

28th ANNUAL OHIO

Energy Savings & Management

C O N F E R E N C E






8:30 a.m. Powering the Future of Ohio's Economy ... Priceless Insights on the Ohio Electricity Marketplace; the Transition to Renewable Generation Resources; Grid Reliability; Rising Transmission Costs; Smart Grid & Advanced Technologies; and Other Major Developments Impacting Electric Generation, Transmission and Rates

Moderator: Jenn Klein, *President, Ohio Chemistry Technology Council, Columbus*

- Rebecca Carroll, *Senior Director, Market Design & Economics, PJM Interconnection, Audobon, PA*
- Heath Knakmuhs, *Vice President/Policy Counsel, U.S. Chamber's Global Energy Institute, Washington, DC*
- Mark Jones, *Vice President, Customer Engagement, FirstEnergy Corp., Akron*
- Scott White, *President & CEO, IGS Energy, Dublin*
- Steven T. Nourse, *Esq., Vice President Legal, American Electric Power/AEP Ohio, Columbus*
- David F. Proaño, *Regulatory Counsel, Ohio Energy Leadership Council (OELC) and Partner, BakerHostetler LLP, Cleveland*

Source: PJM's Energy Transition Report, Feb. 24, 2023

Balance Sheet Summary (2022–2030)

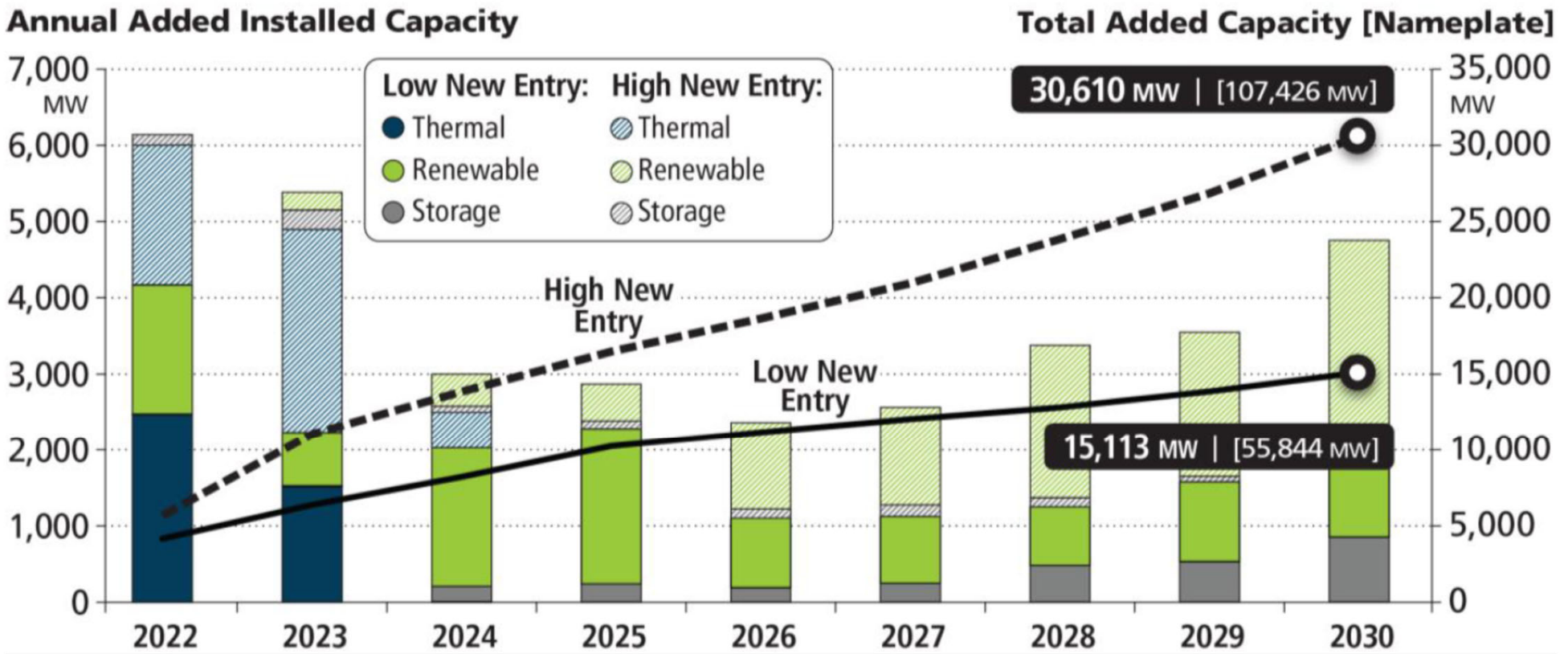
<p>Retirements</p> <p>40 GW</p> <p>60% Coal 30% Natural Gas 10% Other</p> 	<p>New Entry Wind/Solar⁶</p> <p>Low = 48 GW-nameplate / 8 GW-capacity</p> <p>High = 94 GW-nameplate / 17 GW-capacity</p> 	<p>New Entry Standalone Storage</p> <p>Low = 3 GW</p> <p>High = 4 GW</p> 	<p>New Entry Thermal</p> <p>Low = 4 GW</p> <p>High = 9 GW</p> 	<p>Load Growth</p> <p>2023 Forecast = 11 GW</p> <p>Electrification Forecast = 13 GW</p> 
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Unless otherwise noted, thermal capacity values are expressed in ICAP, without adjustment for EFORD.

