



## Issue Charge

### Five minute dispatch and pricing

#### Problem Statement:

The PJM energy market relies on LMP as the primary price signal. Transparency and consistency in LMP calculations is fundamental to market efficiency and competition. Recent events and subsequent changes to the language describing the process by which PJM calculates LMP have highlighted a lack of transparency and consistency in the process.

Manual 11 describes the real time security constrained economic dispatch and pricing process that PJM uses in the energy market to send dispatch signals to generators and calculate LMPs. PJM manual changes in January 2019 add detail to the process described in Manual 11 Sections 2.7, 2.8 and 2.9.1.<sup>1</sup>

The language and the July 10, 2018, low ACE event that triggered review of the language, raise questions regarding the RT SCED case execution and approval process, who approves the SCED cases, what criteria PJM uses to approve RT SCED cases, and what criteria PJM uses for selecting cases to be used in the Locational Pricing Calculator (LPC).<sup>2</sup> The manual language should include additional detail describing the RT SCED and LPC case execution, selection, and approval processes for market transparency and to ensure efficient market pricing.

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<sup>1</sup> See "Manual 11 Updates," PJM presentation to the Markets Implementation Committee (January 9, 2019). <<https://www.pjm.com/-/media/committees-groups/committees/mic/20190109/20190109-item-01a-manual-11-updates.ashx>>.

<sup>2</sup> See "July 10, 2018, ACE/Frequency Excursion Apparent Cause Analysis Report," PJM presentation to the Operating Committee (September 11, 2018). <<https://www.pjm.com/-/media/committees-groups/committees/oc/20180911/20180911-item-04a-july-10-low-frequency-event-update.ashx>>.

The delay in publishing prices for two intervals on April 8, 2019, raises questions on the price-bounding violation validation checks, the thresholds used, and the timeline for publishing prices. The process is currently described in Manual 11, Section 2.11. The process, thresholds and criteria for revisions should be reviewed and described in full detail in Manual 11 to ensure transparency.

**Issue Source:**

Investigation of the July 10, 2018, low ACE event and PJM's subsequent Manual 11 changes. Delay in publishing prices on April 8, 2019.

**Stakeholder Group Assignment**

MIC

**Key Work Activities**

1. Review and provide education on current RT SCED execution process, including but not limited to the frequency of cases, the target interval of the cases, the number of cases, difference in inputs to cases, solution time frame, use of solution output.
2. Review and provide education on the RT SCED case approval process, the criteria for approval, approval rates, reasons for not approving cases.
3. Review and provide education on the current LPC execution process, including but not limited to the frequency of cases, the inputs used, the target interval of the cases, approval process, solution time frame, and use of solution output.
4. Review and provide education on the criteria for selecting RT SCED cases to be used in LPC.
5. Review and provide education on the criteria for triggering reruns of LPC cases, and LMPs.
6. Review the triggers for price-bounding violations and the timeline of publishing LMPs. Identify potential updates to LMP thresholds and procedures for validation checks and publishing prices. (Manual 11, Section 2.11)
7. Identify areas where manual language does not provide the details about the processes outlined in the areas described above, and draft manual language.
8. Identify metrics for operator actions, including but not limited to biasing in IT SCED, RT SCED and LPC.

9. Identify opportunities and develop market rules for streamlining and improving the processes outlined in the areas described above in order to increase market transparency and efficient market pricing.
10. Review LMP related tariff provisions, FERC orders, PJM manuals, and PJM processes to ensure consistency.

### **Expected Deliverables**

1. Manual language updates that document the current processes and procedures and any new or modified processes regarding the approval of SCED cases, the timing and communication of dispatch signals, the selection of SCED cases for use in the LPC, and related actions.
2. Manual language updates that document processes related to price bounding violations, review of LMPs and ancillary service prices, deadlines for publishing prices (Manual 11, Section 2.11).
3. Updates to PJM tariff and operating agreement as necessary.
4. Education/training course in PJM training program on SCED, LPC, commitment and dispatch, review and publishing of prices.

### **Decision Making Method**

Tier 1 preferred: Consensus on a single proposal

Tier 2: Multiple alternatives

### **Expected Overall Duration of Work**

The MMU expects this work effort can be completed in 12 months. High priority issue, start immediately, with monthly meetings.