



Market Disruption Report September 16, 2023 to October 15, 2023

November 15, 2023

CAISO Market Analysis

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I. Background

A Market Disruption is an action or event that causes a failure of a CAISO Market, related to system operation issues or System Emergencies.¹ Pursuant to Section 7.7.6 of the CAISO Tariff, the California Independent System Operator Corporation (CAISO) can take one or more of several specified actions in the event of a Market Disruption, to prevent a Market Disruption, or to minimize the extent of a Market Disruption. The CAISO reports Market Disruption occurrence in the following circumstances:

- When the CAISO market processes fail to publish, including the Integrated Forward Market (IFM), Residual Unit Commitment (RUC), the Real-Time Market which includes the Hour-Ahead Scheduling Process (HASP), Fifteen Minute Market (FMM), and the Real-Time Dispatch (RTD) processes;
- When the CAISO manually overrides closing the Day-Ahead Market; or
- Any time that the CAISO removes Bids from a CAISO Market to prevent a Market Disruption or to minimize the extent of a Market Disruption.

The Market Disruption report contains the following information:

- The frequency and types of actions taken by the CAISO under Section 7.7.6;
- The nature of the Market Disruptions that caused the CAISO to act, or the Market Disruptions successfully prevented or minimized by the CAISO by taking action, and the CAISO's rationale for taking such actions under Section 7.7.6;
- Information about the Bids (including Self-Schedules) removed under Section 7.7.6 (*i.e.*, megawatt quantity, point of interconnection, specification of the Day-Ahead versus Real-Time Bid, and Energy or Ancillary Services Bid); and
- The CAISO's rationale for its removal of Bids (including Self-Schedules) under Section 7.7.6.²

¹ Section 7.6 and 7.7 of the CAISO Tariff refer to these system operation issues or System Emergencies, respectively. CAISO Tariff, Appendix A, definition of Market Disruption. Capitalized terms not otherwise defined herein have the meanings set forth in the CAISO Tariff.

² *Id.* at P 29 & n.29.

II. Report on Market Disruptions Occurring from September 16, 2023 through October 15, 2023

The CAISO provides a summary of Market Disruptions that occurred from September 16, 2023, through October 15, 2023, in Table 1 and Attachment A below. Attachment A includes an entry for each reportable Market Disruption event and each indicates:

- (1) The date of the Market Disruption;
- (2) The hour and Dispatch Interval when the Market Disruption ended;
- (3) The CAISO Market in which the Market Disruption occurred; and
- (4) A description of the Market Disruption, the nature of any actions taken by the CAISO, the rationale for such actions, and the Market Disruption prevented or minimized because of taking such actions.

For each of the CAISO Markets, Table 1 lists the number of Market Disruptions during the period covered by this report. As shown in Table 1, there were 35 Market Disruptions for the reporting period.

Table 1: Summary of Market Disruption Report

Type of CAISO Market	Market Disruption or Reportable Events
Day-Ahead	
IFM	0
RUC	0
Real-Time	
Fifteen Minute Market Interval 1	2
Fifteen Minute Market Interval 2	0
Fifteen Minute Market Interval 3	1
Fifteen Minute Market Interval 4	3
Real-Time Dispatch	29

The frequency of RTD failures decreased from 53 to 29 compared to the report for the period of August 16, 2023, through September 15, 2023. RTD failures accounted for approximately 83 percent of the Market Disruptions during this reporting period.

On October 9th there were eight RTD interval disruptions due to running Real-Time Contingency Dispatch (RTCD) instead. On October 10th, there were

six (two FMM, four RTD) interval disruptions due to the implementation of a market software patch. On October 3rd, there were five (one DSTUC, two FMM, two RTD) interval disruptions due to a network model promotion.

The CAISO made resources non-participating in RTD due to market failures on the following days – September 16th, September 17th, September 19th, September 21st, September 23rd, September 24th, September 25th, September 26th, September 28th, September 29th, October 1st, October 3rd, October 4th, and October 5th. The resources were made non-participating strictly to resolve the RTD issues and not due to bidding concerns. Different resources were made non-participating for each day.

The CAISO made resources non-participating in FMM due to market failures on the following days – September 19th, September 20th, September 24th, September 25th, and October 1st. The resources were made non-participating strictly to resolve the FMM issues and not due to bidding concerns. Different resources were made non-participating for each day.

Market Disruption for Unique Pricing Feature

The CAISO implemented a feature to ensure unique pricing under a degenerate condition in November 2015, which the CAISO implemented along with other pricing enhancements to improve market efficiency.

Table 2 captured below shows the dates and markets in which the pricing feature was disabled between September 16, 2023, and October 15, 2023. The CAISO enabled the uniqueness feature for all other intervals across all the markets for the timeframe captured in this report.

Table 2: Status of Unique Pricing Feature across Various Markets

The CAISO did not disable its pricing feature between September 16, 2023, and October 15, 2023, and, therefore, there is no data to populate Table 2.

