



An AEP Company

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May 21, 2021

Jenifer French
Chair, Public Utilities Commission of Ohio
180 East Broad Street
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Re: In the Matter of the Application Seeking Approval of Ohio Power Company's Proposal to Enter into an Affiliate Power Purchase Agreement for Inclusion in the Power Purchase Agreement Rider, Case No. 14-1693-EL-RDR; In the Matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority, Case No. 14-1694-EL-AAM

Dear Chair French:

In accordance with Section III.B.2 of the December 14, 2015 Joint Stipulation and Recommendation, I am submitting AEP Ohio's 2021 State of the Market Report for the Commission's consideration.

Thank you for your attention to this matter.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read "Steve Nourse", written over a horizontal line.

cc: Parties of Record

State of the PJM Capacity and Energy Market June 2021

*A whitepaper presented by
AEP Ohio*



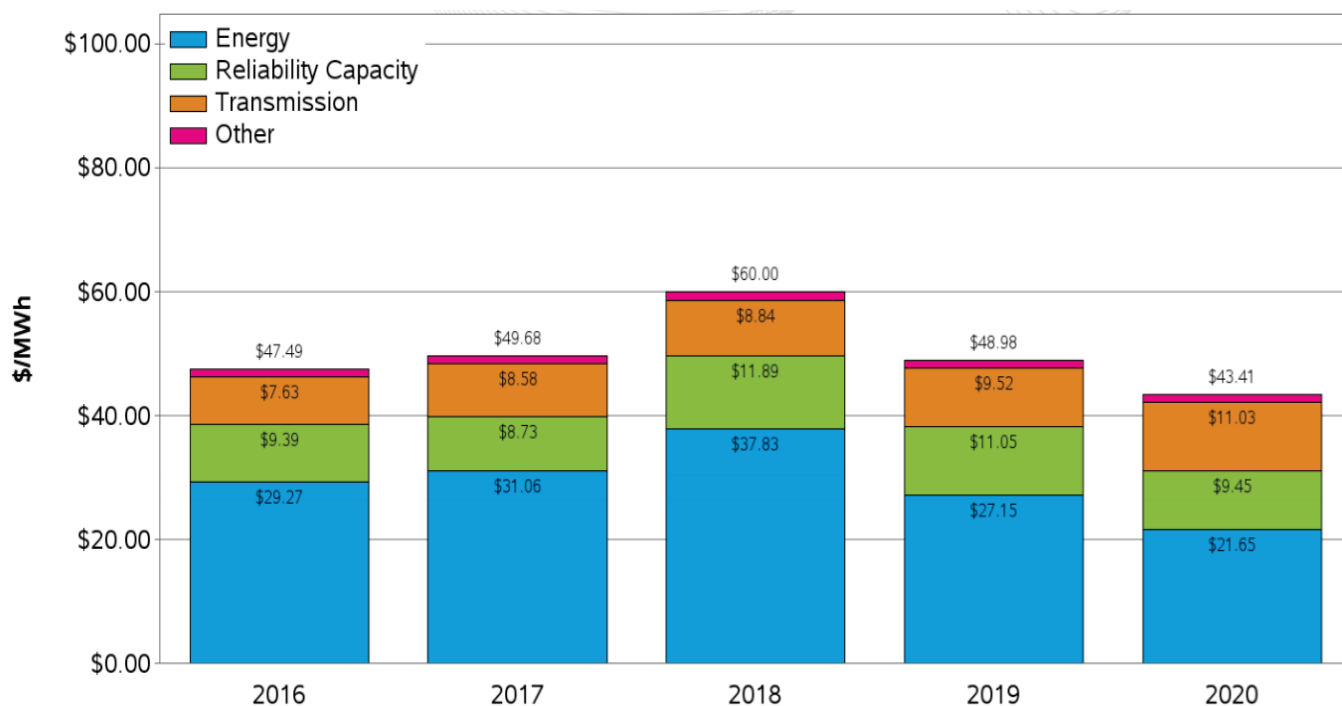
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Key Items

Introduction. AEP Ohio Power Company (“AEP Ohio” or the “Company”) is a longtime participant in the PJM Interconnection LLC (“PJM”) markets and recognizes the potential benefits associated with a market paradigm for both capacity and energy. However, AEP Ohio also believes that there is a balance between market paradigms and individual state policy goals. In 2020, this came to the forefront with the capacity docket at FERC. Nevertheless, AEP Ohio continues to work diligently within the PJM process to deliver reliable, economic power to our Ohio customers.

Wholesale Prices. Wholesale prices decreased over 11% from 2019 to 2020, declining from \$48.98/MWH to \$43.41/MWH. The primary driver was lower electricity usage as a result of the COVID-19 pandemic and the work from home requirements that followed.



The bar charts above show the total average wholesale market cost for serving load from 2016 through 2020. This excludes distribution and other state-specific charges outside of the PJM market.

