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FOR IMMEDIATE RELEASE

2018 State of the Market Report for PJM

MARKET MONITOR FINDS PJM WHOLESALE ELECTRICITY MARKETS COMPETITIVE

(Eagleville, PA March 14, 2019) PJM Interconnection's wholesale electric energy market produced competitive results during 2018, according to the *2018 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 2018," Bowring said.

Energy prices were significantly higher as a result of higher natural gas and coal prices, increased load, adjusted dispatch and higher markups. The load-weighted average real-time LMP was 23.4 percent higher in 2018 than in 2017, $38.24 per MWh versus $30.99 per MWh. Of the $7.25 per MWh increase, 35 percent is directly attributable to fuel costs.

Energy prices in PJM in 2018 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.

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. Energy prices, fuel prices, and capacity prices were higher in 2018 than in 2017. Energy prices increased more than fuel prices and net revenues were higher for all unit types as a result. In 2018, average energy market net revenues increased by 39 percent for a new CT, 48 percent for a new CC, 138 percent for a new CP, 32 percent for a new nuclear plant, 255 percent for a new DS, 24 percent for a new on shore wind installation, 26 percent for a new off shore wind installation and 10 percent for a new solar installation compared to 2017. In 2018, a new CC would have been profitable in every zone and a new CT would have been profitable in 11 zones. Although higher net revenues increased the

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profitability of existing coal and nuclear plants, a new coal plant and a new nuclear plant would have been significantly unprofitable.

Total energy uplift charges increased by $72.0 million or 56.5 percent, from $127.3 million in 2017 to $199.3 million in 2018.

Total payments for demand response programs increased by $95.9 million or 19.1 percent, from $502.6 million in 2017 to $598.6 million in 2018. The capacity market is the primary source of revenue to participants in PJM demand response programs. In 2018, payments to demand response resources in the capacity market increased by $91.8 million or 18.5 percent, while payments to demand resources in the economic program decreased by $0.1 million or 3.9 percent.

When there are binding transmission constraints and locational price differences, load pays more for energy than generation is paid to produce that energy. The difference is congestion. Congestion costs increased by $612.3 million or 87.8 percent, from $697.6 million in 2017 to $1,309.9 million in 2018. Congestion reflects the underlying characteristics of the power system, including the capability of transmission facilities, the fuel costs and geographic distribution of generation facilities and the geographic distribution of load.

ARR and FTR revenues offset 100.0 percent of total congestion costs for load during the 2016/2017 planning period but offset only 50.0 percent of total congestion costs for the 2017/2018 planning period, the first planning period in which new rules required the allocation of balancing congestion to load instead of FTR holders. ARR and FTR revenues offset 74.2 percent of total congestion costs for the first seven months of the 2018/2019 planning period, the first year ARR holders will receive surplus congestion revenue. The goal of the FTR market design should be to ensure that load has the rights to 100 percent of the congestion revenues.

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/2018.shtml