ATTACHMENT A

**California Independent System Operator Corporation
Market Disruption Report
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Table 3: Market Disruptions, Nature of Actions Taken by the CAISO, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions

Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
1	9/17/2023	18	7	RTD	RTD results were blocked and previous solution used.
2	9/22/2023	18	1	RTD	RTD results were blocked and previous solution used.
3	9/25/2023	14	1	RTD	RTD results were blocked and previous solution used.
4	9/25/2023	14	2	RTD	RTD results were blocked and previous solution used.
5	9/26/2023	15	4	FMM	FMM did not run due to implementing a market patch.
6	9/26/2023	15	7	RTD	RTD did not run due to implementing a market patch. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
7	9/26/2023	15	8	RTD	RTD did not run due to implementing a market patch. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).

Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
8	9/26/2023	15	9	RTD	RTD did not run due to implementing a market patch. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
9	10/3/2023	24	1	DSTUC	DSTUC did not run due to network model promotion.
10	10/3/2023	24	3	FMM	FMM did not run due to network model promotion.
11	10/3/2023	24	4	FMM	FMM did not run due to network model promotion.
12	10/3/2023	24	11	RTD	RTD did not run due to network model promotion. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
13	10/3/2023	24	12	RTD	RTD did not run due to network model promotion. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
14	10/4/2023	16	7	RTD	RTD results were blocked and previous solution used.
15	10/7/2023	12	10	RTD	RTD results were blocked and previous solution used.
16	10/9/2023	3	4	RTD	RTD did not run due to RTCD run from loss of generation. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).

Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
17	10/9/2023	3	5	RTD	RTD did not run due to RTCD run from loss of generation. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
18	10/9/2023	3	6	RTD	RTD did not run due to RTCD run from loss of generation. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
19	10/9/2023	11	3	RTD	RTD did not run due to RTCD run from loss of generation. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
20	10/9/2023	11	4	RTD	RTD did not run due to RTCD run from loss of generation. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
21	10/9/2023	11	5	RTD	RTD did not run due to RTCD run from loss of generation. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
22	10/9/2023	11	9	RTD	RTD did not run due to RTCD run from loss of generation. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
23	10/9/2023	11	10	RTD	RTD did not run due to RTCD run from loss of generation. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
24	10/10/2023	15	4	FMM	FMM did not run due to implementing a market software patch.
25	10/10/2023	15	7	RTD	RTD did not run due to implementing a market software patch. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).

Count	Date	Hour	Interval	Market	Nature of Actions, Nature of Market Disruption, Rationale and/or Market Disruption Prevented or Minimized as a Result of such Actions
26	10/10/2023	15	8	RTD	RTD did not run due to implementing a market software patch. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
27	10/10/2023	15	9	RTD	RTD did not run due to implementing a market software patch. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
28	10/10/2023	15	10	RTD	RTD did not run due to implementing a market software patch. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
29	10/10/2023	16	1	FMM	FMM did not run due to implementing a market software patch. The market results for this interval were filled based on the tariff sections 7.7.9 and 29.7(j).
30	10/12/2023	8	9	RTD	RTD results were blocked and previous solution used.
31	10/12/2023	8	11	RTD	RTD results were blocked and previous solution used.
32	10/12/2023	11	4	RTD	RTD results were blocked and previous solution used.
33	10/12/2023	11	5	RTD	RTD results were blocked and previous solution used.
34	10/13/2023	5	3	RTD	RTD results were blocked and previous solution used.
35	10/13/2023	5	4	RTD	RTD results were blocked and previous solution used.

Notes:
Integrated Forward Market (IFM): The Day-Ahead Market run in which the CAISO conducts the market for purchases and sales of Energy for all hours of the next Trading Day based on submitted supply and demand bids, and procures Ancillary Services.
Residual Unit Commitment (RUC): The Day-Ahead Market run in which the CAISO conducts unit commitment of additional resources based on submitted availability bids and the forecast of demand for every hour of the next Trading Day.
Fifteen Minute Market (FMM) Interval 1: The first of four market runs conducted every Trading Hour before the Operating Hour. In this market run, the CAISO conducts the Market Power Mitigation for submitted Bids, which applies to the Real-Time Market processes for the Trading Hour. In this interval the CAISO also procures incremental Ancillary Services from internal resources and dynamic external resources.
Fifteen Minute Market (FMM) Interval 2: The second of four market runs conducted every Trading Hour before the Operating Hour during which the CAISO conducts the HASP. In the HASP, the CAISO conducts the procurement and sale of Energy and Ancillary services from non-dynamic System Resources based on submitted Bids and the CAISO Forecast of CAISO Demand. In this interval. the CAISO also conducts the advisory procurement of incremental Ancillary Services from internal resources and dynamic external resources from T to T+60 minutes and procurement for the Trading Hour.
Fifteen Minute Market (FMM) Interval 3: The third of four market runs conducted every Trading Hour. During this interval, the CAISO commits internal Short-Start and Fast-Start Units for the Time Horizon of T-30 minutes to T+240 minutes. In this interval the CAISO also procures incremental Ancillary Services from internal resources and dynamic external resources for the Trading Hour.
Fifteen Minute Market (FMM) Interval 4: The fourth of four market runs conducted every Trading Hour. This interval is for the Fifteen Minute Market for the T-105 minutes to T+60 minutes time horizon. In this interval, the CAISO also conducts 15-minute Ancillary Service Awards for non-Hourly System Resources, internal resources and dynamic external resources for the Trading Hour.
Real-Time Dispatch (RTD): The five-minute interval of any Operating Hour during which the CAISO conducts the market for Energy based on submitted bids and the CAISO Forecast of CAISO Demand.