- **Energy** comprises the largest portion of the all-in cost to serve wholesale load. This was a result of lower electricity usage caused by the COVID-19 pandemic. The net effect was a 20% decrease in energy costs in 2020 to \$21.65/MWH.

- **Capacity** prices (expressed here in \$/MWH on the charts rather than \$/MW-day) were down slightly (\$1.60/MWH) due to the change in clearing prices from the capacity auction.
- **Transmission** costs per MWH were up slightly (\$1.50/MWH).
- **Other** costs include ancillary services such as black start, regulation, and spinning reserves, and remain a small part of the overall wholesale price.

PJM's Capacity Auction

As noted in the Ohio State of the Market Report for 2019, FERC issued an order on December 19, 2019¹ directing PJM to expand its Minimum Offer Price Rules (MOPR) to apply to any new or existing resource that receives a state subsidy. PJM has since scheduled capacity auctions for 2022/23 to take place in May 2021. PJM also scheduled the 2023/24 capacity auction to be held in December 2021.

FERC defined state subsidies as any payment made via a state mechanism that provides revenues to generators outside of a competitive market. The prime example for Ohio would be payments for Zero Emission Credits (ZECs). Also included would be future construction of renewables under a Renewable Portfolio Standard, or any kind of regulatory payment provided under state legislative or regulatory rulings.

Specific to Ohio's retail auction, FERC clarified that a unit directly or indirectly connected to a sale made by a retail supplier in state retail auctions is not a subsidy.

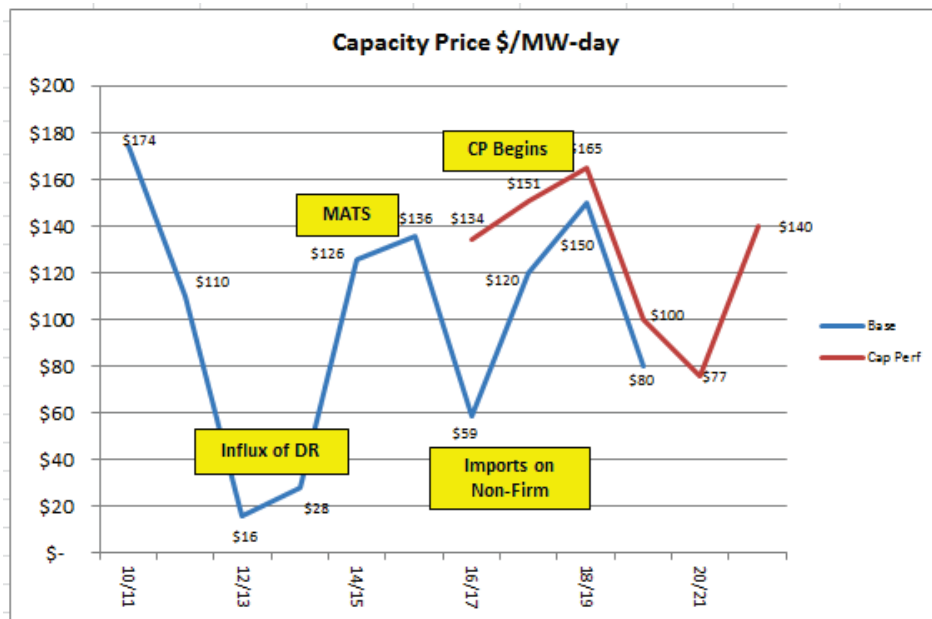
With the changing of the White House administration along with the change in the FERC chair, much concern was raised on the impact of the expanded MOPR on renewable resources and the ability of certain states (and individual companies) to implement their desired clean energy policies. As of the date of this report, PJM is examining ways to modify the MOPR to accommodate these policies.

History of Price Changes and Causes (Graph below). Although intended as an incentive to build new natural gas-fired generation resources, the Reliability Pricing Model (RPM) has historically cleared at prices well below the cost of constructing a new natural gas unit (Cost of New Entry or CONE), which PJM posted for its 2021/22 auction as approximately \$300/MW-day². The reasons for the low clearing prices range from high reserve levels within the footprint to the economics of the natural gas/electric market.

¹ Docket #EL16-49-000

² PJM Planning Parameters for the 2021/22 RPM auction. Net CONE on a ICAP basis.

<http://www.pjm.com/-/media/markets-ops/rpm/rpm-auction-info/2021-2022/2021-2022-bra-planning-period-parameters.ashx?la=en>



AEP Ohio's view is that the capacity auction is not a true market mechanism. The demand curve is an administrative construct negotiated by stakeholders and approved by FERC. The supply offers are monitored by PJM's independent market monitor to assure offers are neither too high nor too low. Additionally, the MOPR order adds another layer of administrative oversight to this process.

The RPM design does not reduce volatility, as can be seen from the graph. This is because the basic premise of the auction process remains: it provides a one-year price for a physical asset that is intended as a 30-year investment.³ This inherent volatility continues even after the adoption of multiple rule changes since the inception of the RPM in 2007.

