Representative Gas-Electric State Outreach

Electric Gas Coordination Subcommittee

September 4, 2025

PJM Anticipates Growing Resource Adequacy Concerns

Since 2006, natural gas-fired generation grew eight-fold[1] to 48% of PJM supply, during a time of limited gas pipeline expansion.[4]

In 2023, PJM forecasted[2] 40 GW of generation retirements by 2030 – mostly coal resources – amid slowed new entry.

PJM currently projects 40 GW load growth over 15 years[3] from data centers, electrification of buildings and transportation. New supply will need to come from intermittent resources and new gas supply.

PJM is forecasting higher winter reliability risk – increasing reliance during peak natural gas operations.

(1) Compare 5.5% of 162,143 MW on page 2 of 2006-som-volume-ii.pdf (monitoringanalytics.com) to page 48.4% 6 of 180,287 MW: 2023-rtep-report.ashx (pjm.com) Note this is on a percentage basis, understating increased installed capacity (MWs).
(2) https://www.pjm.com/-/media/library/reports-notices/special-reports/2023/energy-transition-in-pjm-resource-retirements-replacements-and-risks.ashx
(3) fact-sheet-for-policymakers.ashx (pjm.com) (4) https://www.eia.gov/todayinenergy/detail.php?id=61623#

NERC Issues Winter Gas (Electric) Supply Warning on Sept. 13, 2024

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Criticality of Natural Gas Supply this Winter

September 13, 2024

As energy producers accelerate their preparations for the upcoming winter season, NERC remains concerned about maintaining sufficient natural gas supplies to address extreme winter conditions. Next month marks the one-year anniversary of the FERC/NERC/Regional Entity staff report on Winter Storm Elliott—a wide-area extreme cold event that affected states in the Eastern Interconnection from Georgia to Maine and from Nebraska to Pennsylvania. This revealing event is just the latest among numerous others demonstrating the inextricable link and interconnection between the natural gas and electric systems. As winter approaches, the Elliott experience demonstrates the increasing importance of reliable natural gas supply to support electric reliability and our way life as well as the importance of winter readiness in both the electric and natural gas sectors.

On December 23–24, 2022, Winter Storm Elliott gripped the eastern United States, with low temperatures that were 15 to 30 degrees below normal. Temperature extremes precipitated a sharp spike in peak electricity demand, driving energy emergency declarations by many grid operators. During the event, unplanned generation outages at one point totaled 90,500 MW, equivalent to 13% of the resources in the U.S. Eastern Interconnection. To maintain grid reliability over the course of the storm, transmission operators in the Southeast ordered firm load shedding at various periods that exceeded 5,400 MW in total. It was the largest recorded manual load shed in the history of the Eastern Interconnection.

Natural gas supply disruption was a central cause of generator failures that led to load shedding. The extreme cold conditions caused major declines in natural gas wellhead production, with additional impacts to processing activity, challenging the gas system's ability to meet demand from electric generation and home heating. Natural gas production declined most significantly in the eastern United States—in the Marcellus and Utica Shale formations—where production dropped by 23 to 54%. The Elliott report found that natural gas fuel supply issues accounted for 20% of unplanned generating unit outages, derates, and failures to start.

Analysis also revealed a close call in the New York City area. Due to a dearth in fuel supply, ConEdison, the natural gas provider for Manhattan, faced rapidly declining pressure at its citygate that threatened the reliability of supply to their system. If not for ConEdison's ability to tap their own LNG supplies and other measures, the gas distribution system would have been at high risk of widespread gas system outages on a scale that risked the safety and lives of millions. Although unrelated to generation outages, this close call underscores the societal importance of a reliable natural gas supply.

Winter Storm Elliott is by no means an isolated example of the link between natural gas supply and electric reliability. In the United States, Elliott was the fifth event in the past 13 years in which natural gas supply

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disruption was a factor in cold weather-related generation outages that jeopardized bulk power system reliability.

Extreme Winter Events

Event	Geographic Area	Unavailable Generation (MW)
February 1–5, 2011	Texas and Southwest	14,702
January 6–8, 2014 (Polar Vortex)	Midwest, South Central, East Coast	9,800
January 15–19, 2018	South Central	15,600
February 8–20, 2021 (Winter Storm Uri)	Texas and South Central	65,622
December 21–26, 2022 (Winter Storm Elliott)	Central, Midwest, large parts of Southeast and Northeast	90,500

The path to resolving interdependency and interconnection of the gas and electric sectors is complex. Jurisdictional responsibilities are spread across the states and different federal agencies. The number and diversity of entities across the natural gas value chain adds further complexity. As the electric system increasingly relies on natural gas, more gas infrastructure, including pipelines and storage, is needed to enhance deliverability. In fact, the natural gas-fired units are enabling the transformation to a reduced carbon future.

The natural gas industry is making encouraging progress on commercial practices and has made voluntary commitments to improve winter preparation. Efforts such as the North American Energy Standards Board (NAESB) Forum report continue to prompt positive action. NARUC has launched its GEAR Taskforce with results expected later this year or by early next year. For its part, NERC continues to collaborate extensively with industry and policymakers. NERC has enhanced its Reliability Standards to better prepare generators for winter extremes, implement training, and establish communication protocols between generators and grid operators. Current standards projects encompass extreme weather planning and energy assurance requirements. NERC and NPCC are jointly studying the Northeast gas system, with results anticipated later this year. NERC remains committed to continued collaboration on this critical interdependency.

