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2022 Quarterly State of the Market Report for PJM: January through March

MARKET MONITOR FINDS PJM WHOLESALE ELECTRICITY MARKETS COMPETITIVE

(Eagleville, PA May 12, 2022) PJM Interconnection's wholesale electric energy market produced competitive results during the first three months of 2022, according to the *2022 Quarterly State of the Market Report for PJM: January through March* released today by Monitoring Analytics, LLC, the Independent Market Monitor for PJM.

The Independent Market Monitor, Joseph Bowring, announced findings of the report today. The report is the Independent Market Monitor's assessment of the competitiveness of the wholesale electricity markets managed by PJM in 13 states and the District of Columbia. The report includes analysis of market structure, participant behavior and market performance for each of the PJM markets.

"Our analysis concludes that the results of the PJM Energy Market were competitive in the first three months of 2022," Bowring said.

Energy prices increased in the first three months of 2022 from the first three months of 2021. The real-time load-weighted average LMP in the first three months of 2022 increased 75.5 percent from the first three months of 2021, from \$30.84 per MWh to \$54.13 per MWh, \$23.29 per MWh. This was the highest first quarter price since the polar vortex in the first quarter of 2014. This was the third highest increase in first quarter LMP since the creation of PJM markets in 1999. The highest increase occurred in 2014 as a result of the polar vortex in the first quarter, and the second highest occurred in 2003 when winter load increased and natural gas prices doubled to above \$8.00 per Dth in the first quarter. Of the \$23.29 per MWh increase, 49.0 percent was a direct result of higher fuel and emission costs, particularly higher natural gas prices. The real-time hourly average load in the first three months of 2022, increased by 2.4 percent from the first three months of 2021, from 89,887 MWh to 92,007 MWh.

The total price of wholesale power increased from \$53.30 per MWh in the first three months of 2021 to \$80.28 per MWh in the first three months of 2022, an increase of 50.6 percent. Energy, capacity and transmission charges are the three largest components of the total price of wholesale power, comprising 98.0 percent of the total price per MWh in the first three months of 2022. Starting in the third quarter of 2019, the cost of transmission per MWh of wholesale power has been higher than the cost of capacity.

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Energy prices in PJM in the first three months of 2022 were set, on average, by units operating at, or close to, their short run marginal costs, although this was not always the case. This is evidence of generally competitive behavior and competitive market outcomes, although high markups for some marginal units did affect prices.

In the first three months of 2022, generation from coal units decreased 3.1 percent, and generation from natural gas units increased 6.9 percent compared to the first three months of 2021.

Net revenue is a key measure of overall market performance as well as a measure of the incentive to invest in generation to serve PJM markets. Theoretical net revenues from the energy market increased for all unit types in the first three months of 2022 compared to the first three months of 2021. Theoretical energy net revenues increased by 145 percent for a new combustion turbine, 94 percent for a new combined cycle, 54 percent for a new coal unit, and 75 percent for a new nuclear plant.

Total energy uplift charges decreased by \$5.9 million, or 17.2 percent, in the first three months of 2022 compared to the first three months of 2021, from \$34.3 million to \$28.4 million.

When there are binding transmission constraints and locational energy price differences, customers pay more for energy than generation is paid to produce that energy. The difference is congestion. Congestion belongs to customers and should be returned to customers. Total congestion increased by \$389.2 million or 321.5 percent, from \$121.1 million in the first three months of 2021 to \$510.3 million in the first three months of 2022. But only 31.9 percent of total congestion paid by customers for the first 10 months of the 2021/2022 planning period was returned to customers through the ARR and self-scheduled FTR revenues offset. The goal of the FTR market design should be to ensure that customers have the rights to 100 percent of the congestion that customers pay.

The Independent Market Monitor (also known as the Market Monitoring Unit or MMU) evaluates the operation of PJM's wholesale markets to identify ineffective market rules and tariff provisions, proposes improvements to market rules and tariff provisions when needed, monitors compliance with and implementation of the market rules, identifies potential anticompetitive behavior by market participants and provides comprehensive market analysis critical for informed policy and decision making. Joseph Bowring, the Market Monitor, ensures the independence and objectivity of the monitoring program.

For a copy of the State of the Market Report, visit Monitoring Analytics at: http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2022.shtml