

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

PJM Interconnection, L.L.C.)	
)	Docket No. ER21-1919-000
)	

COMMENTS OF THE INDEPENDENT MARKET MONITOR FOR PJM

Pursuant to Rule 211 of the Commission’s Rules and Regulations,¹ Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor (“Market Monitor”) for PJM Interconnection, L.L.C. (“PJM”),² submits these comments in response to the filing submitted by PJM Interconnection, L.L.C. (“PJM”) on May 17, 2021 (“May 17th Filing”). The May 17th Filing proposes revisions to the PJM market rules intended to enhance the match between PJM dispatch and pricing for resources. The Market Monitor supports the May 17th Filing and recommends that it be approved.

I. BACKGROUND

A. PJM’s Five Minute Real-Time Energy Market.

PJM’s real-time market for energy and ancillary services defines prices, and settles energy and ancillary services on a five minute basis. However, the current dispatch process is inconsistent with a five minute market. For example, the ramp time (time it takes to get to the target MW output) used in PJM’s real-time dispatch tool, the Real-Time Security

¹ 18 CFR § 385.211 (2020).

² Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff (“OATT”), the PJM Operating Agreement (“OA”) or the PJM Reliability Assurance Agreement (“RAA”).

Constrained Economic Dispatch (RT SCED), is 10 minutes. PJM approves RT SCED cases every five minutes and sends corresponding new dispatch signals every five minutes while the dispatch signals are based on a 10 minute ramp for generating units. This means that resources never have the opportunity to achieve their target dispatch, while the prices are calculated assuming that they do.

The short term changes implemented by PJM on October 15, 2020, actually exacerbated inconsistencies in the dispatch and pricing process.^{3 4} The July 31st Filing created a systematic delay in the dispatch instructions reflected in prices that undermines the incentive to follow dispatch.⁵ As a result, PJM's current process does not meet the Order No. 825 goals to align dispatch and settlement intervals.⁶

PJM's current dispatch and pricing process also makes ineffective the dispatch differential lost opportunity cost that will be implemented with fast start pricing. Under fast start pricing, if not corrected, the misalignment would weaken the incentive to follow dispatch instructions.⁷

B. PJM's Proposal.

The updates to RT SCED submitted in the May 17th Filing adopt the Market Monitor's recommendation to create consistent five minute dispatch, pricing and settlement. The May 17th Filing was developed cooperatively by PJM and the Market

³ See PJM Filing, Docket No. ER20-2573-000 (July 31, 2020) ("July 31st Filing").

⁴ See Protest of the Independent Market Monitor for PJM, Docket No. ER20-2573-000 (August 21, 2020) ("August 21st Filing").

⁵ 2021 *Quarterly State of the Market Report for PJM: January through March*, Section 3 Energy Market, at Table 3-34.

⁶ *Settlement Intervals and Shortage Pricing in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 825, 155 FERC ¶ 61,276 at PP 1-4 (June 16, 2016) ("Order No. 825").

⁷ August 21st Filing at 26-30.

Monitor to correct inconsistencies in the dispatch and pricing process in the real-time energy market that is the core of PJM markets. The May 17th Filing updates the ramp time used to dispatch resources to five minutes, updates the initial resource state to an estimate based on prior dispatch instructions, and eliminates PJM's administrative changes to generators' offered ramp rates. PJM currently replaces offered ramp rates based on the Degree of Generator Performance (DGP) and Generator Performance Monitoring (GPM) in the RT SCED calculation of generators' MW available to provide energy.⁸

II. COMMENTS

A. The Market Monitor Supports the Reforms in the May 17th Filing.

1. The May 17th Filing is Needed for Efficient Markets.

As the Market Monitor explained previously, these reforms to correct the misalignment among dispatch, pricing, and settlement in PJM's real-time market are long overdue.⁹ Currently, the use of a 10 minute ramp time for resources in RT SCED combined with RTSECD case approvals every five minutes results in overlapping dispatch instructions. This process results in prices that are based on dispatch targets that are never achieved during the period when the instructions are effective.¹⁰ The May 17th Filing shortens the resource ramp time used in RT SCED to five minutes. This ensures that the assumption used in the calculation of the RT SCED solution, of a five minute resource ramp, is consistent with the period that these instructions are effective.