Source: PJM's Energy Transition Report, Feb. 24, 2023



Figure 4. Forecast Added Capacity



Source: PJM's Energy Transition Report, Feb. 24, 2023



Table 1. Reserve Margin Projections Under Study Scenarios

Reserve Margin	2023	2024	2025	2026	2027	2028	2029	2030
Low New Entry								
2023 Load Forecast	23%	19%	17%	15%	11%	8%	8%	5%
Electrification	22%	18%	16%	13%	10%	7%	6%	3%
High New Entry								
2023 Load Forecast	26%	23%	21%	19%	17%	16%	17%	15%
Electrification	25%	22%	20%	18%	15%	14%	14%	12%

Source: PJM's RTEP Window 3 Presentation, Dec. 18, 2023

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Wednesday, February 28, 2024

8:30 a.m. Powering the Future of Ohio's Economy ... Priceless Insights on the Ohio Electricity Marketplace; the Transition to Renewable Generation Resources; Grid Reliability; Rising Transmission Costs; Smart Grid & Advanced Technologies; and Other Major Developments Impacting Electric Generation, Transmission and Rates

QUESTIONS FOR PANELISTS

Introductions: Carolyn Brakey

Moderator: Jenn Klein, Ohio Chemistry Technology Council

TOPIC #1 – GRID RELIABILITY IN THE AGE OF RENEWABLES

Q. [Rebecca Carroll]: Ms. Carroll, one year ago PJM released its 4Rs report on the energy transition in PJM, which found that 40 GW of existing generation is at risk of retirement by 2030, representing 21% of PJM's installed capacity, and that wind and solar generation comprise the vast majority of expected new generation resources through 2030. What do these trends mean for reliability of electricity in PJM's 13-state footprint?

Q. [Heath Knakmuhs]: Mr. Knakmuhs, in a January 30 letter posted on PJM's website, PJM's President and CEO Manu Ashthana noted that PJM currently has about 40 GW of mostly renewable resources that have cleared PJM's generation interconnection queue, but are not currently being built at the pace required to replace retiring generation capacity. What concrete steps and policies do you believe federal and state regulators and regional ISOs should take to address delays in completing new generation resources?

Q. [Mark Jones]: Mr. Jones, on January 10 the PUCO approved the submission to the U.S. Department of Energy of a concept paper from FirstEnergy requesting 50% federal funding for a \$30 million project that would see the installation of batteries of at least 2MW providing at least 4MWh of continuous power in specific distribution circuit locations to support local grid reliability in the case of interruptions. What role do you see being played by distributed generation resources such as these battery systems in grid reliability over the next 10-15 years?

TOPIC #1 CONTINUED...

Q. [Scott White]: Mr. White, in its DEO concept paper, FirstEnergy wrote that the use of energy storage as a distribution asset is not a common practice in states with restructured energy markets such as those in PJM, which is a reference to states with competitive retail markets. What role do you believe that competitive markets in general, and competitive retail suppliers in particular, should play in ensuring grid reliability during this transition to renewable generation resources?

Q. [Steve Nourse]: Mr. Nourse, while Ohio is a deregulated state, American Electric Power delivers electricity to 5.6 million customers in 11 states and is also one of the country's largest electricity producers with nearly 29 GW of generation capacity, including approximately 6.1 GW of renewable energy. From AEP's perspective, what are the greatest risks to reliability in the PJM footprint over the next decade, and what steps do you think policymakers need to take now to avert a reliability crisis?

