



Statement of Evelyn Robinson on Behalf of PJM Interconnection, L.L.C.

# **The Ohio House Select Committee on Energy Policy and Oversight**

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For Public Use

## Introduction

Chairman Hoops, Vice Chairman Abrams, Ranking Minority Member Leland and respected members of the House Select Committee on Energy Policy and Oversight, thank you for the invitation to appear before you this afternoon. My name is Evelyn Robinson, and I am the managing partner in the State Government Policy group at PJM. I am here today to discuss the work that PJM undertakes to ensure that power reliably flows across the bulk electric system and is eventually delivered to consumers and businesses in the great state of Ohio. I want to focus my testimony on three items. The first is to provide insight into how PJM works in real time to maintain system reliability. The second is to provide more information about the state of PJM and Ohio's generation resource mixes. Finally, I will provide some information related to an economic analysis PJM completed last year at the request of the Ohio Consumers' Counsel and the Pennsylvania Public Utility Commission.

## Background

PJM is an independent, federally regulated entity known as a regional transmission organization (RTO), which serves all or parts of 13 states and the District of Columbia, including the entirety of the state of Ohio. One way to view PJM is as an "air traffic controller" for the electric grid. PJM is not the local utility. We do not own any generating or transmission equipment. Like an air traffic controller, PJM operates, in a coordinated fashion, high-voltage transmission lines that are committed to PJM's footprint by their owners. In Ohio, those owners include AEP, the American Transmission Systems (which is owned by FirstEnergy), Dayton Power & Light, Duke Energy Ohio, and the Ohio Valley Electric Corporation.

PJM performs three core business functions within our service territory – system operations, transmission planning and administering the wholesale electricity market. We **operate** the grid on a second-to-second basis, ensuring that supply and demand on the system are continuously met. Second, we **plan** the grid looking out 15 years into the future to see how the system must be reconfigured to meet changing needs, such as population migration, new or retiring power plants and customer-located power plants. Third, and finally, we administer **markets**, and this administration results in the least-cost operation of the grid for consumers. Put together, these functions, occurring at the *wholesale level*, form the basis for the reliable and economic delivery of retail electricity used to power millions of homes and businesses in Ohio. In total, these three core functions provide between \$3.2 billion and \$4 billion in annual savings to customers across our footprint.<sup>1</sup>

## Reliable Operations Is Job One

PJM has been providing reliable electric service since 1927, dating back to its initial role as a power pool. While our role, services offered and footprint have evolved in the 90+ years since, the core tenet of our mission, however, remains the same: reliable operations, a technical term for "keeping the lights on," will always be job one for the organization.

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<sup>1</sup> PJM Value Proposition, 2019, <https://www.pjm.com/about-pjm/~media/about-pjm/pjm-value-proposition.ashx>

PJM, like all RTOs, is responsible for ensuring reliable grid operations across the bulk electric system within its service territory. The bulk electric system, generally, consists of large generators and the high-voltage transmission system that connect them. The electric power system in the eastern part of the country, which we call the eastern interconnect, operates as a single interstate machine with electricity moving at the speed of light. When a generating plant malfunctions in Newark, New Jersey, that can have effects on the system in Newark, Ohio. When a transmission line is lost in Ashland, Pennsylvania, that may require adjustments to keep the flow of power to places like Ashland, Ohio. Due to the physics of how electrons are transmitted and the interstate nature of how the system evolved, some form of regional collaboration is necessary.

Needless to say, “keeping the lights on” for over 65 million people requires a high degree of scientific and engineering knowledge.

Many in the state of Ohio have not heard of PJM or any other RTO in the country for that matter. This committee has heard of PJM in the context of the market-related debates that have occurred at the General Assembly over the past few years. However, the scientific work associated with “keeping the lights on” is the core tenet of PJM’s mission – it is a very large portion of PJM’s overall value proposition – and we work very hard to ensure that the residents and businesses in the state of Ohio don’t have to worry about rolling and major interstate blackouts as power is transmitted across the bulk electric system.

## **Overview of PJM and Ohio’s Generation Portfolios**

I’m attaching for your review several slides from PJM’s 2019 State Infrastructure Report, which demonstrates the installed capacity in both Ohio and the PJM region. As of the beginning of this year, the PJM region has a total installed capacity amount of over 184,000 MW. This figure consists of 78,000 MW of natural gas; 52,000 MW of coal units; and 32,000 MW of nuclear energy with the remainder made up by renewable and oil units. In Ohio, the state currently has over 25,000 MW of installed capacity, which consists of primarily natural gas and coal units, as well as over 2,000 MW of nuclear energy provided by the Davis-Besse and Perry plants. Beyond these “steel in the ground” resources, Ohio also has 2,200 MW of demand response resources. Demand response resources consist of customers who are paid to reduce consumption in times of system stress.

PJM’s fuel mix continues to evolve, as we are seeing a robust amount of new generation seeking to enter the market. PJM has over 107,000 MW of proposed resources in our queue, made up primarily of natural gas, solar, wind and storage resources. Generation looking to come into service in Ohio is reflective of this overall resource trend, as natural gas and solar are the most prominent types of resources trying to come online in Ohio. While I would note that units within the generation interconnection queue may not ultimately be constructed, the sheer number of projects in the queue expresses that investors are finding value in bringing new resources into the market in locations such as Ohio. The price signals provided by PJM’s markets encourage the most efficient and cost-effective resources to come into service where they are valued most.

## **Economic and Emissions Analysis of Nuclear Plant Scenarios**

In April 2019, the Ohio Consumers’ Counsel and the Pennsylvania Public Utility Commission asked PJM to run analyses for different scenarios related to the closure of the Davis-Besse, Perry, Three Mile Island and Beaver Valley

nuclear plants. At the time these scenarios were run, deactivation requests were submitted for all of the plants in the study, so PJM ran an economic analysis of the impacts of the closures on the energy market and emissions. I have attached a copy of this analysis to my presentation today.

Given the limited time to produce the requested analysis, PJM focused on the energy market and emissions impacts of the requested study scenarios. PJM also focused on wholesale market impacts of the retirement scenarios rather than retail, given the many assumptions that would be required in order to estimate the impacts on retail electric prices.

To evaluate the impacts, PJM simulated the market results for the year 2023 under various resource mixes. Once again, at the time of the study, deactivation notices were already submitted. The base case assumes the nuclear units in Pennsylvania and Ohio would retire and also includes all planned natural gas units with a terminal online agreement – those with the highest probability of operation – would come online.

After modeling the base case (where the aforementioned Ohio and Pennsylvania nuclear units retired), the PJM region would see a \$1.6 billion dollar savings across the region compared to today's system due to the significant entry of new, efficient resources. In addition to the base case, PJM also modeled scenarios related to keeping some or all of the nuclear units online. In our report, we have noted the savings or costs generated related to the base case. Again, this study was produced during the pendency of HB6 and assumes, as its base case that these four power plants retired. This is a different scenario than the reality that exists today.

In addition to this economic analysis, we have also included report tables that show the changes in emissions for each simulated case.

I would note that our analysis did not include the costs borne by ratepayers of any rider paid to incent the resources to stay on the system.

PJM believes that the decisions by states to subsidize their generation fleets are the decisions of the legislature and related agencies. The analysis conducted by PJM was done only to provide our best attempt to determine what impacts the retirements of the units would have on the state and regional energy markets and emissions.

## Conclusion

Representatives, I thank you for your time today. My hope is that through this testimony you were able to gain some understanding of how PJM supports the core tenet of its mission, which is to maintain reliable grid operations to help keep the lights on for consumers and businesses in the great state of Ohio.