicable 15-minute market during the dispatch intervals. CAISO contends that applying administrative prices in this manner will reduce price risk and enhance price certainty for market participants with regard to differences in imbalance energy charges between the 15-minute market and the five-minute real-time dispatch market.¹⁹

14. The third pair of tariff rules will apply when market results are unavailable during relatively prolonged intervals for both the 15-minute market and the real-time dispatch. Specifically, if market results are unavailable for at least four consecutive 15-minute intervals in the 15-minute market and for the real-time dispatch during those 15-minute market intervals, CAISO proposes to use the day-ahead market results, as applicable, for the corresponding trading hour for which market results are unavailable. If market results are unavailable for at least 12 consecutive five-minute dispatch intervals and for the 15-minute market during those dispatch intervals, CAISO proposes to use the previous day's day-ahead market results, as applicable, for the corresponding trading hour for which market results are unavailable. CAISO contends that applying administrative prices in this manner will provide price certainty and transparency for market participants because they will already know the previous day's day-ahead market results. Also, CAISO believes that this approach will minimize market participants' potential exposure to imbalance energy charges between the day-ahead and real-time markets and the 15-minute market and the five-minute real-time dispatch market.²⁰

¹⁸ *Id.* at 11.

¹⁹ *Id.* at 11-12.

²⁰ *Id.* at 12-13.

15. CAISO notes that some market participants expressed a preference for continuing to use the last available price to establish administrative prices in all circumstances. However, CAISO believes that using the last available price is a good pricing approach where there are small numbers of missing intervals, so that prices are relatively fresh and from an interval that would not likely have significant market differences. Therefore, CAISO proposes to use this as its default administrative price approach in the event none of the other circumstances described in the newly proposed tariff section 7.7.9 apply or if the market results are otherwise unavailable.²¹

b. Tariff Rules that Apply When the Real-Time Market Has Been Suspended

16. CAISO indicates that if the real-time market has been suspended, it will use the previous day's day-ahead market results, as applicable, for the trading hour corresponding to the trading hour during which the real-time market has been suspended. According to CAISO, applying the day-ahead market results in this manner will minimize any settlement implications because CAISO will settle deviations of resources between the day-ahead market and the real-time market at a price difference of zero. According to CAISO, it will also provide price certainty and transparency to market participants because they will already know the day-ahead market price for the corresponding trading hour.²²

3. Energy Imbalance Market

17. In tandem with adding the new administrative pricing provisions in new tariff section 7.7.9, as discussed above, CAISO proposes to revise its existing tariff provisions regarding the actions the CAISO may take if it declares an interruption of participation by an Energy Imbalance Market (EIM) entity in the real-time market.²³ Pursuant to the proposed tariff revisions, CAISO may use market results in the real-time market in accordance with section 7.7.9 except that if section 7.7.9 requires the use of day-ahead market results, CAISO will use: (i) the price specified in the EIM entity's open access transmission tariff as the locational marginal price; (ii) the EIM entity's EIM base

²¹ *Id.* at 13.

²² *Id.* at 13-14.

²³ An EIM Entity is a Balancing Authority that represents one or more EIM Transmission Service Providers and that enters into an EIM Entity Agreement with the CAISO to enable the operation of the Real-Time Market in its Balancing Authority Area. CAISO Tariff, Appendix A, existing definition of "EIM Entity."

schedule as the schedule; (iii) the EIM bid adder from the most recent corresponding interval that is available as the EIM bid adder; and (iv) the emissions rate set by the California Air Resources Board for an unspecified source multiplied by the daily greenhouse gas allowance price as calculated under the tariff. According to CAISO, this exception is necessary because there are no day-ahead prices in the EIM.²⁴

B. Other Clarifications

18. CAISO states that it is also proposing to clarify its provisions for handling abnormal system conditions by reordering the tariff provisions in a more logical sequence, employing more uniform terminology, eliminating duplicative and unnecessary provisions, and correcting grammatical and typographical errors.²⁵ In addition, CAISO proposes to clarify that in the event of an “uncontrollable force,” a market participant is not held harmless from the financial consequences of binding market results.²⁶

19. Finally, CAISO requests that the Commission accept the proposed tariff revisions effective as of February 1, 2017.²⁷

III. Notice of Filing and Responsive Pleadings

20. Notice of CAISO’s filing was published in the *Federal Register*, 81 Fed. Reg. 86,709 (2016), with interventions and protests due on or before December 14, 2016. Timely motions to intervene were filed by the City of Santa Clara, California; Modesto Irrigation District; Northern California Power Agency; NRG Power Marketing LLC and GenOn Energy Management; Pacific Gas and Electric Company; and Powerex Corp. The Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (Six Cities) filed a timely motion to intervene and protest. CAISO filed an answer on December 21, 2016.