Issues Affecting the Energy Market

Price formation in shortage conditions. FERC approved PJM's proposal (#ER17-775) to make major revisions to the energy market price formation rules. The most significant requested revision was to increase reserve pricing during shortage conditions, where PJM proposed to allow the prices to increase significantly as reserves gradually get tighter. The changes are scheduled to begin in May 2022.

Fast Start Pricing and 5-minute Dispatch. Also in 2019, PJM had filed a recommendation to FERC regarding allowing fast-start generators (e.g. combustion turbines) to set energy prices when they are dispatched. Rather than ruling on the specific issue of this docket (#ER19-2722),

³ The PJM Tariff actually requires new generator offers to reach a certain point in their construction and approval requirements before they are allowed to offer into the auction.

FERC ordered PJM to realign their dispatch algorithm to more properly match the dispatch signals with the pricing signals. These dispatch signals are given every five minutes. As of the date of this report, PJM is in the process of aligning the dispatch and pricing signals. These changes should be in place by the fall of 2021. PJM is also waiting on FERC to rule on its compliance filing related to fast start pricing. AEP Ohio's position is that both fast start pricing and 5-minute dispatch will properly address flaws in the system. However, we believe neither should have a significant impact on overall energy prices.

Carbon Price Adders. PJM continues to conduct stakeholder meetings on the potential to use carbon price adders in the dispatch algorithm to recognize the value of carbon emissions to the footprint. The stakeholders acknowledge the challenges associated with the leakage issue – how to properly recognize carbon values in states with carbon objectives without causing harm to states which do not. FERC held a technical conference to discuss the feasibility of various approaches to implement carbon pricing in wholesale markets. AEP participated as one of the panelists emphasizing the need to balance the transition to zero emissions while maintaining safe and reliable service at efficient costs.

Capacity Values for Renewables and Energy Storage. As noted in last year's report, FERC issued an order requiring PJM to file by October a proposal for addressing the capacity values of renewable and energy storage resources. PJM filed its proposal October 30, 2020. The proposal establishes a 10-year floor value for renewable and energy storage resources (referred to as the transition mechanism) using their Effective Load Carrying Capability (ELCC). ELCC evaluates the capacity contribution of a resource during hours with high system demand. The lower the output from these resources at the time of system need results in a lower capacity credit. FERC issued an order denying PJM's proposal. While FERC appeared to agree with PJM's ELCC methodology, they stated the transition mechanism (the 10-year floor values) is unjust and unreasonable. FERC lifted the abeyance of the paper hearing in Docket Nos. EL19-100-000 and ER20-584-000 and established a briefing schedule with PJM required to file an initial brief by June 1, 2021. AEP Ohio believes it is prudent and timely to evaluate the capacity value of renewables and storage units, as these resources will comprise a more significant part of the PJM dispatch in the future and will be evaluating PJM's initial brief and filing comments as appropriate.

Financial Transmission Rights. The *Report of the Independent Consultants on the GreenHat Default*⁴ included a recommendation to "conduct a general review of the FTR market...to evaluate the risks and rewards of potential structural reforms." PJM engaged London Economics International (LEI) to conduct a comprehensive review of ARR/FTR market design to ensure that load receives the maximum value of the ARR/FTRs they receive. LEI issued its report in December 2020⁵. As of the date of this report, stakeholders have begun discussing the

⁴ <https://www.pjm.com/-/media/library/reports-notice/special-reports/2019/report-of-the-independent-consultants-on-the-greenhat-default.ashx?la=en>

⁵ <https://pjm.com/-/media/committees-groups/task-forces/afmtf/postings/lei-review-of-pjm-arrrs-and-ftrs-report.ashx>

findings in the report and will begin to develop recommendations for changes to the current process.

GreenHat Default Wrap-up. As noted in prior year's, the financial firm, GreenHat L.L.C., defaulted on a three-year Financial Transmission Rights (FTR) trading position in the PJM market. As of the date of this report, the final month is being liquidated on a daily basis. Only three percent of the GreenHat portfolio remained in the third year. The total amount of the default is estimated at \$185M, with AEP Ohio's share estimated at approximately 1% of the total. PJM and stakeholders worked on changes to the credit and collateral shortcomings exposed by the GreenHat default. These changes have been approved by FERC.

Conclusion

AEP Ohio has divested all its de-regulated generation in Ohio. Nevertheless, AEP Ohio believes it is imperative to work with the Public Utilities Commission of Ohio to formulate the best strategy for serving our Ohio customers with clean, reliable, and diverse power supply for the long term.

This foregoing document was electronically filed with the Public Utilities

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Case No(s). 14-1693-EL-RDR, 14-1694-EL-AAM

Summary: Report - AEP Ohio 2021 State of Market Report electronically filed by Mr. Steven T Nourse on behalf of Ohio Power Company