The updates to RT SCED in the May 17th Filing ensure that under normal operations, a new RT SCED solution is approved at the end of the dispatch period of the previous RT

⁸ PJM will continue to use DGP to calculate its estimate of tier 1 synchronized reserve, which causes PJM to clear more tier 2 synchronized reserve, affecting the economic dispatch.

⁹ *Id* at 34-35.

¹⁰ *Id* at 23-26.

SCED solution. This addresses the issue of overlapping dispatch signals where resources do not have an opportunity to achieve the target. It also addresses the inaccuracy of calculating prices based on the assumption of achieving a dispatch target that is designed to never occur. While the May 17th Filing proposes a defined dispatch timeline that is based on a five minute frequency, it also allows dispatchers the flexibility to deviate from this process for reliability when data errors or software failures result in inaccurate solutions. The proposal is a significant improvement compared to status quo. The Market Monitor will continue to monitor the dispatch process to recommend further refinements.

The May 17th Filing also proposes to improve the modeling of the initial status of resources. Currently, RT SCED uses the latest state estimator (SE) data to determine each resource's initial status. By the time the RT SCED case is solved and approved the SE MW value is stale. The May 17th Filing includes an update that incorporates the resource's initial status based on the prior dispatch target and the offered ramp rates.

2. The May 17th Filing is Needed to Comply with Order No. 825.

A goal of Order No. 825 was to directly link the dispatch instructions sent to resources to the prices paid to the resources responding to these instructions. The status quo, based on the implementation of PJM's short term reforms on October 15, 2020, contains a systematic disconnect between the timing of the dispatch instructions and the prices. The May 17th Filing corrects this issue, and ensures that the five minute dispatch period matches the five minute pricing and settlement period.

A related goal of Order No. 825 was to reward resource flexibility. The May 17th Filing ensures that flexible units that can respond to dispatch instructions faster are compensated based on the prices associated with those dispatch instructions.

The May 17th Filing also aligns the payment for ancillary services with the interval when they are provided. Reserve and regulation prices are calculated from lost opportunity costs determined by the RT SCED dispatch. Currently, the five minute reserve and regulation settlements are not based on the energy prices for the interval when the relevant

resources reduce output from the otherwise economic point to provide the ancillary services.

3. The May 17th Filing Adds Transparency by Documenting Details of Market Operations in the Tariff.

PJM's OATT and OA do not currently describe the dispatch and pricing process in detail and include sections that are no longer applicable. The changes to the OATT and the OA in the May 17th Filing that add transparency to these documents are the result of a collaborative effort among PJM, the Market Monitor, and PJM stakeholders. The changes more accurately describe the inputs used in the PJM dispatch and pricing tools, the interactions between the dispatch and pricing tools, and PJM's process for exceptions to the use of these tools to dispatch resources. These changes more accurately reflect the current operation of the PJM dispatch and pricing process, and should be approved.

For these reasons, the Market Monitor requests that the Commission approve the OATT and OA changes submitted by PJM in the May 17th Filing.

III. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to these comments as it resolves the issues raised in this proceeding.

Respectfully submitted,



Jeffrey W. Mayes

Joseph E. Bowring
Independent Market Monitor for PJM
President
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Eagleville, Pennsylvania 19403
(610) 271-8051
joseph.bowring@monitoringanalytics.com

General Counsel
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Eagleville, Pennsylvania 19403
(610) 271-8053
jeffrey.mayes@monitoringanalytics.com

Catherine A. Tyler
Deputy Market Monitor
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Eagleville, Pennsylvania 19403
(610) 271-8050
catherine.tyler@monitoringanalytics.com

Siva Josyula
Senior Analyst
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Eagleville, Pennsylvania 19403
(610) 271-8050
siva.josyula@monitoringanalytics.com

Dated: June 7, 2021

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Eagleville, Pennsylvania,
this 7th day of June, 2021.



Jeffrey W. Mayes

General Counsel

Monitoring Analytics, LLC

2621 Van Buren Avenue, Suite 160

Eagleville, Pennsylvania 19403

(610) 271-8053

jeffrey.mayes@monitoringanalytics.com