IV. Six Cities’ Comments and CAISO’s Answer

21. Six Cities states that it generally supports CAISO’s filing with one exception. Specifically, when the day-ahead market is suspended, Six Cities supports CAISO using day-ahead outcomes from the previous day. However, Six Cities opposes CAISO having

²⁴ *Id.* at 15.

²⁵ *Id.* at 17.

²⁶ *Id.* at 19.

²⁷ *Id.* at 20.

the discretion to rely on the real-time market results if the day-ahead market results for the previous day will not meet real-time needs, when the day-ahead market is suspended. According to Six Cities, having two alternatives does not result in either certainty or transparency because the proposed tariff revision does not provide clear criteria for CAISO's selection of which administrative pricing approach to apply, but rather leaves it entirely to CAISO's discretion to either apply the outcomes from the day-ahead market for the previous day or rely on real-time market outcomes. Accordingly, Six Cities asserts that the second alternative giving CAISO the discretion to choose which market results to use should be rejected.²⁸

22. In response, CAISO contends that Six Cities ignores the fact that the current CAISO tariff requires CAISO to rely solely on the real-time market when the day-ahead market is suspended and that CAISO is proposing to amend the tariff to add the alternative (supported by Six Cities) that would allow CAISO to rely on the prior day's day-ahead market results. As such, CAISO argues, Six Cities objects to an existing option that CAISO is not proposing to eliminate. CAISO also argues that Six Cities had offered no evidence showing that this existing option has been problematic or that changed circumstances make it no longer just and reasonable to use. According to CAISO, the proposed tariff revision, compared with retaining the existing approach, should be more preferable for Six Cities, given its arguments, as CAISO is improving the options available to it.²⁹

23. CAISO provides two examples where it may exercise its discretion. The first example is where the load profile from a Sunday may not be usable on a Monday due to the significant differences between these two days (i.e., because load is significantly lower on weekends). The second example is where the loss of a large generator or a transmission line causes system conditions on a given day to be materially different from the system conditions the next day such that CAISO would have to make substantial adjustments for load and transmission constraints. CAISO contends that while it provides examples of what might justify reliance solely on the real-time market,³⁰ it would be impracticable to try to specify in advance every possible circumstance in which the day-ahead market results from the day prior to the suspension would not reasonably meet the needs of the real-time, thereby compelling CAISO to use the alternative real-time approach. CAISO expects, however, that only rare circumstances will require it to resort to the existing approach. In summary, CAISO explains that it is retaining the

²⁸ Six Cities Protest at 2-4.

²⁹ CAISO Answer at 3.

³⁰ *Id.* at 4.

existing real-time tariff approach while adding the preferred alternative of using the prior day-ahead market results unless extreme circumstances justify the operational decision to rely on the real-time market.³¹

V. Discussion

A. Procedural Matters

24. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2016), the timely, unopposed motions serve to make the entities that filed them parties to this proceeding.

25. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2016), prohibits an answer to a protest 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

26. We find that CAISO's proposed tariff revisions are just and reasonable and therefore will accept them, effective February 1, 2017, as requested. We find that CAISO's proposals enhance its administrative pricing tariff provisions by providing additional clarity with respect to how CAISO will respond to certain market outcomes during emergency or abnormal system conditions or when market results are unavailable.

27. Six Cities expresses concern regarding CAISO's discretion to rely on the real-time market results if the day-ahead market results for the previous day will not meet real-time needs when the day-ahead market is suspended. However, CAISO has provided a reasonable explanation for why it may elect not to use the day-ahead market results from the prior day. As CAISO points out, the load profile from the day-ahead market in the prior day may not always provide a reasonable market outcome in certain circumstances, such as when the CAISO market loses a significant transmission or generation component or when the market is suspended on a Monday and the Sunday load profile will not meet the needs of the real-time market on a Monday.

28. We find that CAISO has provided an adequate explanation for why it should have discretion to use a previous day's day-ahead results or real-time market data in the event of a day-ahead market suspension. While it may not be clear in advance of a market suspension exactly which method CAISO may ultimately choose, it is clear that the intent of CAISO having the discretion to choose is so that load is served and the market results

³¹ *Id.* at 4-5.

in rates that are just and reasonable. If CAISO did not have such discretion during day-ahead market suspensions, it may have to rely on market results that are not representative of system conditions. We find that it is appropriate for CAISO to exercise its discretion in this manner to address these considerations, even if this means that the process under which CAISO determines which approach to take may not be completely predictable under all circumstances.

The Commission orders:

CAISO's proposed tariff revisions are hereby accepted, effective February 1, 2017, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.