As we approach the upcoming winter season, NERC encourages all entities across the gas-electric value chain—from production to the burner tip and the busbar—to take all necessary actions to prepare for extreme cold, keep gas flowing, and keep the lights and furnaces on.

Source: https://www.nerc.com/news/Headlines%20DL/Natural%20Gas%20Statement_12SEP24.pdf

Why Do We Need Gas Infrastructure Expansion & Related Policy?

Gas Generation Replacing Coal

Since 2006, gas began replacing coal in PJM.

Limited Pipeline Growth

Since then, pipeline growth has been limited.[1]

Reliability Issues

Winter gas demand and risk[2] have impacted grid reliability.

We Must Address Winter Reliability Risk for Gas and Electricity.

Source:

(1) *Since 2006, gas infrastructure usage grew: 109%, while gas infrastructure build grew 28%. See: http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_a.htm and https://www.phmsa.dot.gov/data-and-statistics/pipeline/annual-report-mileage-gas-distribution-systems taken: on May 28, 2024.*

(2) *Gas demand for heating and electricity are highest in winter, when gas operational risk is highest.*

PJM Is Making Gas-Electric Coordination a Strategic Priority

PJM advanced the following actions on gas-electric coordination since last winter:

PJM Internal

✓	Operating the system more conservatively during critical periods by committing certain gas units for multiple days due to fuel supply risk
✓	Made generator winterization mandatory

PJM and Stakeholders

✓	EGCSTF* – Agreed to conform timing of intraday commitment of gas units to be commensurate with intraday gas nomination cycles during critical periods

PJM and Industry

✓	Engaged with NARUC, NERC, NAESB, Joint-RTOs on strategic gas-electric improvements
✓	Collaborating with gas industry on improved communication from upstream gas sector during critical periods

Federal and State Policy Issues

✓	State outreach
✓	FERC and U.S. congressional outreach

**PJM Electric Gas Coordination Senior Task Force*

See full list of updates as of July 11, 2024: [20240722-item-07---winter-storm-elliott-recommendations-progress-summary.ashx (pjm.com)]

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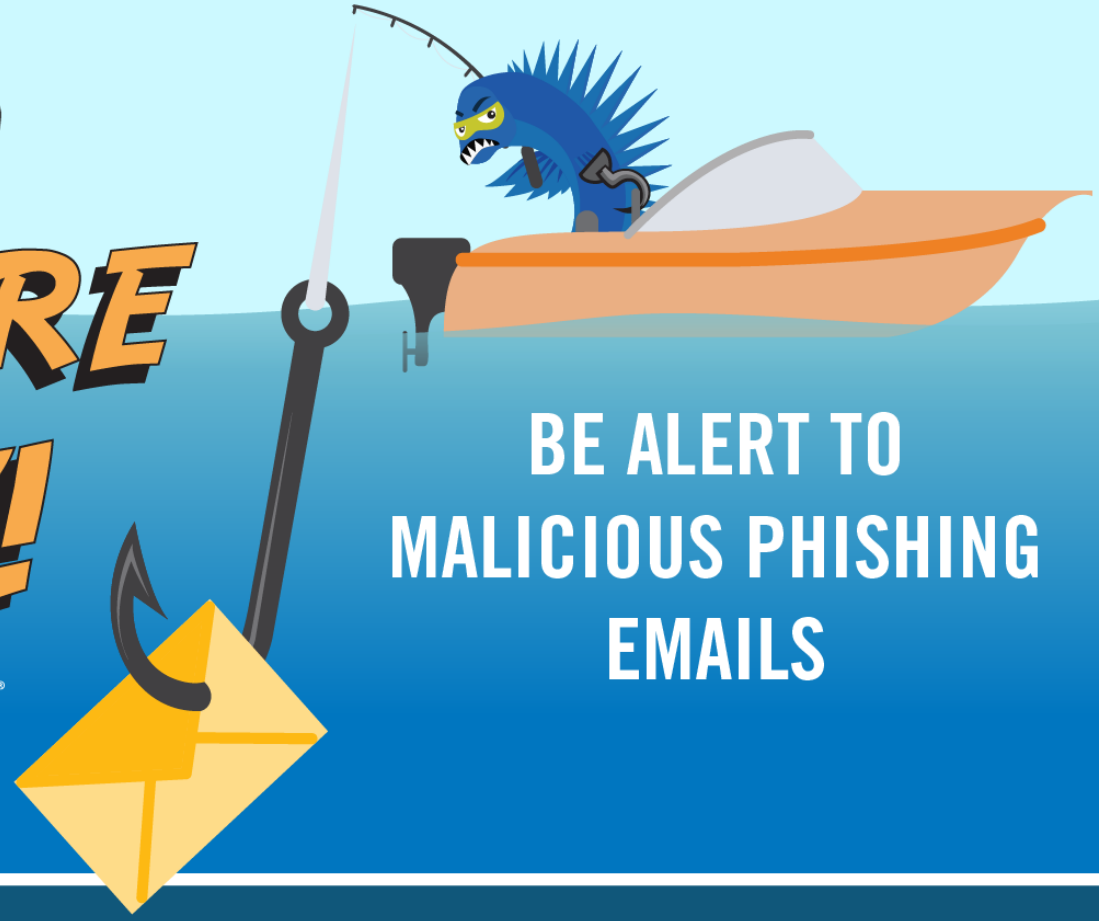

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