



The Reliability Landscape: A Look Forward

Jen Tribulski, Sr. Director – Member Services
Becky Carroll, Sr. Director – Market Design
General Session
December 4, 2023

Reliability in PJM: Today and Tomorrow
 PJM Interconnection
 March 11, 2021

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**Energy Transition in PJM:
 Resource Retirements, Replacements & Risks**
 Feb. 24, 2023

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Energy Transition in PJM: Emerging Characteristics of a Decarbonizing Grid – Addendum

Introduction
 This document contains supporting information for the PJM white paper, *Emerging Characteristics of a Decarbonizing Grid* (PDF), based on stakeholder questions described below were used in the second phase of analysis, which began in 2021. As these policies and goals continue to evolve, PJM will continue to update the assumptions in future phases of the study.

Scenario Development

State and Corporate Policy Analysis
 In order to inform scenario development, PJM analyzed goals and policies of potential generation retirements. PJM used two time frames to inform its referenced medium-term policy goals through 2035, and the Accelerated and the goal and policies of states and entities described below were updated in 2021. As these policies and goals continue to evolve, PJM will continue to update the assumptions in future phases of the study.

State Goals
 State Renewable Portfolio Standards (RPS) require suppliers to use wind, solar, and other renewable resources to serve increasing percentages of total demand. The following RPS policies are included in this phase of analysis:

NJ ■ 50% by 2030	DC ■ 100% by 2032	VA ■ 100% by 2050
MD ■ 50% by 2030	PA ■ 18% by 2021	NC ■ 12.5% by 2021
DE ■ 40% by 2035	IL ■ 25% by 2026 <small>This phase of the study was completed prior to CEJA, which will be incorporated in the next phase of analysis.</small>	OH ■ 8.5% by 2028

Includes: ■ Minimum solar requirement ■ Non-renewable alternative

CEJA stands for Illinois' Climate and Equitable Jobs Act.
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**Energy Transition in PJM:
 Frameworks for Analysis**
 Dec. 15, 2021

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RELIABILITY



The PJM fleet has adequate resources and enough essential reliability services, but we need our generators to perform when called upon.

Energy Transition in PJM: Resource Retirements, Replacements & Risks

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Generation retirements may outpace new entry with a simultaneous likelihood of load increasing, thereby creating resource adequacy concerns.

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We will continue to need some amount of thermal generation to provide certain essential reliability services until a replacement technology is deployable at scale.



Our Reliability Concerns

The Immediate Concern



Support
Resource
Performance

The Near-Term Concern

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Ensure
Resource
Adequacy

The Upcoming Concern

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Maintain & Attract
Essential Reliability
Services



Initial Actions To Support Reliability



STUDY

- Winter Storm Elliott Event Analysis and Recommendation Report
- Series of 'Energy Transition in PJM' papers
- Engagement with academia to investigate potential changes to increase operational flexibility



MEASURE

- Operational flexibility metrics
- Evolution of essential reliability attributes during the energy transition



TAKE ACTION

- Regulation Market Design
- Reserve Certainty and Resource Flexibility Incentives
- Natural Gas and Electric Market Coordination
- Renewable Dispatch
- Following Dispatch
- Deactivation Enhancements



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Ensuring a Reliable Energy Transition

“Ensuring a Reliable Energy Transition” is a multiyear initiative to preserve the reliable delivery of electricity as the grid undergoes historic transformation.

It affirms PJM’s leadership role as an independent regional transmission organization in identifying and addressing challenges to reliability amid the ongoing shift to a bulk electrical system that increasingly relies on renewable energy.

Through this initiative, PJM will clearly articulate established reliability concerns as well as actions to be taken to support reliability and alleviate these concerns. Development and implementation of these initiatives can only be done in concert with all stakeholders and government partners.



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Trending Topics

- 2022 Regional Transmission Expansion Plan Report [WEB](#)
- Energy Transition in PJM: Resource Retirements, Replacements & Risk [PDF](#)
- Winter Storm Elliott Info [WEB](#)

 Ensuring a Reliable Energy Transition

Presenter:
Jen Tribulski,
Jennifer.Tribulski@pjm.com

Presenter:
Becky Carroll,
Rebecca.Carroll@pjm.com



Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com