Q. [David Proaño]: Mr. Proaño, the other side of addressing reliability is managing increasing demand from customers. Load is forecasted to continue growing in both PJM generally, and in Ohio specifically, with considerable load growth already taking place of commercial and industrial load in Ohio Power Company territory in particular. What programs and incentives do you believe are necessary to manage customer demand during times of elevated usage when generation resources may be constrained or nearing their limit?

[continued on next page]



TOPIC #2 – THE FUTURE OF A SMARTER GRID

Q. [Rebecca Carroll]: Ms. Carroll, transitioning to the topic of the future of a smarter grid, PJM’s “Advanced Technology Initiative” includes technologies such as real-time transmission line capacity, voltage measurement units, and virtual power plants. Focusing on the retail and residential side of this initiative, what are virtual power plants, and how does FERC Order No. 2222 encourage the advancement of such initiatives?

Q. [Heath Knakmuhs]: Mr. Knakmuhs, one aspect of a smart grid that the Global Energy Institute has studied is the cyber-security risks created by a more-interconnected and online grid infrastructure. Can you discuss what you see as the greatest grid vulnerabilities on the cyber front and what both utilities and customers can do to protect themselves?

Q. [Mark Jones]: Mr. Jones, FirstEnergy offers several tools to provide its customers with data on their account and energy usage, including an online Bill Calculator and detailed bill available through a customer’s FirstEnergy account. Could you describe those available tools, how they can be accessed and used by customers?

Q. [Scott White]: Mr. White, IGS submitted testimony in FirstEnergy’s pending Grid Modernization Phase II case describing the importance from IGS’s perspective of the availability of interval usage data for competitive suppliers. Could you describe why that is important and what products and offerings competitive suppliers may be able to provide with access to such data?

Q. [Steve Nourse]: Mr. Nourse, AEP Ohio is in the middle of implementing Phase 3 of its gridSMART plan, which was approved by the Public Utilities Commission in December 2021. Could you describe what investments AEP Ohio is making under this third phase of its gridSMART plan, and how its customers will benefit from these smart grid investments?

Q. [David Proaño]: Mr. Proaño, as regulatory counsel for OELC, whose members include large commercial and industrial customers in Ohio, what elements of a smarter grid are most beneficial to those customers and why?

TOPIC #3 – TRANSMISSION COST ISSUES

Q. [Rebecca Carroll]: On December 11, 2023, PJM’s board approved a \$5 billion set of transmission projects, known as Regional Transmission Expansion Plan (RTEP) baseline projects, through PJM’s regional transmission expansion planning window 3 procurement, also known as W3. What are RTEP baseline projects, discuss how W3 works, and how are those costs allocated by PJM among market participants?

Q. [Heath Knakmuhs]: Mr. Knakmuhs, on its website the Global Energy Institute advocates for the streamlining of transmission infrastructure, to reduce delays and link up generation resources with the consumption of electricity. Keeping in mind PJM’s recent approval of the major infrastructure projects discussed by Ms. Carroll, what else do you believe that federal and state regulators and policymakers need to do to ensure that we have the transmission infrastructure in place in the future?

Q. [Mark Jones]: Mr. Jones, as transmission costs have continued to increase in the PJM footprint, with associated increased charges for load serving entities such as FirstEnergy’s utility companies in Ohio, what steps is FirstEnergy taking to try to address increasing transmission costs and give customers the opportunity to manage those transmission costs?

Q. [Scott White]: Mr. White, there is a current debate among suppliers regarding whether transmission charges should be the responsibility of the utility as essentially a pass-through charge, or whether the responsibility for transmission charges should be transitioned to default service and competitive service suppliers in Ohio. What is IGS’s view of that issue, and why?

Q. [Steve Nourse]: Mr. Nourse, what do you believe are the main drivers of increasing transmission costs for Ohio consumers, and what do you believe is the most cost-effective way to manage those transmission cost increases?

Q. [David Proaño]: Mr. Proaño, can you describe the existing transmission pilot programs in Ohio that commercial and industrial customers use to manage transmission costs, and how those programs benefit those customers and the grid?



To ALL PANELISTS (IN SAME ORDER): What closing thoughts on Ohio's electricity marketplace do you want to share with our audience in a minute or two?

Closing: Thank you to this knowledgeable panel for sharing these priceless insights, and please give them a round of applause!
