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2020 State of the Market Report for PJM

MARKET MONITOR FINDS PJM WHOLESALE ELECTRICITY MARKETS COMPETITIVE

(Eagleville, PA March 11, 2021) PJM Interconnection's wholesale electric energy market produced competitive results during 2020, according to the *2020 State of the Market Report for PJM* 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 2020," Bowring said.

Energy prices were lower in 2020 than in any year since PJM markets were established in 1999. Energy prices in PJM were already among the lowest in PJM's history in 2019. The load-weighted average real-time LMP was 20.3 percent lower in 2020 than in 2019, \$21.77 per MWh versus \$27.32 per MWh. Of the \$5.55 per MWh decrease, 50.3 percent was a direct result of lower fuel costs. The other major contributor to the decline in energy prices was the significant drop in demand as a result of both the mild winter weather and the economic impact of COVID-19. On a cumulative basis, PJM load was down 4.0 percent compared to 2019, and load was down 3.4 percent after accounting for the impact of weather.

Energy prices in PJM in 2020 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.

The total cost of wholesale power includes the cost of energy, the cost of capacity and the cost of transmission. The cost of energy has been the largest component, the cost of capacity has been the second largest and the cost of transmission service has been third. But in 2020, for the first time since the start of the PJM capacity market in 2007, the cost of transmission was greater than the cost of capacity.

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Net revenue is a key measure of overall market performance as well as a measure of the incentive to invest in new generation to serve PJM markets. Net revenues are significantly affected by fuel prices, energy prices and capacity prices. Theoretical net revenues decreased for all unit types in 2020 compared to 2019 as a result of lower energy prices. Theoretical net revenues decreased by 19 percent for a new combustion turbine, 23 percent for a new combined cycle, 56 percent for a new coal unit, and 22 percent for a new nuclear plant.

The trend toward increased output from gas-fired resources and less from coal-fired resources accelerated in 2020. The share of total PJM energy produced from coal fell from 23.8 percent in 2019 to 19.3 percent in 2020 while the share of energy produced from gas increased from 36.4 to 39.8 percent. The capacity factor of coal units fell from 30.1 percent to 25.6 percent.

Total energy uplift charges increased by \$2.4 million or 2.7 percent, from \$88.5 million in the first nine months of 2019 to \$90.9 million in the first nine months of 2020.

When there are binding transmission constraints and locational energy price differences, load pays more for energy than generation is paid to produce that energy. The difference is congestion. Congestion belongs to load and should be returned to load. Total congestion costs decreased by \$54.7 million or 9.4 percent, from \$583.3 million in 2019 to \$528.6 million in 2020. But only 57.8 percent of total congestion costs for the first seven months of the 2020/2021 planning period were returned to load through the total ARR and self-scheduled FTR revenues offset. The goal of the FTR market design should be to ensure that load has the rights to 100 percent of congestion costs.

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/2020.shtml