

## Market Update Call Meeting Minutes

June 2, 2022<sup>1</sup>

### Agenda

- 1) Updates and Meeting Minutes Review – Jennie Araj
- 2) Weekly Performance Report – Jennie Araj
- 3) Price Correction Reports – Lourdes Hernandez
- 4) Real-Time Market Marginal Congestion Component issue – ISO Team

### Updates

None

### Bi-Weekly Market Performance Report

The ISO posted the bi-weekly market performance report for May 11 through May 24, 2022. During this period, markets were generally quiet. The maximum day-ahead cleared demand was 32,840 MW for the two weeks. The Maximum day-ahead DLAP price was \$194.80/MWh. The reasons for the price excursions in the fifteen-minute and five-minute markets are documented. The ISO will re-post this report when real-time price corrections and administrative prices are completed for trade dates May 17-24.

### Review of the Price Correction Report

During the week of May 9-13, the ISO processed nineteen intervals for price correction due to a data input error and a software defect. During the week of May 16-20, the ISO processed twenty intervals for price correction due to a data input error and a software defect.

### General Questions

None

### Real-Time Market Marginal Congestion Component Issue

The ISO market intervals have observed intermittent issues in the Marginal Cost of Congestion (MCC) component calculation of the Locational Marginal Price (LMP). CAISO market teams along with the software vendor have done an extensive investigation into this topic. One of the key characteristic of this issue is that the issues have been difficult to reproduce. This has limited CAISO's ability to respond to this issue conclusively.

As reproducing the issue has not been successful, we have done a detailed code walkthrough and data flow analysis to identify the potential root cause. We have identified that the problem market instances have a significantly reduced number of shift factor data available at the input of the market optimization engine. This incomplete set of input shift factor data is expected to create inconsistent market results and explains the \$0 MCC calculation. The ISO's efforts have focused on identifying what software code or data interaction is leading to this phenomenon.

---

<sup>1</sup> The California ISO (CAISO) hosts this bi-weekly market update conference call, generally at 10:15AM PST bi-monthly on Thursdays. This call is an opportunity for market participants to ask general questions regarding the market. Please send any questions to [CIDI system](#), which includes questions that have proprietary information and that might be commercially sensitive.

The code and data flow review has not revealed conclusively any specific defect in the software. However, we have two potential areas of improvement which will streamline the dataflow and remove any possibilities of shift factor data being filtered at the front end of the market optimization engine. These changes were implemented in our production system on 5/28 at 2:23 pm Pacific Daylight Time.

In addition to these changes, we have added new logging and monitoring to the engine code to better analyze this software behavior, if it was to occur again.

The ISO is not aware of any additional instances of \$0 MCC since 5/26. While the ISO has taken all identified actions to prevent this software behavior from happening again, we have not been able to pinpoint the exact source of the intermittent \$0 MCC market calculation inconsistency. It is possible that we might see this behavior again in the market. However, we believe that the available monitoring and logging in place to help pinpoint the root cause should this behavior was to surface again.

### Questions on MCC Issue

Q: Does the ISO know how far back this issue was impacting the market?

A: The ISO observed the issue in the real-time market starting on trade date May 17 with the increased number of constraints binding in the market requiring additional shift factor processing. Since trade date May 27, we have not observed this issue.

Q: Is the indicator of this issue a \$0 Marginal Congestion Component?

A: Yes, the issue is a constraint is binding with a non-zero shadow price but the pricing nodes associated with the constraint have \$0 MCC when they should have non-zero MCC.

Q: Will the ISO publish a Technical Bulletin on this issue with details on when this occurred and what nodes were impacted?

A: The ISO will publish the Market Update Call meeting minutes and a Customer Service Notice on May 27, 2022. We do not plan to publish a Technical Bulletin.

Q: Are there specific things market participants can review to determine if this issue is still occurring?

A: Yes, a binding constraint with a non-zero shadow price but the underlying nodes have \$0 MCC on the LMP. For example, a constraint binding for the California Oregon Intertie (COI) nomogram would impact a large number of pricing nodes but if they have \$0 MCC, then this would be a red flag. The ISO is actively monitoring the real-time market for this.

Q: Will there be real-time cost shifting from one area to another due to this issue?

A: We have not performed this analysis. We are actively reviewing the real-time market for issues that require price correction and performing administrative pricing.

Q: Are there pricing nodes more commonly impacted by this issue?

A: No we have not identified a pattern.

Q: Will the corrected and administrative pricing be reflected on the T+9 Statements?

A: There was a processing issue and the prices were not available for trade dates May 17 and May 18 T+9 Statements and this will be corrected for the T+70 statements. The corrected and administrative pricing will be reflected in the May 19 –May 26 T+9 Statements.

Q: Will the real-time LAP pricing also be corrected?

A: Yes, the LAPs are impacted and will be corrected or have administrative pricing applied.

Q: Is this an issue that impacts only the real-time market or does it also impact the day-ahead market?

A: It only impacts the real-time market.